

Stormwater Management Report

Elk Cannabis Cultivation Facility

Block 44, Lot 4

Township of Elk

Gloucester County, New Jersey



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1.0 Introduction

Pennoni Associates, Inc., has been retained by Country Roads Realty, LLC to provide site design for cannabis cultivation facility in Elk Township, Gloucester County, New Jersey. The Applicant proposes to construct a cannabis facility on the subject site including primary and accessory buildings, access driveway, parking area, stormwater management facilities, and necessary utilities.

2.0 Project Description

Location

The property is located along Buck Road in Elk Township, New Jersey. The property can be found on the United States Geological Survey (USGS) 7.5- minute topographic quadrangle for Pitman West, New Jersey. A copy of the USGS map is provided as Figure 1. The property consists of Block 44, Lot 4. A copy of the Township tax map is provided as Figure 2.

Pre-Developed Conditions

The site presently consists of agricultural farmland, irrigation ponds, wetland areas, a single-family residence, a barn, and paved/unpaved access roads. Intermittent wooded areas are present along the north, east, south and west sides of the site, Buck Road along the eastern side of the site, agricultural uses to the north and south, and wooded area to the west. The site is owned and maintained by Country Roads Realty LLC.

The existing watershed area for this analysis consists of nine (9) subdrainage areas; Existing Drainage Area 1 (EDA-1) through Existing Drainage Area 9 (EDA-9), draining to five (5) point of interest (POI-1 through POI-5). The drainage areas and points of interest are illustrated on the Pre-Developed Drainage Area Plan CS9001 in Appendix H).

Existing Drainage Area 1 (EDA-1) consists of the northerly side of the main gravel drive. EDA-1 drains towards an existing irrigation pond 1 (POI-1). Existing irrigation pond 1 is interconnected by a 12" pipe to irrigation pond 2.

Existing Drainage Area 2 (EDA-2), Existing Drainage Area 3 (EDA-3) and Existing Drainage Area 4 (EDA-4) consists of agricultural farmland and paved/unpaved access roads. EDA-2, EDA-3 and EDA-4 drain in a southeasterly direction towards wetland areas and existing irrigation pond. The existing pond is referred to as pond 2. The outflow from pond 2 is routed to POI-2.

Existing Drainage Area 5 (EDA-5) consists of agricultural farmland. EDA-5 drains in a southerly direction towards existing irrigation pond 5, referred to as POI-3.

Existing Drainage Area 6 (EDA-6), Existing Drainage Area 7 (EDA-7) and Existing Drainage Area 8 (EDA-8) consists of agricultural farmland. EDA-6, EDA-7 and EDA-8 drain in a southwesterly direction towards wetland areas and existing irrigation pond 6. The outflow from pond 6 is routed to POI-4.

Existing Drainage Area 9 (EDA-9) consists of agricultural farmland. EDA-9 drains in a westerly direction towards a wetland area, referred to as POI-5.

The pre-developed hydrograph calculations are included as Appendix A. The Pre-Developed Drainage Area Plan (dwg. CS9001) is included within Appendix H.

Proposed Conditions

The Applicant is proposing to construct five (5) modular greenhouses, one (1) headhouse, forty-four (44) parking spaces, stormwater collection and management systems, landscaping and lighting.

The proposed watershed area for this analysis consists of thirteen (13) drainage areas Proposed Drainage Area 1 (PDA-1) through Proposed Drainage Area 13 (PDA-13) draining to five (5) point of interest (POI-1 through POI-5). The drainage areas and points of interest are illustrated on the Post-Developed Drainage Area Plan CS9002 in Appendix H).

Proposed Drainage Area 1 (EDA-1) consists of the northerly side of the main gravel drive. PDA-1 drains towards an existing irrigation pond 1 (POI-1). Existing irrigation pond 1 is interconnected by a 12" pipe to irrigation pond 2.

Proposed Drainage Area 2 (PDA-2), Proposed Drainage Area 3 (PDA-3) and Proposed Drainage Area 4 (PDA-4) consists of proposed greenhouses, paved/unpaved access roads and grass areas. PDA-2, PDA-3 and PDA-4 drain in a southeasterly direction towards wetland areas and existing irrigation pond. The existing pond is referred to as pond 2. The outflow from pond 2 is routed to POI-2.

Proposed Drainage Area 5 (PDA-5) consists of a grass area adjacent to the proposed parking area. PDA-5 drains in a southerly direction towards existing irrigation pond 5, referred to as POI-3.

Proposed Drainage Area 6 (PDA-6), Proposed Drainage Area 7 (PDA-7) and Proposed Drainage Area 8 (PDA-8) consists of a greenhouse incubator, sidewalk areas and grass. PDA-6, PDA-7 and PDA-8 drain in a southwesterly direction towards a wetland area and existing irrigation pond 6. The outflow from pond 6 is routed to POI-4.

Proposed Drainage Area 9 (PDA-9) consists of proposed greenhouses and grass areas. PDA-9 drains in a westerly direction towards a wetland area, referred to as POI-5.

Proposed Drainage Area 10 (PDA-10) consists of proposed greenhouses and grass areas. The runoff drains to proposed inlets and stormwater conveyance system located between the greenhouses to proposed bioretention Basin 4. Bioretention Basin 4 discharges through an 18" HDPE pipe towards a wetland area and existing irrigation pond 6. The outflow from pond 6 is routed to POI-4.

Proposed Drainage Area 11 (PDA-11) consists of proposed greenhouses and grass areas. The runoff drains to proposed inlets and stormwater conveyance system located between the greenhouses to proposed bioretention Basin 2. Bioretention Basin 2 discharges through an 18" HDPE pipe towards a wetland area and existing irrigation pond 2. The outflow from pond 2 is routed to POI-2.

Proposed Drainage Area 12 (PDA-12) consists of proposed headhouse, parking area, driveways and stormwater management area. The runoff drains to proposed inlets and stormwater conveyance system to proposed bioretention Basin 3. Bioretention Basin 3 provides water quality treatment and quantity reduction. Bioretention Basin 3 is routed to bioretention Basin 2. Bioretention Basin 2 discharges through a 24" HDPE pipe towards a wetland area and existing irrigation pond 2. The outflow from pond 2 drains to POI-2.

Proposed Drainage Area 13 (PDA-13) consists of proposed greenhouses, driveways and stormwater management area. The runoff drains to proposed inlets and stormwater conveyance system to proposed bioretention Basin 1. Bioretention Basin 1 provides water quality treatment. Bioretention Basin 1 is interconnected with bioretention Basin 2. Bioretention Basin 2 discharges through a 24" HDPE pipe towards a wetland area and existing irrigation pond 2. The outflow from pond 2 drains to POI-2.

The post-developed hydrograph calculations are included as Appendix B. The Post-Developed Drainage Area Plan (dwg. CS9002) is included within Appendix H.

Table 1 below summarizes the pre- vs. post-developed impervious areas for the **analyzed** portion of the site.

Table 1 pre- vs. post-developed impervious areas

	Non-Motor Vehicle Impervious Area (acre)	Motor Vehicle Surface Area (acre)
Pre-Developed	0.10	0.72
Post-Developed	5.61	2.56
Difference	+5.51	+1.84

The total on-site pre-developed motor vehicle surface area is 0.94 acres with 0.72 acres located within the analyzed portion of the site. Approximately 0.22 acres of existing motor vehicular will be removed outside the analysis area, reducing the motor vehicle surface draining to pond 1 and pond 2.

Note: An additional 58,036 sf/1.33 acres of existing building area on-site will be removed outside of the analysis area. reducing the impervious area draining to pond 1 and pond 2. This area is not included within the Table 1 above.

3.0 Soils

The Natural Resources Conservation Service (NRCS) Soil Survey was reviewed for the site. The soils in the location of the proposed site are Atsion sand (AtsAr), 0 to 2 percent slopes, Type A/D soils; Aura-Sassafras sandy loams (AvtB), 2 to 5 percent slopes, Type B soils; Downer sandy loam (DoeA), 0 to 2% slopes, Type A soils and Hammonton loamy sand (HbmB), 0 to 5 percents slopes, Type B soils. The NRCS Soil Survey map is provided as Figure 3.

4.0 Watershed Area

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

FEMA FIRM panel number 34015C0194E (effective January 20, 2010) (Figure 4) indicates the immediate project area is within Zone X (refer to Figure 4).

Existing ponds onsite (referred to as Pond 1 and Pond 2) have upstream drainage areas of greater than 50 acres, and a defined bank, and therefore are regulated by NJDEP.

To establish a flood hazard limit line, contour elevation data for the ponds and surrounding upland area is required. Elevation data for the onsite upland area was obtained from field survey performed by Pennoni on 5/23/22 and 9/20/24. The vertical datum is 1988 NAVD. Field survey contour data has been supplemented with 2015 DVRPC Lidar data obtained from NOAA data access viewer to determine the total upstream drainage area to the ponds.

The FHA limit line elevation for the ponds was determined by performing a routing to establish the ponds peak elevation for the 100-year projected storm rainfall plus 25%. This corresponds to flood elevations of 121.19 and 121.09, respectively. An application will be submitted to NJDEP for line verification and individual permit.

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. The creation of one-quarter acre or more of “regulated impervious surface” since February 2, 2004; The project will create more than one-quarter acre of “regulated impervious surface”.

6.0 Design Criteria

Nonstructural measures employed in the engineering of this site include.

1. Protect areas that provide water quality benefits or areas particularly susceptible to erosion of sediment loss.
 - Protection of natural areas adjacent to improvement area.
 - Construction of the project will comply with the Soil Erosion and Sediment Control Act, NJSA 4:24-39 et seq. and implementing rules.
2. Minimize the decrease in the pre-construction time of concentration.
 - Runoff from the site will be routed through bioretention basins minimizing the decrease in the time of concentration to the point of interest within the watershed.
3. Minimize land disturbance including clearing and grading.
 - Land disturbance has been minimized to the extent practical.
4. Minimize soil compaction.
 - Light construction equipment will be utilized to minimize soil compaction. No heavy equipment shall be permitted to operate within the footprint of the stormwater management facilities. If equipment is required within the basins, it shall be low ground pressure equipment.

Green Infrastructure

To satisfy the groundwater recharge, runoff quality and runoff quantity the project design must utilize green infrastructure BMP's 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 Infiltration Basin – Four (4) small scale 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 infiltration basin is subject to a maximum contributory drainage area of 2.5 acres.

The proposed bioretention basins (Bio 1, Bio 2, Bio 3 and Bio 4) have contributory drainage areas of 2.23 acres; 1.88 acres; 2.45 acres and 2.50 acres respectively. The proposed green infrastructure BMP's comply with N.J.A.C. 7:8-5.3 (b).

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.

Groundwater recharge will comply with number 2 above - 100 percent of the difference between the site's pre- and post-developed 2-year runoff volumes shall be infiltrated.

Pre-developed 2-year runoff volume = 91,825 cf

Post-developed 2-year runoff volume = 126,179 cf

Total required infiltration volume = 34,354 cf (126,179 cf – 91,825 cf = 34,354 cf)

Volume infiltrated within Bioretention Basin 1 – 3,027 cf

Volume infiltrated within Bioretention Basin 2 – 6,048 cf

Volume infiltrated within Bioretention Basin 3 – 10,337 cf

Volume infiltrated within Bioretention Basin 4 – 19,449 cf

Total volume infiltrated = 38,861 cf (3,027 cf + 6,048 cf + 10,337 cf + 19,449 cf = 38,861 cf).

Therefore, groundwater recharge requirements will be met.

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 surfaces, must be treated for 80% TSS reductions.

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.

The water quality standards only apply if there is a net increase of 0.25 acres or more of motor vehicle surfaces. The project will create a net increase of 1.84 acres of motor vehicle surface. Water quality measures will be provided within bioretention Basin 1 and bioretention Basin 2 for the increase in motor vehicle surface.

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 that there is no increase in peak runoff rates of stormwater leaving the site for the 2, 10 and 100 year storm events 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) 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 project is designed to demonstrate that there is no increase in peak runoff rates of stormwater leaving the site for the 2-, 10- and 100-year storm events and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site (**option 2 above**).

Table 2 below details the pre-developed vs. post-developed peak runoff rate for the current rainfall precipitation depth and Table 3 below details the pre-developed vs. post-developed peak runoff rate for the projected (year 2100) rainfall precipitation depth to POI-1.

Table 2 pre-developed vs. post-developed peak runoff rate for the current year rainfall POI-1

Storm (Year)	Pre-Developed Pond 1 Inflow Rate (cfs)	Pre-Developed Pond 1 Routed Outflow to Pond 2 (cfs)	Pre-Developed Pond 1 Peak Elev. (ft)	Post-Developed Pond 1 Inflow Rate (cfs)	Post-Developed Pond 1 Routed Outflow to Pond 2 (cfs)	Post-Developed Pond 1 Peak Elev. (ft)
2	0.14	0.13	118.63	0.52	0.31	118.69
10	0.23	0.13	118.66	0.83	0.33	118.77
100	0.51	0.13	118.74	1.79	0.50	119.00

Note: A 12" pipe interconnects pond 1 and pond 2. Lowest roadway elevation at crossing el. 120.26

Table 3 pre-developed vs. post-developed peak runoff rate for the projected year 2100 rainfall POI-1

Storm (Year)	Pre-Developed Pond 1 Inflow Rate (cfs)	Pre-Developed Pond 1 Routed Outflow to Pond 2 (cfs)	Pre-Developed Pond 1 Peak Elev. (ft)	Post-Developed Pond 1 Inflow Rate (cfs)	Post-Developed Pond 1 Routed Outflow to Pond 2 (cfs)	Post-Developed Pond 1 Peak Elev. (ft)
2	0.16	0.13	118.63	0.59	0.34	118.71
10	0.28	0.13	118.65	1.01	0.27	118.83
100	0.81	0.13	118.72	2.81	0.71	119.07

Note: A 12" pipe interconnects pond 1 and pond 2. Lowest roadway elevation at crossing el. 120.26

Table 4 below details the pre-developed vs. post-developed peak runoff rate for the current rainfall precipitation depth and Table 5 below details the pre-developed vs. post-developed peak runoff rate for the projected (year 2100) rainfall precipitation depth to POI-2.

Table 4 pre-developed vs. post-developed peak runoff rate for the current year rainfall POI-2

Storm (Year)	Pre-Developed Pond 2 Inflow Rate (cfs)	Pre-Developed Pond 2 Routed Outflow (cfs)	Pre-Developed Pond 2 Peak Elev. (ft)	Post-Developed Pond 2 Inflow Rate (cfs)	Post-Developed Pond 2 Routed Outflow (cfs)	Post-Developed Pond 2 Peak Elev. (ft)
2	4.73	0.00	118.84	4.51	0.00	118.84
10	10.94	0.00	119.08	7.95	0.00	119.05
100	26.30	0.00	119.37	16.91	0.00	119.33

Table 5 pre-developed vs. post-developed peak runoff rate for the projected year 2100 rainfall POI-2

Storm (Year)	Pre-Developed Pond 2 Inflow Rate (cfs)	Pre-Developed Pond 2 Routed Outflow (cfs)	Pre-Developed Pond 2 Peak Elev. (ft)	Post-Developed Pond 2 Inflow Rate (cfs)	Post-Developed Pond 2 Routed Outflow (cfs)	Post-Developed Pond 2 Peak Elev. (ft)
2	6.03	0.00	118.89	5.29	0.00	118.90
10	14.80	0.00	119.18	10.11	0.00	119.14
100	40.46	0.00	119.58	26.28	0.00	119.53

Table 6 below details the pre-developed vs. post-developed peak runoff rate for the current rainfall precipitation depth and Table 7 below details the pre-developed vs. post-developed peak runoff rate for the projected (year 2100) rainfall precipitation depth to POI-3.

Table 6 pre-developed vs. post-developed peak runoff rate for the current year rainfall POI-3

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Pre-Developed Runoff Volume (cf)	Routed Post-Developed Peak Runoff Rate (cfs)	Routed Post-Developed Peak Volume (cf)	Runoff Rate Increase from Pre-Developed (cfs)	Runoff Volume Increase from Pre-Developed (cf)
2	1.46	6,719	0.17	1,060	-1.29	-5,659
10	3.44	14,817	0.62	2,874	-2.82	-11,943
100	8.07	34,478	1.82	7,820	-6.25	-26,658

Table 7 pre-developed vs. post-developed peak runoff rate for the projected year 2100 rainfall POI-3

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Pre-Developed Runoff Volume (cf)	Routed Post-Developed Peak Runoff Rate (cfs)	Routed Post-Developed Peak Volume (cf)	Runoff Rate Increase from Pre-Developed (cfs)	Runoff Volume Increase from Pre-Developed (cf)
2	1.91	8,419	0.27	1,420	-1.64	-6,999
10	4.60	19,384	0.91	3,975	-3.69	-15,409
100	12.22	52,031	2.98	12,513	-9.24	-39,518

Table 8 below details the pre-developed vs. post-developed peak runoff rate for the current rainfall precipitation depth and Table 9 below details the pre-developed vs. post-developed peak runoff rate for the projected (year 2100) rainfall precipitation depth to POI-4.

Table 8 pre-developed vs. post-developed peak runoff rate for the current year rainfall POI-4

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Pre-Developed Runoff Volume (cf)	Routed Post-Developed Peak Runoff Rate (cfs)	Routed Post-Developed Peak Volume (cf)	Runoff Rate Increase from Pre-Developed (cfs)	Runoff Volume Increase from Pre-Developed (cf)
2	0.67	3,911	0.27	1,216	-0.40	-2,695
10	1.76	21,722	0.41	8,838	-1.35	-12,884
100	13.81	76,578	3.40	42,901	-10.41	-33,677

Table 9 pre-developed vs. post-developed peak runoff rate for the projected year 2100 rainfall POI-4

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Pre-Developed Runoff Volume (cf)	Routed Post-Developed Peak Runoff Rate (cfs)	Routed Post-Developed Peak Volume (cf)	Runoff Rate Increase from Pre-Developed (cfs)	Runoff Volume Increase from Pre-Developed (cf)
2	0.91	4,989	0.30	1,571	-0.61	-3,418
10	2.86	34,277	0.57	16,393	-2.29	-17,884
100	26.54	126,594	8.33	76,090	-18.21	-50,504

Table 10 below details the pre-developed vs. post-developed peak runoff rate for the current rainfall precipitation depth and Table 11 below details the pre-developed vs. post-developed peak runoff rate for the projected (year 2100) rainfall precipitation depth to POI-5.

Table 10 pre-developed vs. post-developed peak runoff rate for the current year rainfall POI-5

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Pre-Developed Runoff Volume (cf)	Routed Post-Developed Peak Runoff Rate (cfs)	Routed Post-Developed Peak Volume (cf)	Runoff Rate Increase from Pre-Developed (cfs)	Runoff Volume Increase from Pre-Developed (cf)
2	1.95	10,439	1.86	6,600	-0.09	-3,839
10	5.04	24,276	2.88	12,141	-2.16	-12,135
100	12.60	58,928	5.67	26,614	-6.93	-32,314

Table 11 pre-developed vs. post-developed peak runoff rate for the projected year 2100 rainfall POI-5

Storm (Year)	Pre-Developed Runoff Rate (cfs)	Pre-Developed Runoff Volume (cf)	Routed Post-Developed Peak Runoff Rate (cfs)	Routed Post-Developed Peak Volume (cf)	Runoff Rate Increase from Pre-Developed (cfs)	Runoff Volume Increase from Pre-Developed (cf)
2	2.64	13,298	2.08	7,783	-0.56	-5,515
10	6.90	32,225	3.51	15,372	-3.39	-16,853
100	19.47	90,354	8.42	40,496	-11.05	-49,858

The project reduces the rate of runoff and volume of runoff leaving the site for the 2-, 10-, and 100-year storm events for current and projected rainfall.

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 NRCS National Engineering Handbook, Part 630.

Pre- and post-developed times of concentration (TC) are determined using the hydraulically longest flow path.

Curve numbers (CN) for the drainage areas are based on the hydrologic soil group and land use. The developed area is made up of Type A, B and D soils, therefore the following CN values were utilized:

Type A soils – Row Crops 67; Small Grain 63; Woods 30; Grass 39; Impervious 98

Type B soils – Row Crops 78; Woods 55; Grass 61 and Impervious 98

Type D soils – Dirt 89

The impervious areas were calculated as separate subareas to generate hydrographs without weighted CNs as outlined in the CMP N.J.A.C. 7:50-6.84(a) 6.i (2) and 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 rates and volumes.

8.0 Key Hydrologic Principals

A 24-hour, NOAA _C (Region C) storm distribution and the DelMarVa unit hydrograph was utilized with the following rainfall amounts, within Gloucester County for each storm analyzed (reference Appendix G). Precipitation adjustment factors are included in the precipitation depths below.

Current Year Rainfall Intensities

2 year	3.45 inches
10 year	5.35 inches
100 year	9.06 inches

Projected Rainfall Intensities (Year 2100)

2 year	3.92 inches
10 year	6.21 inches
100 year	12.05 inches

9.0 Stormwater Management

Stormwater management measures are designed so that there is no increase in peak runoff rates of stormwater leaving the site for the 2-, 10- and 100-year storm events and that the increased volume or change in timing of stormwater runoff will not increase flood damage at or downstream of the site. Bentley's Pondpack Connect Edition was used to perform the calculations. Bioretention basin routing calculations are performed **without** exfiltration. Pre- and post-developed drainage area delineations can be found on Sheets CS-9001 and CS-9002 in Appendix H.

Bioretention Basin #1

Basin #1 is a small scale bioretention basin with bottom elevation 121.50. The bioretention basin provides water quality treatment for portions of the entrance drive. The basin outlet consists of a 70-foot-wide grass spillway (el. 122.10). Bioretention basin #1 is interconnected with bioretention basin #2 for stormwater quantity control.

Table 12 below provides a summary of the basin inflow rates, outflow rates, storage volumes and elevations for the current year rainfall and Table 13 provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for the projected year 2100 rainfall.

Table 12: Bioretention Basin #1 - Proposed Basin Parameters (Current Rainfall)

Storm (Year)	Peak Inflow	Peak Outflow (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	6.63	2.19	9,440	122.63
10	11.16	3.04	14,961	123.08
100	21.74	15.71	23,229	123.69

Table 13: Bioretention Basin #1 - Proposed Basin Parameters (Projected Rainfall Year 2100)

Storm (Year)	Peak Inflow	Peak Outflow (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	7.66	2.01	10,453	122.72
10	13.29	10.08	17,554	123.27
100	31.47	23.66	29,377	124.13

Note: Bioretention Basin 1 and Bioretention Basin 2 are interconnected ponds for quantity control. The water surface elevation in the downstream pond reaches a hydraulic grade great enough to cause backwater effects on the upstream spillway and flow to reverse towards the upstream pond. The Pondpack program uses nodule based numerical relaxation to converge to the correct pond water surface / flow balance at every routing time step.

Bioretention Basin #2

Basin #2 consists of a small scale bioretention basin with bottom elevation 121.50. The basin is interconnected with bioretention basin #1. The outlet structure consists of a pre-cast concrete box with an 8-inch diameter orifice (el. 122.10), a 2-foot-wide rectangular weir (el. 123.00) and a grate (el. 124.60). Basin 2 discharges to pond 2.

Table 14 below provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for the current year rainfall and Table 15 provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for the projected year 2100 rainfall.

Table 14: Bioretention Basin #2 - Proposed Basin Parameters (Current Rainfall)

Storm (Year)	Peak Inflow	Peak Outflow (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	6.69	0.64	18,610	122.63
10	12.24	1.51	29,369	123.08
100	32.81	5.36	44,977	123.69

Table 15: Bioretention Basin #2 - Proposed Basin Parameters (Projected Rainfall Year 2100)

Storm (Year)	Peak Inflow	Peak Outflow (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	8.41	0.82	20,600	122.72
10	21.28	2.41	34,265	123.27
100	46.96	9.47	56,552	124.14

Bioretention basin 2 discharges through a 24" HDPE pipe with scour hole. The 24" HDPE is designed to convey the routed 25-year projected storm discharge (4.55 cfs) and the 100-year projected storm discharge (9.47 cfs). A scour hole is proposed at the pipe outlet. The slope of the area downstream of the scour hole is 1.3%. FlowMaster, a hydraulic software program by Bentley, was utilized to calculate the capacity and velocity of the downstream receiving area (refer to Appendix F for Basin 2, point discharge calculations). The surface of the area below the scour hole consists of brush and grass therefore, a Manning's "n" of 0.035 was utilized in the calculations. The flow velocity downstream of the scour hole is 0.99 fps. The site soils consist of fine to medium sand. The maximum stable slope for point discharges as indicated in the Standards for Soil Erosion and Sediment Control in New Jersey, Chapter 21, Table 21-1 for sandy soils is 1.8%. The discharge point will remain stable for the 100-year projected rainfall (year 2100) bioretention Basin 2 discharge.

A 50' wide emergency spillway (el. 124.70) is designed to route basin inflow (49.96 cfs) for the 100-year projected rainfall (year 2100). The depth of flow over the spillway is 6-inches (refer to Appendix F for spillway design calculations). The top of bank will be constructed at el. 126.20, providing 1-foot of freeboard above the spillway flow depth elevation.

Bioretention Basin #3

Basin #3 consists of a small scale bioretention basin with bottom elevation 121.50. The basin is located within the center of the proposed paved parking area. The basin provides water quality treatment and quantity control for the parking area and adjacent drives prior to discharging to Bioretention Basin #2. The outlet structure consists of a pre-cast concrete box with a 10-inch diameter orifice (el. 122.50), and a grate (el. 125.00).

Table 16 below provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for the current year rainfall and Table 17 provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for the projected year 2100 rainfall.

Table 16: Bioretention Basin #3 - Proposed Basin Parameters (Current Rainfall)

Storm (Year)	Peak Inflow	Peak Outflow (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	7.70	0.37	16,204	122.85
10	11.73	1.28	22,413	123.22
100	20.40	2.76	37,080	124.02

Table 17: Bioretention Basin #3 - Proposed Basin Parameters (Projected Rainfall Year 2100)

Storm (Year)	Peak Inflow	Peak Outflow (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	8.64	0.54	17,599	122.94
10	13.80	1.83	25,713	123.41
100	28.26	3.50	50,571	124.70

Bioretention Basin #4

Basin #4 consists of a small scale bioretention basin with bottom elevation 122.80. The basin is located on the westerly side of the site. The outlet structure consists of a pre-cast concrete box with a 3-inch diameter orifice (el. 123.80), a 2.75-foot-wide rectangular weir (el. 124.00) and a grate (el. 126.30). Basin 4 discharges to pond 6.

Table 16 below provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for the current year rainfall and Table 17 provides summary of the basin inflow rates, outflow rates, storage volumes and elevations for the projected year 2100 rainfall.

Table 16: Bioretention Basin #4 - Proposed Basin Parameters (Current Rainfall)

Storm (Year)	Peak Inflow	Peak Outflow (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	5.60	0.00	18,072	123.73
10	8.52	0.19	24,425	124.04
100	15.02	2.60	32,763	124.44

Table 17: Bioretention Basin #4 - Proposed Basin Parameters (Projected Rainfall Year 2100)

Storm (Year)	Peak Inflow	Peak Outflow (cfs)	Storage Volume (cf)	Peak Elevations (ft)
2	6.28	0.01	20,437	123.85
10	10.04	0.48	26,083	124.12
100	21.28	6.27	40,861	124.81

Bioretention basin 4 discharges through an 18" HDPE pipe with scour hole. The 18" HDPE is designed to convey the routed 25-year projected storm discharge (2.04 cfs) and the routed 100-year projected storm discharge (6.27 cfs). A scour hole is proposed at the pipe outlet. The slope of the area downstream of the scour hole is 1.8%. FlowMaster, a hydraulic software program by Bentley, was utilized to calculate the capacity and velocity of the downstream receiving area (refer to Appendix F for Basin 4, point discharge calculations). The surface of the area below the scour hole consists of brush and grass therefore, a Manning's "n" of 0.035 was utilized in the calculations. The flow velocity downstream of the scour hole is 1.06 fps. The site soils consist of fine to medium sand. The maximum stable slope for point discharges as indicated in the Standards for Soil Erosion and Sediment Control in New Jersey, Chapter 21, Table 21-1 for sandy soils is 1.8%. The discharge point will remain stable for the 100-year projected rainfall (year 2100) bioretention Basin 4 discharge.

A 50' wide emergency spillway (el. 126.30) is designed to route basin inflow (21.28 cfs) for the 100-year projected rainfall (year 2100). The depth of flow over the spillway is 4 1/2-inches (refer to Appendix F for spillway design calculations). The top of bank will be constructed at el. 127.67 providing 1-foot of freeboard above the spillway flow depth elevation.

10.0 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.

As 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. Adjustment of the recharge rate to a lower value allows slower infiltration of runoff and more time for the infiltrated runoff to dissipate into the saturated zone. A reduced recharge rate will have a smaller mounding height but result in a longer duration of infiltration period. Several trials of different reduced recharge rates may be needed to find which recharge rate works. The duration of infiltration period based on the reduced recharge rate may not exceed 72 hours. The duration of infiltration is calculated as follows:

$$\text{Duration of Infiltration Period, } t = \frac{\text{volume of runoff to be infiltrated (cf)} \times (12 \text{ in/ft})}{\text{Infiltration area (sf)} \times \text{design permeability rate (in/hr)}}$$

Note: All basins infiltrate in less than 72 hours. Refer to duration of infiltration, Table 18 below.

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 E 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 the recharge rate results. Refer to Appendix E for groundwater mounding calculations.

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

Table 18: Groundwater Mounding Summary

BASIN	INPUT VARIABLES			DURATION OF INFILTRATION	ADJUSTED RATE	MOUND HEIGHT BY HANTUSH SPREADSHEET	ESTIMATED SEASONAL HIGH WATER	GROUNDWATER MOUND	BOTTOM OF BASIN
Basin	Volume of Runoff (CF)	Infiltration Area (SF)	Permeability Rate (in/hr)	Drain Time (hr)	Y/N	Ft.	ESHW (Elev)	GWM (Elev)	Bottom of Basin (Elev)
BIO1	3,027	11,521	6.00*	0.53	N	1.77	116.00	117.77	121.50
BIO2	6,049	22,622	6.00*	0.53	N	1.77	116.00	117.77	121.50
BIO3	10,337	15,105	2.00*	4.11	N	4.53	118.00	122.53	121.50
BIO3	10,337	15,105	0.25**	32.85	Y	3.18	118.00	121.18	121.50
BIO4	19,449	18,828	1.00*	12.40	N	6.75	118.00	124.75	122.80
BIO4	19,449	18,828	0.18**	68.87	Y	4.72	118.00	122.72	122.80

* With safety factor of 2

** Adjusted Recharge Rate

11.0 Storm Sewer Design

Storm sewer design consists of Type "A" inlets, manholes, and HDPE storm pipes. All proposed conveyance systems have been sized to accommodate the 25-year storm event. Rainfall intensities are based on NOAA data for Elk Township, NJ (Appendix G). The infrastructure is depicted on sheet CS9002, Post Developed Drainage Area Plan (Appendix H).

12.0 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 and proposed stormwater inlets, and an anti-tracking stabilized construction entrance (see Dwg. CS8001). The project will be submitted to the Gloucester County Conservation District for certification of a Soil Erosion and Sediment Control Plan prior to commencement of construction.

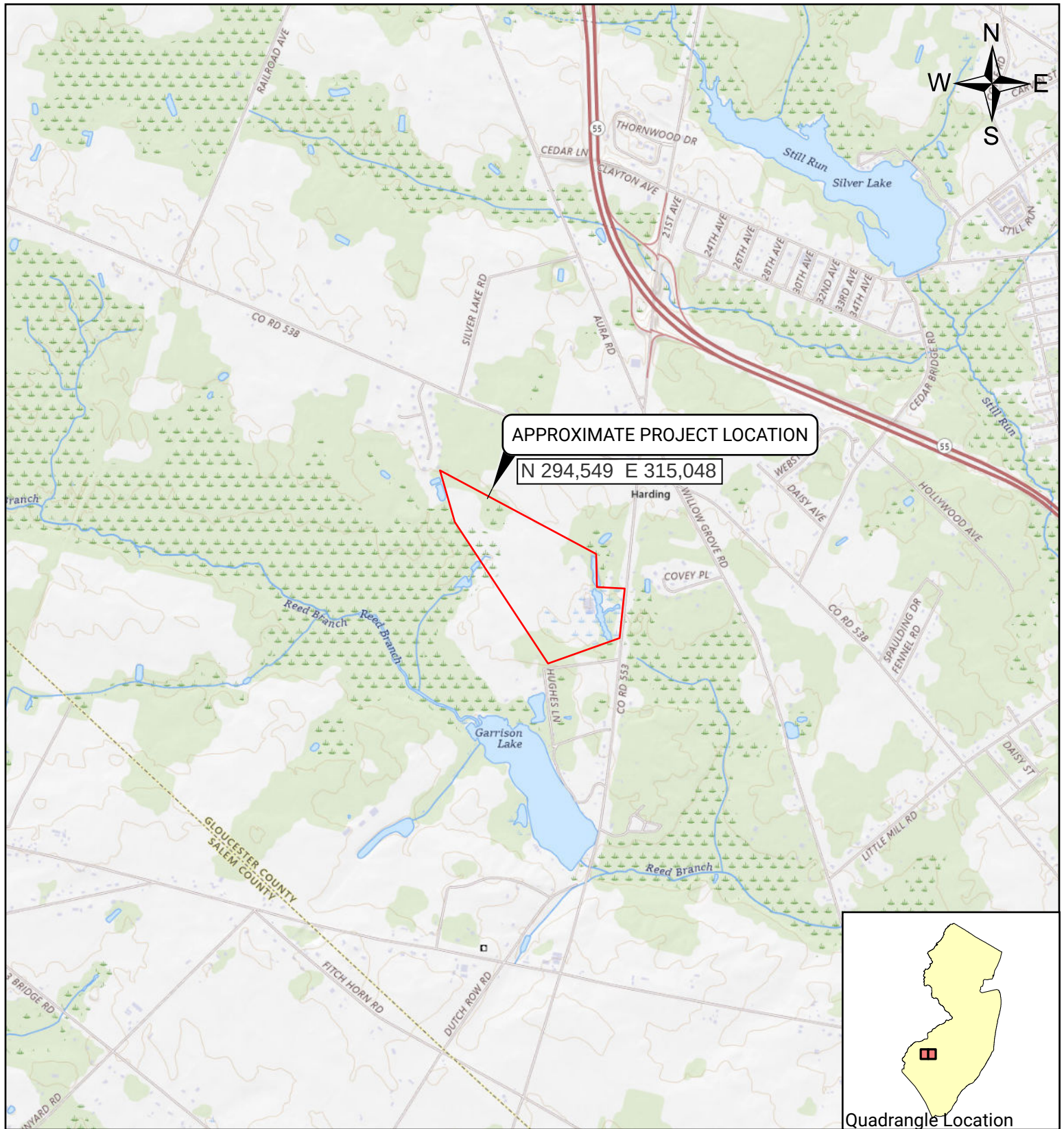
13.0 Conclusion

Pursuant to N.J.A.C. 7:8-5, the proposed stormwater management system has been designed such that:

- Stormwater management measures are designed so that there is no increase in peak runoff rates and runoff volumes of stormwater leaving the site for the 2-, 10- and 100-year storm events.
- The project will create a net increase of 1.84 acres of motor vehicle surface. Water quality treatment is provided utilizing bioretention basins with a TSS removal rate of 80%.
- Groundwater recharge will be provided by infiltrating 100 percent of the difference between the site's pre- and post-developed 2-year runoff volumes within Bioretention Basin 3 and Bioretention Basin 4.

Figures





Legend

 Project Area

FIGURE 1
USGS MAP
of
ELK CANNABIS CULTIVATION FACILITY
at
730 BUCK ROAD
BLOCK 44 LOT 4
prepared for
COUNTRY ROADS REALTY LLC
E(x): 314,971 N(y): 294,488



0 2,000
Feet

TOWNSHIP OF ELK

GLOUCESTER COUNTY, NJ

 Project Area



GLOUCESTER COUNTY, NJ



Legend

Project Area

Soil Map Units

- AtsAr - Atsion sand, 0 to 2 percent slopes, rarely flooded
- AugB - Aura sandy loam, 2 to 5 percent slopes, Northern Tidewater Area
- AvtB - Aura-Sassafras sandy loams, 2 to 5 percent slopes
- DoeA - Downer sandy loam, 0 to 2 percent slopes, Northern Coastal Plain
- FamA - Fallsington sandy loams, 0 to 2 percent slopes, northern coastal plain
- HbmaB - Hammonton loamy sand, 0 to 5 percent slopes, Northern Coastal Plain
- WokA - Woodstown-Glassboro complex, 0 to 2 percent slopes

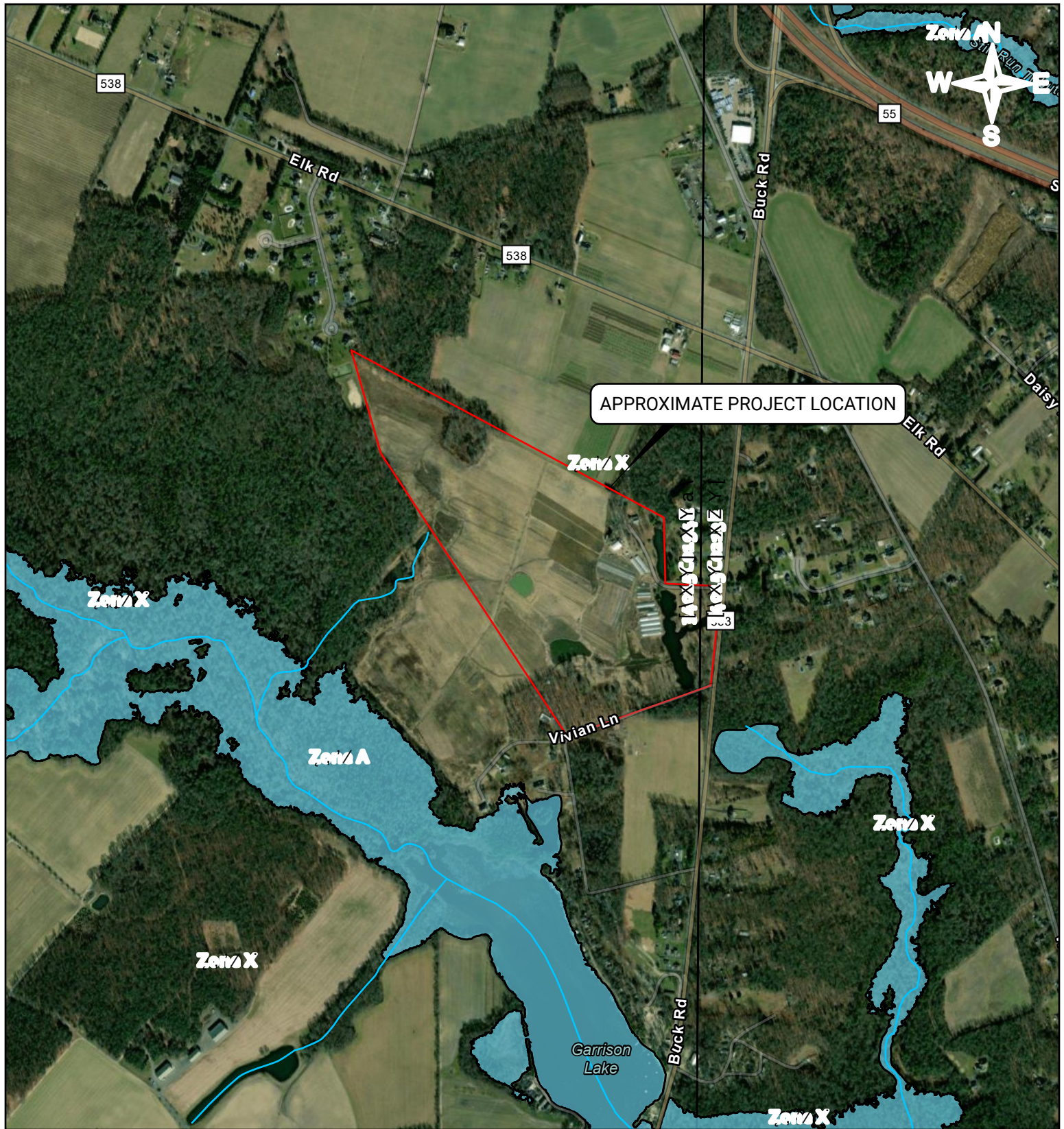
FIGURE 3
SOIL MAP
of
ELK CANNABIS CULTIVATION FACILITY
at
730 BUCK ROAD
BLOCK 44 LOT 4
prepared for
COUNTRY ROADS REALTY LLC
E(x): 314,971 N(y): 294,488



0 500
Feet

TOWNSHIP OF ELK

GLOUCESTER COUNTY, NJ



Appendix A:
Pre-Developed CN & Tc Calculations 2-, 10, & 100-year Storm
Current and Projected Rainfall



Scenario: 2 year

PRE-DEVELOPED CURRENT RAINFALL

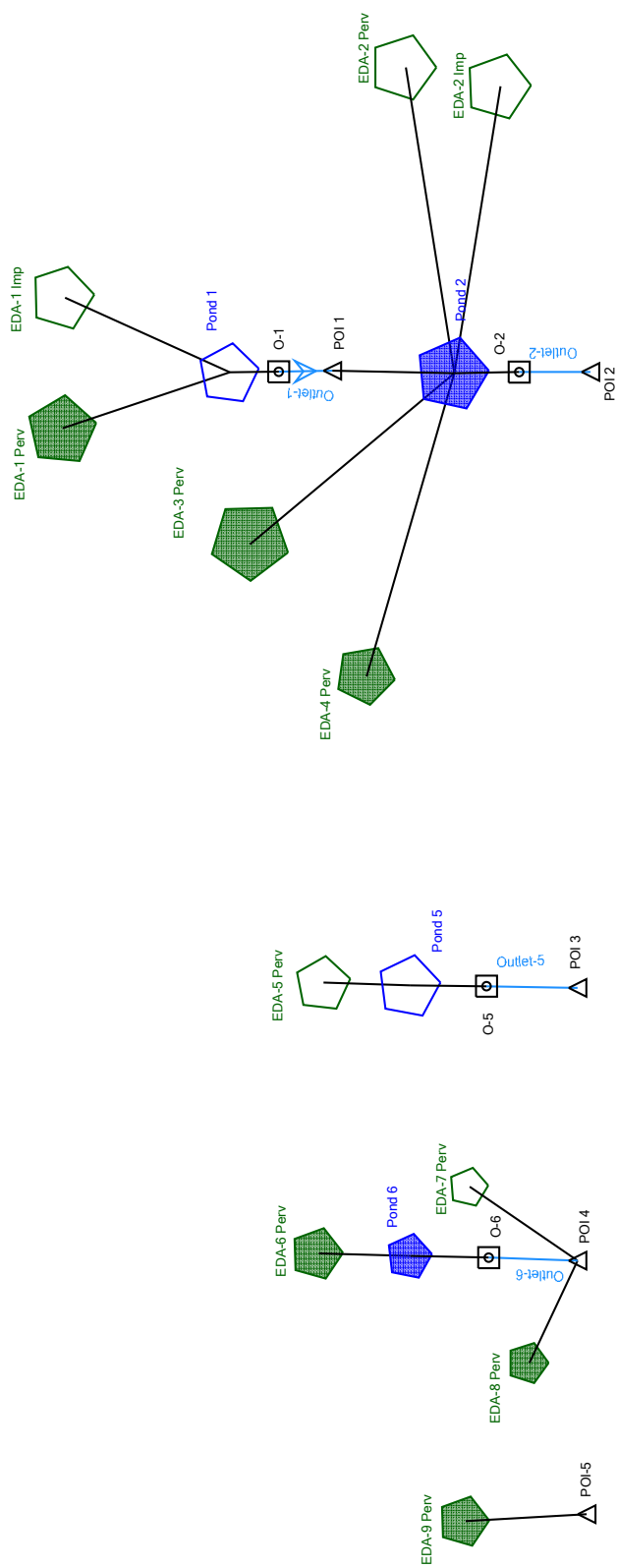


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EDA-2 Imp	Time of Concentration Calculations, 2 years	EDA-8 Perv	Runoff CN-Area, 2 years
EDA-2 Perv	Time of Concentration Calculations, 2 years	EDA-9 Perv	Runoff CN-Area, 2 years
EDA-3 Perv	Time of Concentration Calculations, 2 years	EDA-1 Imp	Runoff CN-Area, 2 years
EDA-4 Perv	Time of Concentration Calculations, 2 years		Unit Hydrograph Summary, 2 years
EDA-5 Perv	Time of Concentration Calculations, 2 years		Unit Hydrograph Summary, 10 years
EDA-6 Perv	Time of Concentration Calculations, 2 years		Unit Hydrograph Summary, 100 years
EDA-7 Perv	Time of Concentration Calculations, 2 years		Unit Hydrograph Summary, 2 years
EDA-8 Perv	Time of Concentration Calculations, 2 years		Unit Hydrograph Summary, 10 years
EDA-9 Perv	Time of Concentration Calculations, 2 years		Unit Hydrograph Summary, 100 years
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EDA-2 Perv	Runoff CN-Area, 2 years		Unit Hydrograph Summary, 100 years
EDA-3 Perv	Runoff CN-Area, 2 years		Unit Hydrograph Summary, 2 years
EDA-4 Perv	Runoff CN-Area, 2 years		Unit Hydrograph Summary, 10 years
EDA-5 Perv	Runoff CN-Area, 2 years		Unit Hydrograph Summary, 100 years
			Unit Hydrograph Summary, 2 years
			Unit Hydrograph Summary, 10 years
			Unit Hydrograph Summary, 100 years
			Unit Hydrograph Summary, 2 years
			Unit Hydrograph Summary, 10 years
			Unit Hydrograph Summary, 100 years
			Unit Hydrograph Summary, 2 years
			Unit Hydrograph Summary, 10 years
			Unit Hydrograph Summary, 100 years
			Unit Hydrograph Summary, 2 years
			Unit Hydrograph Summary, 10 years
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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)
EDA-1 Perv	2 year	2	2,000	24.000	0.00
EDA-1 Perv	10 year	10	67,000	12.500	0.00
EDA-1 Perv	100 year	100	407,000	12.100	0.10
EDA-1 Imp	2 year	2	369,000	12.100	0.14
EDA-1 Imp	10 year	10	621,000	12.100	0.23
EDA-1 Imp	100 year	100	1,149,000	12.100	0.41
EDA-3 Perv	2 year	2	761,000	12.150	0.18
EDA-3 Perv	10 year	10	1,508,000	12.150	0.36
EDA-3 Perv	100 year	100	3,213,000	12.150	0.76
EDA-2 Perv	2 year	2	30,022,000	12.400	3.63
EDA-2 Perv	10 year	10	68,548,000	12.350	9.22
EDA-2 Perv	100 year	100	164,009,000	12.350	22.97
EDA-4 Perv	2 year	2	1,413,000	12.150	0.33
EDA-4 Perv	10 year	10	2,801,000	12.150	0.68
EDA-4 Perv	100 year	100	5,967,000	12.150	1.42
EDA-5 Perv	2 year	2	6,719,000	12.150	1.47
EDA-5 Perv	10 year	10	14,817,000	12.150	3.50
EDA-5 Perv	100 year	100	34,478,000	12.150	8.27
EDA-6 Perv	2 year	2	12,035,000	12.250	1.85
EDA-6 Perv	10 year	10	28,526,000	12.250	5.01
EDA-6 Perv	100 year	100	70,282,000	12.250	12.86
EDA-7 Perv	2 year	2	3,108,000	12.250	0.53
EDA-7 Perv	10 year	10	7,228,000	12.200	1.39
EDA-7 Perv	100 year	100	17,547,000	12.200	3.50
EDA-8 Perv	2 year	2	802,000	12.200	0.14
EDA-8 Perv	10 year	10	1,902,000	12.200	0.38
EDA-8 Perv	100 year	100	4,686,000	12.200	0.96
EDA-2 Imp	2 year	2	7,468,000	12.100	2.80
EDA-2 Imp	10 year	10	12,411,000	12.100	4.49
EDA-2 Imp	100 year	100	22,750,000	12.100	7.90
EDA-9 Perv	2 year	2	10,439,000	12.200	1.95
EDA-9 Perv	10 year	10	24,276,000	12.200	5.04
EDA-9 Perv	100 year	100	58,928,000	12.200	12.60

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
POI 2	2 year	2	0.000	0.000	0.00
POI 2	10 year	10	0.000	0.000	0.00
POI 2	100 year	100	0.000	0.000	0.00
POI 3	2 year	2	6,719,000	12.200	1.46

Pre-Developed Current Rainfall

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
POI 3	10 year	10	14,817,000	12.200	3.44
POI 3	100 year	100	34,478,000	12.200	8.07
POI 4	2 year	2	3,911,000	12.250	0.67
POI 4	10 year	10	21,722,000	12.200	1.76
POI 4	100 year	100	76,578,000	12.400	13.81
POI-5	2 year	2	10,439,000	12.200	2
POI-5	10 year	10	24,276,000	12.200	5.04
POI-5	100 year	100	58,928,000	12.200	12.60

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)
Pond 1 (IN)	2 year	2	372,000	12.100	0.14	(N/A)	(N/A)
Pond 1 (OUT)	2 year	2	12,000	0.000	0.13	118.63	6,736,000
Pond 1 (Reverse)	2 year	2	-1,000	11.950	-0.01	(N/A)	(N/A)
Pond 1 (IN)	10 year	10	688,000	12.100	0.23	(N/A)	(N/A)
Pond 1 (OUT)	10 year	10	12,000	0.000	0.13	118.66	7,055,000
Pond 1 (Reverse)	10 year	10	-3,000	11.350	-0.02	(N/A)	(N/A)
Pond 1 (IN)	100 year	100	1,557,000	12.100	0.51	(N/A)	(N/A)
Pond 1 (OUT)	100 year	100	12,000	0.000	0.13	118.74	7,925,000
Pond 1 (Reverse)	100 year	100	-5,000	9.450	-0.02	(N/A)	(N/A)
Pond 2 (IN)	2 year	2	39,677,000	12.100	4.73	(N/A)	(N/A)
Pond 2 (OUT)	2 year	2	0.000	0.000	0.00	118.84	40,226,000
Pond 2 (IN)	10 year	10	85,279,000	12.300	10.94	(N/A)	(N/A)
Pond 2 (OUT)	10 year	10	0.000	0.000	0.00	119.08	85,829,000
Pond 2 (IN)	100 year	100	195,947,000	12.300	26.30	(N/A)	(N/A)
Pond 2 (OUT)	100 year	100	0.000	0.000	0.00	119.37	196,497,000
Pond 5 (IN)	2 year	2	6,719,000	12.150	1.47	(N/A)	(N/A)
Pond 5 (OUT)	2 year	2	6,719,000	12.200	1.46	121.83	9,000
Pond 5 (IN)	10 year	10	14,817,000	12.150	3.50	(N/A)	(N/A)

Pre-Developed Current Rainfall

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)
Pond 5 (OUT)	10 year	10	14,817,000	12.200	3.44	121.88	113,000
Pond 5 (IN)	100 year	100	34,478,000	12.150	8.27	(N/A)	(N/A)
Pond 5 (OUT)	100 year	100	34,478,000	12.200	8.07	121.92	369,000
Pond 6 (IN)	2 year	2	12,035,000	12.250	1.85	(N/A)	(N/A)
Pond 6 (OUT)	2 year	2	0,000	0,000	0,00	120.36	12,034,000
Pond 6 (IN)	10 year	10	28,526,000	12.250	5.01	(N/A)	(N/A)
Pond 6 (OUT)	10 year	10	12,592,000	13.800	0.78	120.53	16,756,000
Pond 6 (IN)	100 year	100	70,282,000	12.250	12.86	(N/A)	(N/A)
Pond 6 (OUT)	100 year	100	54,346,000	12.450	10.48	120.66	20,544,000

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations

Label: EDA-1 Imp

Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.011
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	1.04 ft/s
Segment Time of Concentration	0.005 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.020 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-1 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

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

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-1 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.08 ft/s
Segment Time of Concentration	0.067 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.067 hours
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Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-1 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R**(2/3)) * (S**(0.5))) / n$$
$$(Lf / V) / 3600$$

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
S= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre-Developed Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	1.00 ft/s
Segment Time of Concentration	0.028 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.028 hours

Pre-Developed Current Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3)) * (S^{.48} * 0.5)) / n$$
$$(Lf / V) / 3600$$

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

Pre-Developed Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.243 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,009.00 ft
Is Paved?	False
Slope	0.009 ft/ft
Average Velocity	1.52 ft/s
Segment Time of Concentration	0.184 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.427 hours

Pre-Developed Current Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc = $R = Qa / Wp$
 $V = (1.49 * (R^{.48} * (2/3))) * (S^{.04} * 0.5)) / n$
 $(Lf / V) / 3600$
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:
 $V = 16.1345 * (S^{.04} * 0.5)$
Paved Surface:
 $V = 20.3282 * (S^{.04} * 0.5)$
 $(Lf / V) / 3600$
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-3 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.012 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.30 ft/s
Segment Time of Concentration	0.092 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	333.00 ft
Is Paved?	False
Slope	0.009 ft/ft
Average Velocity	1.49 ft/s
Segment Time of Concentration	0.062 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.154 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-3 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3))) * (S^{.48} * 0.5)) / n$$
$$(Lf / V) / 3600$$

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 =
$$V = 16.1345 * (S^{.48} * 0.5)$$
$$V = 20.3282 * (S^{.48} * 0.5)$$
$$(Lf / V) / 3600$$

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-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.006 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.23 ft/s
Segment Time of Concentration	0.121 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	222.00 ft
Is Paved?	False
Slope	0.018 ft/ft
Average Velocity	2.16 ft/s
Segment Time of Concentration	0.028 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.150 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3))) * (S^{.48} * 0.5)) / n$$
$$(Lf / V) / 3600$$

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 =
$$V = 16.1345 * (S^{.48} * 0.5)$$
$$V = 20.3282 * (S^{.48} * 0.5)$$
$$(Lf / V) / 3600$$

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-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.007 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.114 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	285.00 ft
Is Paved?	False
Slope	0.017 ft/ft
Average Velocity	2.09 ft/s
Segment Time of Concentration	0.038 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.152 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3))) * (S^{.48} * 0.5)) / n$$
$$(Lf / V) / 3600$$

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 =
$$V = 16.1345 * (S^{.48} * 0.5)$$
$$V = 20.3282 * (S^{.48} * 0.5)$$
$$(Lf / V) / 3600$$

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-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.003 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.16 ft/s
Segment Time of Concentration	0.172 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	591.00 ft
Is Paved?	False
Slope	0.014 ft/ft
Average Velocity	1.88 ft/s
Segment Time of Concentration	0.087 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.260 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3))) * (S^{.58} * 0.5)) / n$$

$$(Lf / V) / 3600$$

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 =
$$V = 16.1345 * (S^{.58} * 0.5)$$

Paved Surface:
$$V = 20.3282 * (S^{.58} * 0.5)$$

Where:
$$(Lf / V) / 3600$$

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-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.28 ft/s
Segment Time of Concentration	0.099 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	204.00 ft
Is Paved?	False
Slope	0.013 ft/ft
Average Velocity	1.84 ft/s
Segment Time of Concentration	0.031 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	396.00 ft
Is Paved?	False
Slope	0.006 ft/ft
Average Velocity	1.20 ft/s
Segment Time of Concentration	0.092 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.222 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3))) * (S^{.48} * 0.5)) / n$$

$$(Lf / V) / 3600$$

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 =
$$V = 16.1345 * (S^{.48} * 0.5)$$

Paved Surface:
$$V = 20.3282 * (S^{.48} * 0.5)$$

Where:
$$(Lf / V) / 3600$$

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-8 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.009 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.27 ft/s
Segment Time of Concentration	0.103 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	193.00 ft
Is Paved?	False
Slope	0.032 ft/ft
Average Velocity	2.89 ft/s
Segment Time of Concentration	0.019 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	360.00 ft
Is Paved?	False
Slope	0.005 ft/ft
Average Velocity	1.14 ft/s
Segment Time of Concentration	0.088 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.209 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-8 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3))) * (S^{.48} * 0.5)) / n$$
$$(Lf / V) / 3600$$

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 =
$$V = 16.1345 * (S^{.48} * 0.5)$$
$$V = 20.3282 * (S^{.48} * 0.5)$$
$$(Lf / V) / 3600$$

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-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.004 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.19 ft/s
Segment Time of Concentration	0.143 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	330.00 ft
Is Paved?	False
Slope	0.013 ft/ft
Average Velocity	1.84 ft/s
Segment Time of Concentration	0.050 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.193 hours

Pre-Developed Current Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (L.49 * (R**(2/3))) * (Sf**0.5)) / n$$
$$(Lf / V) / 3600$$

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 =
$$V = 16.1345 * (Sf**0.5)$$
$$V = 20.3282 * (Sf**0.5)$$
$$(Lf / V) / 3600$$

Where:

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

Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-1 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39,000	0.070	0.0	0.0	39,000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.070	(N/A)	(N/A)	39,000

Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-2 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Building	98.000	0.100	0.0	0.0	98.000
Impervious Areas - Gravel (w/ right-of-way) - Soil D	91.000	0.680	0.0	0.0	91.000
COMPOSITE AREA & WEIGHTED CN ---->	(N/A)	0.780	(N/A)	(N/A)	91.897

Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-2 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops A soil	67.000	4.990	0.0	0.0	67.000
Row crops B soil	78.000	2.920	0.0	0.0	78.000
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.500	0.0	0.0	39.000
Small grain - Straight row (SR), good - Soil A	63.000	0.260	0.0	0.0	63.000
COMPOSITE AREA & WEIGHTED CN ---->	(N/A)	8.670	(N/A)	(N/A)	68.970

Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-3 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops - Straight row (SR), good - Soil B	78.000	0.140	0.0	0.0	78.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.140	(N/A)	(N/A)	78.000

Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops B soil	78.000	0.260	0.0	0.0	78.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.260	(N/A)	(N/A)	78.000

Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row Crops A soil	67.000	1.100	0.0	0.0	67.000
Row Crops B soil	78.000	0.640	0.0	0.0	78.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.740	(N/A)	(N/A)	71.046

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2/26/2025

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Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops - Straight row (SR), good - Soil A	67.000	3.900	0.0	0.0	67.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.900	(N/A)	(N/A)	67.000

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2/26/2025

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Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row Crops A soil	67.000	0.850	0.0	0.0	67.000
Row Crops B soil	78.000	0.100	0.0	0.0	78.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.950	(N/A)	(N/A)	68.158

Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-8 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops - Straight row (SR), good - Soil A	67.000	0.260	0.0	0.0	67.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.260	(N/A)	(N/A)	67.000

Pre-Developed Current Rainfall

Subsection: Runoff CN-Area
Label: EDA-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row Crops A soil	67.000	2.770	0.0	0.0	67.000
Row Crops B soil	78.000	0.420	0.0	0.0	78.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.190	(N/A)	(N/A)	68.448

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26.000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.040 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 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)	0.14 ft³/s

Drainage Area	
SCS CN (Composite)	91.000
Area (User Defined)	0.040 acres
Maximum Retention (Pervious)	1.0 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	368.970 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	369.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 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-1 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.32 ft ³ /s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.040 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.23 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.23 ft ³ /s

Drainage Area	
SCS CN (Composite)	91.000
Area (User Defined)	0.040 acres
Maximum Retention (Pervious)	1.0 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.3 in
Runoff Volume (Pervious)	620.550 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	621.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 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-1 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.32 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.040 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.41 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.41 ft³/s

Drainage Area	
SCS CN (Composite)	91.000
Area (User Defined)	0.040 acres
Maximum Retention (Pervious)	1.0 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.9 in
Runoff Volume (Pervious)	1,148,980 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,149,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 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-1 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.32 ft ³ /s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Pre-Developed Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.067 hours
Area (User Defined)	0.070 acres

Computational Time Increment	0.009 hours
Time to Peak (Computed)	24,002 hours
Flow (Peak, Computed)	0.00 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24,000 hours
Flow (Peak Interpolated Output)	0.00 ft ³ /s

Drainage Area	
SCS CN (Composite)	39,000
Area (User Defined)	0.070 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	2,191 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.067 hours
Computational Time Increment	0.009 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-1 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.69 ft ³ /s
Unit peak time, Tp	0.045 hours
Unit receding limb, Tr	0.393 hours
Total unit time, Tb	0.438 hours

Pre-Developed Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.067 hours
Area (User Defined)	0.070 acres

Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.519 hours
Flow (Peak, Computed)	0.00 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.500 hours
Flow (Peak Interpolated Output)	0.00 ft ³ /s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.070 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	67.284 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	67,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.067 hours
Computational Time Increment	0.009 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-1 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.69 ft ³ /s
Unit peak time, Tp	0.045 hours
Unit receding limb, Tr	0.393 hours
Total unit time, Tb	0.438 hours

Pre-Developed Current Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.067 hours
Area (User Defined)	0.070 acres

Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.126 hours
Flow (Peak, Computed)	0.11 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.10 ft ³ /s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.070 acres
Maximum Retention (Previous)	15.6 in
Maximum Retention (Previous, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	1.6 in
Runoff Volume (Previous)	407.239 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	407.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.067 hours
Computational Time Increment	0.009 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-1 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.69 ft ³ /s
Unit peak time, Tp	0.045 hours
Unit receding limb, Tr	0.393 hours
Total unit time, Tb	0.438 hours

Pre-Developed Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.028 hours
Area (User Defined)	0.780 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	2.80 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.80 ft ³ /s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	0.780 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.6 in
Runoff Volume (Pervious)	7,465.664 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	7,468.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.028 hours
Computational Time Increment	0.004 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: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.51 ft ³ /s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.163 hours
Total unit time, Tb	0.182 hours

Pre-Developed Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.028 hours
Area (User Defined)	0.780 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	4.49 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.49 ft ³ /s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	0.780 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.4 in
Runoff Volume (Pervious)	12,408.989 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,411.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.028 hours
Computational Time Increment	0.004 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: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.51 ft ³ /s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.163 hours
Total unit time, Tb	0.182 hours

Pre-Developed Current Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.028 hours
Area (User Defined)	0.780 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	7.91 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.90 ft ³ /s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	0.780 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.0 in
Runoff Volume (Pervious)	22,748,906 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	22,750,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.028 hours
Computational Time Increment	0.004 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: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	18.51 ft ³ /s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.163 hours
Total unit time, Tb	0.182 hours

Pre-Developed Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.427 hours
Area (User Defined)	8,670 acres

Computational Time Increment	0.057 hours
Time to Peak (Computed)	12.406 hours
Flow (Peak, Computed)	3.63 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.400 hours
Flow (Peak Interpolated Output)	3.63 ft ³ /s

Drainage Area	
SCS CN (Composite)	69,000
Area (User Defined)	8,670 acres
Maximum Retention (Pervious)	4.5 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	30,022.914 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	30,022,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.427 hours
Computational Time Increment	0.057 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: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.43 ft ³ /s
Unit peak time, Tp	0.285 hours
Unit receding limb, Tr	2.504 hours
Total unit time, Tb	2.789 hours

Pre-Developed Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.427 hours
Area (User Defined)	8,670 acres

Computational Time Increment	0.057 hours
Time to Peak (Computed)	12.350 hours
Flow (Peak, Computed)	9.22 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	9.22 ft ³ /s

Drainage Area	
SCS CN (Composite)	69,000
Area (User Defined)	8,670 acres
Maximum Retention (Pervious)	4.5 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.2 in
Runoff Volume (Pervious)	68,550.416 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	68,548,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.427 hours
Computational Time Increment	0.057 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: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.43 ft ³ /s
Unit peak time, Tp	0.285 hours
Unit receding limb, Tr	2.504 hours
Total unit time, Tb	2.789 hours

Pre-Developed Current Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.427 hours
Area (User Defined)	8,670 acres

Computational Time Increment	0.057 hours
Time to Peak (Computed)	12.350 hours
Flow (Peak, Computed)	22.97 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	22.97 ft ³ /s

Drainage Area	
SCS CN (Composite)	69,000
Area (User Defined)	8,670 acres
Maximum Retention (Pervious)	4.5 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.2 in
Runoff Volume (Pervious)	164,013,830 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	164,009,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.427 hours
Computational Time Increment	0.057 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: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.43 ft ³ /s
Unit peak time, Tp	0.285 hours
Unit receding limb, Tr	2.504 hours
Total unit time, Tb	2.789 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.154 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.172 hours
Flow (Peak, Computed)	0.18 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.18 ft ³ /s

Drainage Area	
SCS CN (Composite)	78,000
Area (User Defined)	0.140 acres
Maximum Retention (Previous)	2.8 in
Maximum Retention (Previous, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	1.5 in
Runoff Volume (Previous)	760.965 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	761,000 ft ³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.154 hours
Computational Time Increment	0.021 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-3 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.60 ft ³ /s
Unit peak time, Tp	0.103 hours
Unit receding limb, Tr	0.905 hours
Total unit time, Tb	1.008 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.154 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	0.36 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.36 ft ³ /s

Drainage Area	
SCS CN (Composite)	78,000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.0 in
Runoff Volume (Pervious)	1,508.425 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,508,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.154 hours
Computational Time Increment	0.021 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-3 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.60 ft ³ /s
Unit peak time, Tp	0.103 hours
Unit receding limb, Tr	0.905 hours
Total unit time, Tb	1.008 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.154 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	0.76 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.76 ft ³ /s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.3 in
Runoff Volume (Pervious)	3,212.901 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,213.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.154 hours
Computational Time Increment	0.021 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-3 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.60 ft ³ /s
Unit peak time, Tp	0.103 hours
Unit receding limb, Tr	0.905 hours
Total unit time, Tb	1.008 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.150 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.153 hours
Flow (Peak, Computed)	0.34 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.33 ft ³ /s

Drainage Area	
SCS CN (Composite)	78,000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.5 in
Runoff Volume (Pervious)	1,413.220 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,413,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.150 hours
Computational Time Increment	0.020 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-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.15 ft ³ /s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.880 hours
Total unit time, Tb	0.979 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.150 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.153 hours
Flow (Peak, Computed)	0.68 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.68 ft ³ /s

Drainage Area	
SCS CN (Composite)	78,000
Area (User Defined)	0.260 acres
Maximum Retention (Previous)	2.8 in
Maximum Retention (Previous, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	3.0 in
Runoff Volume (Previous)	2,801.361 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,801,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.150 hours
Computational Time Increment	0.020 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-4 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.15 ft³/s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.880 hours
Total unit time, Tb	0.979 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.150 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.153 hours
Flow (Peak, Computed)	1.43 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.42 ft³/s

Drainage Area	
SCS CN (Composite)	78,000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.3 in
Runoff Volume (Pervious)	5,966.816 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,967,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.150 hours
Computational Time Increment	0.020 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-4 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.15 ft ³ /s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.880 hours
Total unit time, Tb	0.979 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.152 hours
Area (User Defined)	1.740 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.162 hours
Flow (Peak, Computed)	1.50 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.47 ft ³ /s

Drainage Area	
SCS CN (Composite)	71.000
Area (User Defined)	1.740 acres
Maximum Retention (Pervious)	4.1 in
Maximum Retention (Pervious, 20 percent)	0.8 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	6,718.837 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,719,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.152 hours
Computational Time Increment	0.020 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-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.57 ft ³ /s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.892 hours
Total unit time, Tb	0.993 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.152 hours
Area (User Defined)	1.740 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.162 hours
Flow (Peak, Computed)	3.53 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.50 ft ³ /s

Drainage Area	
SCS CN (Composite)	71.000
Area (User Defined)	1.740 acres
Maximum Retention (Pervious)	4.1 in
Maximum Retention (Pervious, 20 percent)	0.8 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.3 in
Runoff Volume (Pervious)	14,816.751 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	14,817.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.152 hours
Computational Time Increment	0.020 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-5 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.57 ft ³ /s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.892 hours
Total unit time, Tb	0.993 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.152 hours
Area (User Defined)	1.740 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.162 hours
Flow (Peak, Computed)	8.32 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	8.27 ft ³ /s

Drainage Area	
SCS CN (Composite)	71.000
Area (User Defined)	1.740 acres
Maximum Retention (Pervious)	4.1 in
Maximum Retention (Pervious, 20 percent)	0.8 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.5 in
Runoff Volume (Pervious)	34,477.172 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	34,478,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.152 hours
Computational Time Increment	0.020 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-5 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.57 ft ³ /s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.892 hours
Total unit time, Tb	0.993 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.260 hours
Area (User Defined)	3,900 acres

Computational Time Increment	0.035 hours
Time to Peak (Computed)	12.253 hours
Flow (Peak, Computed)	1.86 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	1.85 ft ³ /s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	3,900 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.9 in
Runoff Volume (Pervious)	12,034,584 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,035,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.260 hours
Computational Time Increment	0.035 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-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	9.93 ft ³ /s
Unit peak time, Tp	0.173 hours
Unit receding limb, Tr	1.523 hours
Total unit time, Tb	1.696 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.260 hours
Area (User Defined)	3,900 acres

Computational Time Increment	0.035 hours
Time to Peak (Computed)	12.253 hours
Flow (Peak, Computed)	5.02 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	5.01 ft ³ /s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	3,900 acres
Maximum Retention (Previous)	4.9 in
Maximum Retention (Previous, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	2.0 in
Runoff Volume (Previous)	28,525,404 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	28,526,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.260 hours
Computational Time Increment	0.035 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-6 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	9.93 ft ³ /s
Unit peak time, Tp	0.173 hours
Unit receding limb, Tr	1.523 hours
Total unit time, Tb	1.696 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.260 hours
Area (User Defined)	3,900 acres

Computational Time Increment	0.035 hours
Time to Peak (Computed)	12.218 hours
Flow (Peak, Computed)	12.92 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	12.86 ft ³ /s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	3,900 acres
Maximum Retention (Previous)	4.9 in
Maximum Retention (Previous, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	5.0 in
Runoff Volume (Previous)	70,279.053 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	70,282,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.260 hours
Computational Time Increment	0.035 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-6 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	9.93 ft ³ /s
Unit peak time, Tp	0.173 hours
Unit receding limb, Tr	1.523 hours
Total unit time, Tb	1.696 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.222 hours
Area (User Defined)	0.950 acres

Computational Time Increment	0.030 hours
Time to Peak (Computed)	12.239 hours
Flow (Peak, Computed)	0.54 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.53 ft ³ /s

Drainage Area	
SCS CN (Composite)	68,000
Area (User Defined)	0.950 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.9 in
Runoff Volume (Pervious)	3,108.084 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,108,000 ft ³

SCS Unit Hydrograph Parameters

Time of Concentration (Composite)	0.222 hours
Computational Time Increment	0.030 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-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.83 ft ³ /s
Unit peak time, Tp	0.148 hours
Unit receding limb, Tr	1.301 hours
Total unit time, Tb	1.449 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.222 hours
Area (User Defined)	0.950 acres

Computational Time Increment	0.030 hours
Time to Peak (Computed)	12.209 hours
Flow (Peak, Computed)	1.40 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	1.39 ft ³ /s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	0.950 acres
Maximum Retention (Previous)	4.7 in
Maximum Retention (Previous, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	2.1 in
Runoff Volume (Previous)	7,227.949 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	7,228,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.222 hours
Computational Time Increment	0.030 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-7 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.83 ft ³ /s
Unit peak time, Tp	0.148 hours
Unit receding limb, Tr	1.301 hours
Total unit time, Tb	1.449 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.222 hours
Area (User Defined)	0.950 acres

Computational Time Increment	0.030 hours
Time to Peak (Computed)	12.209 hours
Flow (Peak, Computed)	3.51 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	3.50 ft ³ /s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	0.950 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	17,545.377 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	17,547.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.222 hours
Computational Time Increment	0.030 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-7 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.83 ft ³ /s
Unit peak time, Tp	0.148 hours
Unit receding limb, Tr	1.301 hours
Total unit time, Tb	1.449 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26.000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.209 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.233 hours
Flow (Peak, Computed)	0.14 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.14 ft ³ /s

Drainage Area	
SCS CN (Composite)	67.000
Area (User Defined)	0.260 acres
Maximum Retention (Previous)	4.9 in
Maximum Retention (Previous, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	0.9 in
Runoff Volume (Previous)	802.305 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	802.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.209 hours
Computational Time Increment	0.028 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-8 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.82 ft ³ /s
Unit peak time, Tp	0.140 hours
Unit receding limb, Tr	1.229 hours
Total unit time, Tb	1.369 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.209 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.205 hours
Flow (Peak, Computed)	0.38 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.38 ft ³ /s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.0 in
Runoff Volume (Pervious)	1,901.693 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,902,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.209 hours
Computational Time Increment	0.028 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-8 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.82 ft³/s
Unit peak time, Tp	0.140 hours
Unit receding limb, Tr	1.229 hours
Total unit time, Tb	1.369 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.209 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.205 hours
Flow (Peak, Computed)	0.96 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.96 ft³/s

Drainage Area	
SCS CN (Composite)	67.000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.0 in
Runoff Volume (Pervious)	4,685.270 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,686.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.209 hours
Computational Time Increment	0.028 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-8 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.82 ft ³ /s
Unit peak time, Tp	0.140 hours
Unit receding limb, Tr	1.229 hours
Total unit time, Tb	1.369 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.193 hours
Area (User Defined)	3.190 acres

Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.201 hours
Flow (Peak, Computed)	1.95 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	1.95 ft ³ /s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	3.190 acres
Maximum Retention (Previous)	4.7 in
Maximum Retention (Previous, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	0.9 in
Runoff Volume (Previous)	10,436.622 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	10,439,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.193 hours
Computational Time Increment	0.026 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-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.95 ft ³ /s
Unit peak time, Tp	0.128 hours
Unit receding limb, Tr	1.130 hours
Total unit time, Tb	1.259 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.193 hours
Area (User Defined)	3.190 acres

Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.201 hours
Flow (Peak, Computed)	5.04 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	5.04 ft ³ /s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	3.190 acres
Maximum Retention (Previous)	4.7 in
Maximum Retention (Previous, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	2.1 in
Runoff Volume (Previous)	24,270.692 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	24,276.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.193 hours
Computational Time Increment	0.026 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-9 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.95 ft ³ /s
Unit peak time, Tp	0.128 hours
Unit receding limb, Tr	1.130 hours
Total unit time, Tb	1.259 hours

Pre-Developed Current Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.193 hours
Area (User Defined)	3.190 acres

Computational Time Increment	0.026 hours
Time to Peak (Computed)	12.175 hours
Flow (Peak, Computed)	12.66 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	12.60 ft ³ /s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	3.190 acres
Maximum Retention (Previous)	4.7 in
Maximum Retention (Previous, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	5.1 in
Runoff Volume (Previous)	58,915.519 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	58,928.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.193 hours
Computational Time Increment	0.026 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-9 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.95 ft ³ /s
Unit peak time, Tp	0.128 hours
Unit receding limb, Tr	1.130 hours
Total unit time, Tb	1.259 hours

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI 2
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Summary for Hydrograph Addition at 'POI 2'

Upstream Link	Upstream Node
Outlet-2	Pond 2

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-2	0.000	0.000	0.00
Flow (In)	POI 2	0.000	0.000	0.00

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI 2
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Summary for Hydrograph Addition at 'POI 2'

Upstream Link		Upstream Node	
Outlet-2		Pond 2	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-2	0.000	0.000	0.00
Flow (In)	POI 2	0.000	0.000	0.00

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI 2
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Summary for Hydrograph Addition at 'POI 2'

Upstream Link		Upstream Node	
Outlet-2		Pond 2	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-2	0.000	0.000	0.00
Flow (In)	POI 2	0.000	0.000	0.00

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI 3
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Summary for Hydrograph Addition at 'POI 3'

Upstream Link		Upstream Node	
Outlet-5		Pond 5	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-5	6,718.782	12.200	1.46
Flow (In)	POI 3	6,718.782	12.200	1.46

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI 3
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Summary for Hydrograph Addition at 'POI 3'

Upstream Link		Upstream Node	
Outlet-5		Pond 5	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-5	14,816.811	12.200	3.44
Flow (In)	POI 3	14,816.811	12.200	3.44

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI 3
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Summary for Hydrograph Addition at 'POI 3'

Upstream Link		Upstream Node
Outlet-5		Pond 5

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	Outlet-5	34,477.616	12.200	8.07
Flow (In)	POI 3	34,477.616	12.200	8.07

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI 4
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Summary for Hydrograph Addition at 'POI 4'

Upstream Link		Upstream Node
<Catchment to Outflow Node> Outlet-6		EDA-7 Perv Pond 6
<Catchment to Outflow Node>		EDA-8 Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-7 Perv	7,228.439	12.200	1.39
Flow (From)	Outlet-6	12,591.875	13.800	0.78
Flow (From)	EDA-8 Perv	1,901.945	12.200	0.38
Flow (In)	POI 4	21,722.259	12.200	1.76

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI 4
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Summary for Hydrograph Addition at 'POI 4'

Upstream Link		Upstream Node
<Catchment to Outflow Node>		EDA-7 Perv
Outlet-6		Pond 6
<Catchment to Outflow Node>		EDA-8 Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-7 Perv	17,546,608	12.200	3.50
Flow (From)	Outlet-6	54,345,739	12.450	10.48
Flow (From)	EDA-8 Perv	4,685,889	12.200	0.96
Flow (In)	POI 4	76,578,236	12.400	13.81

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI-5
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Summary for Hydrograph Addition at 'POI-5'

Upstream Link		Upstream Node
<Catchment to Outflow Node>		EDA-9 Perv

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-9 Perv	10,438,594	12.200	1.95
Flow (In)	POI-5	10,438,594	12.200	1.95

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI-5
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Summary for Hydrograph Addition at 'POI-5'

Upstream Link		Upstream Node	
<Catchment to Outflow Node>		EDA-9 Perv	

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-9 Perv	24,275.610	12.200	5.04
Flow (In)	POI-5	24,275.610	12.200	5.04

Pre-Developed Current Rainfall

Subsection: Addition Summary
Label: POI-5
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Summary for Hydrograph Addition at 'POI-5'

Upstream Link		Upstream Node	
<Catchment to Outflow Node>		EDA-9 Perv	

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-9 Perv	58,927.536	12.200	12.60
Flow (In)	POI-5	58,927.536	12.200	12.60

Pre-Developed Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363.000 ft³
Outflow (Starting)	0.13 ft³/s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	

	Time to Peak (hours)	Elevation (ft)	Maximum Storage Volume (ft³)
	24.100	118.63	6,736.000
	Forward Flow Peaks		
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)
Pond Inflow....	12.100	0.14	4.600
Pond Outflow....	0.000	0.13	11.950
			Flow (Peak) (ft³/s)
			0.00
			-0.01

Total Volume In		Total Volume Out	
Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	372.000	Forward	0.000
Pond Outflow...	1.000	Reverse	12.000
Mass Balance (ft³)			
Volume (Initial ICPM)		6,363.000 ft³	
Volume (Total In ICPM)		373.000 ft³	
Volume (Total Out ICPM)		12.000 ft³	
Volume (Ending)		6,736.000 ft³	
Elevation (Ending)		118.63 ft	
Difference		-12.000 ft³	
Percent of Inflow Volume (Interconnected Pond Mass Balance)		3.3 %	

Pre-Developed Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363.000 ft³
Outflow (Starting)	0.13 ft³/s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Volume (ft³)
	24.200	118.66	7,055.000
	Forward Flow Peaks		
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)
Pond Inflow....	12.100	0.23	0.000
Pond Outflow....	0.000	0.13	11.350
			0.00
			-0.02

Total Volume In		Total Volume Out	
Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	688.000	Forward	0.000
Pond Outflow...	3.000	Reverse	12.000
Mass Balance (ft³)			
Volume (Initial ICPM)		6,363.000 ft³	
Volume (Total In ICPM)		691.000 ft³	
Volume (Total Out ICPM)		12.000 ft³	
Volume (Ending)		7,055.000 ft³	
Elevation (Ending)		118.66 ft	
Difference		-13.000 ft³	
Percent of Inflow Volume (Interconnected Pond Mass Balance)		1.9 %	

Pre-Developed Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363,000 ft ³
Outflow (Starting)	0.13 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	hours

Time to Peak	
Peak (hours)	24.300
Maximum Storage	
Elevation (ft)	118.74
Volume (ft ³)	7,925,000

Forward Flow Peaks	
Time to Peak (hours)	Time to Peak (hours)
Flow (Peak) (ft ³ /s)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100
Pond Outflow...	0.000

Total Volume In	
Volume (ft ³)	Volume (ft ³)
Direction	Direction
Forward	Forward
Reverse	Reverse

Pond Inflow....	1,557,000
Pond Outflow...	5,000
Mass Balance (ft ³)	
Volume (Initial ICPM)	6,363,000 ft ³
Volume (Total In ICPM)	1,561,000 ft ³
Volume (Total Out ICPM)	12,000 ft ³
Volume (Ending)	7,925,000 ft ³
Elevation (Ending)	118.74 ft
Difference	-13,000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.8 %

Pre-Developed Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	hours

Time to Peak	
Peak (hours)	25.950
Maximum Storage	
Elevation (ft)	118.84
Volume (ft ³)	40,226,000

Forward Flow Peaks	
Time to Peak (hours)	Time to Peak (hours)
Flow (Peak) (ft ³ /s)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100
Pond Outflow...	0.000

Total Volume In	
Volume (ft ³)	Volume (ft ³)
Direction	Direction
Forward	Forward
Reverse	Reverse

Pond Inflow....	39,677,000
Pond Outflow...	0,000
Mass Balance (ft ³)	
Volume (Initial ICPM)	559,000 ft ³
Volume (Total In ICPM)	39,677,000 ft ³
Volume (Total Out ICPM)	0,000 ft ³
Volume (Ending)	40,227,000 ft ³
Elevation (Ending)	118.84 ft
Difference	9,000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %

Pre-Developed Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 10 year
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	

	Time to Peak (hours)	Elevation (ft)	Maximum Storage Volume (ft³)
	26.000	119.08	85,829.000
	Forward Flow Peaks		
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)
Pond Inflow....	12.300	10.94	0.003
Pond Outflow....	0.000	0.00	0.000
	Reverse Flow Peaks		
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)
	0.000	0.00	0.000
	Total Volume In		
	Volume (ft³)	Direction	Volume (ft³)
Pond Inflow....	85,279.000	Forward	0.000
Pond Outflow....	0.000	Reverse	0.000
Mass Balance (ft³)			
Volume (Initial ICPM)	559,000 ft³		
Volume (Total In ICPM)	85,279.000 ft³		
Volume (Total Out ICPM)	0.000 ft³		
Volume (Ending)	85,829.000 ft³		
Elevation (Ending)	119.08 ft		
Difference	9.000 ft³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %		

Pre-Developed Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	

Time to Peak (hours)		Maximum Storage Elevation (ft)		Volume (ft³)	
26.000		119.37		196,497.00	
0					
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	26.30	0.003	0.00	
Pond Outflow....	0.000	0.00	0.000	0.00	
Total Volume In			Total Volume Out		
Volume (ft³)	Direction	Volume (ft³)	Direction		
Pond Inflow....	195,947.000	Forward	0.000	Reverse	
Pond Outflow....	0.000	Reverse	0.000	Forward	
Mass Balance (ft³)					
Volume (Initial ICPM)		559,000 ft³			
Volume (Total In ICPM)		195,947.000 ft³			
Volume (Total Out ICPM)		0.000 ft³			
Volume (Ending)		196,497.000 ft³			
Elevation (Ending)		119.37 ft			
Difference		9,000 ft³			
Percent of Inflow Volume (Interconnected Pond Mass Balance)		0.0 %			

Pre-Developed Current Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 5
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + 0 (ft³/s)
121.80	0.00	0.000	0.000	0.00	0.00	0.00
121.90	4.33	225.060	0.155	0.00	4.33	6.83
122.00	25.23	1,800.480	0.620	0.00	25.23	45.24
122.10	64.68	4,522.951	0.630	0.00	64.68	114.94

Pre-Developed Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (1N)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	1.47 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	1.46 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.83 ft
Volume (Peak)	8,699 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	6,719,000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	6,719,000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Pre-Developed Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: 10 year
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	3.50 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	3.44 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.88 ft
Volume (Peak)	112.786 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	14,817.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	14,817.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Pre-Developed Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	8.27 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	8.07 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.92 ft
Volume (Peak)	368.920 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	34,478.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	34,478.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Pre-Developed Current Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 6
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
119.80	0.00	0.000	0.000	0.00	0.00	0.00
119.90	0.00	232.320	0.160	0.00	0.00	2.58
120.00	0.00	1,898.560	0.640	0.00	0.00	20.65
120.10	0.00	4,651.807	0.642	0.00	0.00	51.69
120.20	0.00	7,455.880	0.645	0.00	0.00	82.84
120.30	0.00	10,270.802	0.647	0.00	0.00	114.12
120.40	0.00	13,096.593	0.650	0.00	0.00	145.52
120.50	0.00	15,933.274	0.652	0.00	0.00	177.04
120.60	2.71	18,780.866	0.655	0.00	2.71	211.38
120.70	15.31	21,638.390	0.657	0.00	15.31	255.74
120.80	42.18	24,508.866	0.660	0.00	42.18	314.50

Pre-Developed Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In) Flow (Peak Outlet)	1.85 ft ³ /s 0.00 ft ³ /s	Time to Peak (Flow, In) Time to Peak (Flow, Outlet)	12.250 hours 0.000 hours
Elevation (Water Surface, Peak)			
	120.36 ft		
Volume (Peak)			
	12,033.683 ft ³		
Mass Balance (ft ³)			
Volume (Initial)	0.000 ft ³		
Volume (Total Inflow)	12,035.000 ft ³		
Volume (Total Infiltration)	0.000 ft ³		
Volume (Total Outlet Outflow)	0.000 ft ³		
Volume (Retained)	12,034.000 ft ³		
Volume (Unrouted)	-1.000 ft ³		
Error (Mass Balance)	0.0 %		

Pre-Developed Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	5.01 ft³/s	Time to Peak (Flow, In)	12.250 hours
Flow (Peak Outlet)	0.78 ft³/s	Time to Peak (Flow, Outlet)	13.800 hours

Elevation (Water Surface, Peak)	120.53 ft
Volume (Peak)	16,755.596 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	28,526.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	12,592.000 ft³
Volume (Retained)	15,935.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Pre-Developed Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

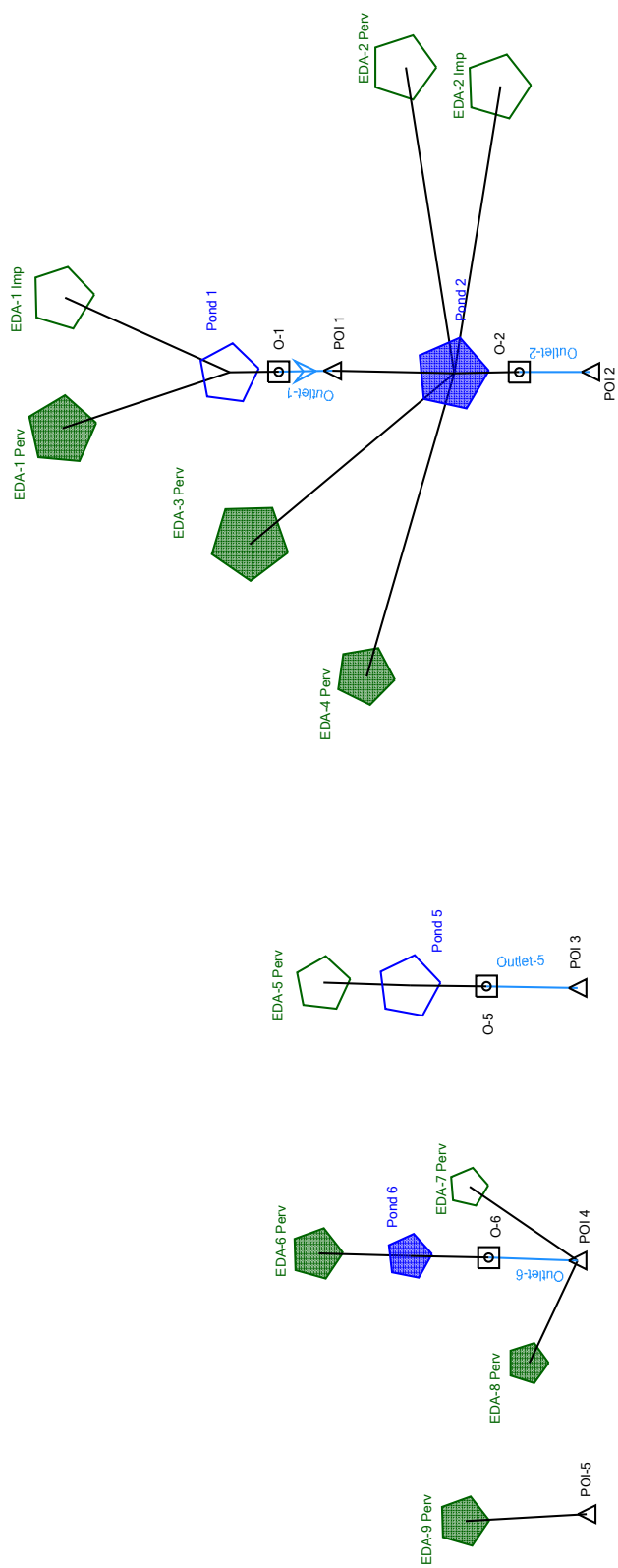
Inflow/Outflow Hydrograph Summary

Flow (Peak In)	12.86 ft³/s	Time to Peak (Flow, In)	12.250 hours
Flow (Peak Outlet)	10.48 ft³/s	Time to Peak (Flow, Outlet)	12.450 hours

Elevation (Water Surface, Peak)	120.66 ft
Volume (Peak)	20,543.814 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	70,282.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	54,346.000 ft³
Volume (Retained)	15,936.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Scenario: 2 year



PRE-DEVELOPED PROJECTED RAINFALL

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Pre-Dev Projected Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
EDA-1 Perv	2yr projected	2	9,000	24.000	0.00
EDA-1 Perv	10yr projected	10	129,000	12.200	0.01
EDA-1 Perv	100yr projected	100	823,000	12.100	0.25
EDA-1 Imp	2yr projected	2	426,000	12.100	0.16
EDA-1 Imp	10yr projected	10	750,000	12.100	0.28
EDA-1 Imp	100yr projected	100	1,589,000	12.100	0.55
EDA-3 Perv	2yr projected	2	923,000	12.150	0.22
EDA-3 Perv	10yr projected	10	1,913,000	12.150	0.46
EDA-3 Perv	100yr projected	100	4,686,000	12.150	1.10
EDA-2 Perv	2yr projected	2	38,036,000	12.400	4.85
EDA-2 Perv	10yr projected	10	90,568,000	12.350	12.59
EDA-2 Perv	100yr projected	100	250,196,000	12.350	35.47
EDA-4 Perv	2yr projected	2	1,714,000	12.150	0.42
EDA-4 Perv	10yr projected	10	3,554,000	12.150	0.88
EDA-4 Perv	100yr projected	100	8,704,000	12.150	2.09
EDA-5 Perv	2yr projected	2	8,419,000	12.150	1.95
EDA-5 Perv	10yr projected	10	19,384,000	12.150	4.72
EDA-5 Perv	100yr projected	100	52,031,000	12.150	12.63
EDA-6 Perv	2yr projected	2	15,428,000	12.250	2.55
EDA-6 Perv	10yr projected	10	38,076,000	12.250	6.93
EDA-6 Perv	100yr projected	100	108,395,000	12.200	20.16
EDA-7 Perv	2yr projected	2	3,960,000	12.200	0.72
EDA-7 Perv	10yr projected	10	9,598,000	12.200	1.90
EDA-7 Perv	100yr projected	100	26,910,000	12.200	5.43
EDA-8 Perv	2yr projected	2	1,028,000	12.200	0.19
EDA-8 Perv	10yr projected	10	2,538,000	12.200	0.52
EDA-8 Perv	100yr projected	100	7,226,000	12.200	1.50
EDA-2 Imp	2yr projected	2	8,584,000	12.100	3.20
EDA-2 Imp	10yr projected	10	14,941,000	12.100	5.36
EDA-2 Imp	100yr projected	100	31,334,000	12.100	10.74
EDA-9 Perv	2yr projected	2	13,298,000	12.200	2.64
EDA-9 Perv	10yr projected	10	32,225,000	12.200	6.90
EDA-9 Perv	100yr projected	100	90,354,000	12.200	19.47

Pre-Dev Projected Rainfall

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
POI 3	10yr projected	10	19,384,000	12.200	4.60
POI 3	100yr projected	100	52,031,000	12.200	12.22
POI 4	2yr projected	2	4,989,000	12.200	0.91
POI 4	10yr projected	10	34,277,000	13.000	2.86
POI 4	100yr projected	100	126,594,000	12.250	26.54
POI-5	2yr projected	2	13,298,000	12.200	2.64
POI-5	10yr projected	10	32,225,000	12.200	6.90
POI-5	100yr projected	100	90,354,000	12.200	19.47

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)
Pond 1 (IN)	2yr projected	2	436,000	12.100	0.16	(N/A)	(N/A)
Pond 1 (OUT)	2yr projected	2	12,000	0.000	0.13	118.64	6,801,000
Pond 1 (Reverse)	2yr projected	2	-1,000	11.850	-0.02	(N/A)	(N/A)
Pond 1 (IN)	10yr projected	10	879,000	12.100	0.28	(N/A)	(N/A)
Pond 1 (OUT)	10yr projected	10	12,000	0.000	0.13	118.68	7,247,000
Pond 1 (Reverse)	10yr projected	10	-2,000	10.950	-0.01	(N/A)	(N/A)
Pond 1 (IN)	100yr projected	100	2,412,000	12.100	0.81	(N/A)	(N/A)
Pond 1 (OUT)	100yr projected	100	12,000	0.000	0.13	118.82	8,781,000
Pond 1 (Reverse)	100yr projected	100	-5,000	8.000	-0.02	(N/A)	(N/A)
Pond 2 (IN)	2yr projected	2	49,269,000	12.300	6.03	(N/A)	(N/A)
Pond 2 (OUT)	2yr projected	2	0,000	0.000	0.00	118.89	49,817,000
Pond 2 (IN)	10yr projected	10	110,989,000	12.300	14.80	(N/A)	(N/A)
Pond 2 (OUT)	10yr projected	10	0,000	0.000	0.00	119.18	111,536,000
Pond 2 (IN)	100yr projected	100	294,929,000	12.300	40.46	(N/A)	(N/A)
Pond 2 (OUT)	100yr projected	100	0,000	0.000	0.00	119.58	295,476,000
Pond 5 (IN)	2yr projected	2	8,419,000	12.150	1.95	(N/A)	(N/A)
Pond 5 (OUT)	2yr projected	2	8,419,000	12.200	1.91	121.84	19,000

Pre-Dev Projected Rainfall

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)
Pond 5 (IW)	10yr projected	10	19,384,000	12.150	4.72	(N/A)	(N/A)
Pond 5 (OUT)	10yr projected	10	19,384,000	12.200	4.60	121.90	234,000
Pond 5 (IW)	100yr projected	100	52,031,000	12.150	12.63	(N/A)	(N/A)
Pond 5 (OUT)	100yr projected	100	52,031,000	12.200	12.22	121.94	588,000
Pond 6 (IW)	2yr projected	2	15,428,000	12.250	2.55	(N/A)	(N/A)
Pond 6 (OUT)	2yr projected	2	0,000	0,000	0,00	120.48	15,427,000
Pond 6 (IW)	10yr projected	10	38,076,000	12.250	6.93	(N/A)	(N/A)
Pond 6 (OUT)	10yr projected	10	22,141,000	13.100	2.20	120.58	18,248,000
Pond 6 (IW)	100yr projected	100	108,395,000	12.200	20.16	(N/A)	(N/A)
Pond 6 (OUT)	100yr projected	100	92,459,000	12.250	19.90	120.72	22,130,000

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations

Label: EDA-1 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.011
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	1.10 ft/s
Segment Time of Concentration	0.005 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.020 hours

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{**}(2/3)) * (S^{**}0.5)) / n$$
$$(Lf / V) / 3600$$

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
S= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-1 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.09 ft/s
Segment Time of Concentration	0.063 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.063 hours
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Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-1 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

==== SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R**(2/3)) * (S**(0.5))) / n$$
$$(Lf / V) / 3600$$

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
S= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

Pre-Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	1.05 ft/s
Segment Time of Concentration	0.026 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.026 hours
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Pre-Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3)) * (S^{.48} * 0.5)) / n$$
$$(Lf / V) / 3600$$

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

Pre-Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.230 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,009.00 ft
Is Paved?	False
Slope	0.009 ft/ft
Average Velocity	1.52 ft/s
Segment Time of Concentration	0.184 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.414 hours

Pre-Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

==== 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:
$$V = 20.3282 * (Sf**(0.5))$$

$$(Lf / V) / 3600$$

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

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-3 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.012 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.32 ft/s
Segment Time of Concentration	0.087 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	333.00 ft
Is Paved?	False
Slope	0.009 ft/ft
Average Velocity	1.49 ft/s
Segment Time of Concentration	0.062 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.149 hours

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-3 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

==== SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3)) * (S^{.48} * 0.5)) / n$$

$$(Lf / V) / 3600$$

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:
$$V = 16.1345 * (S^{.48} * 0.5)$$

Paved Surface:
$$V = 20.3282 * (S^{.48} * 0.5)$$

$$(Lf / V) / 3600$$

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

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.006 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.115 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	222.00 ft
Is Paved?	False
Slope	0.018 ft/ft
Average Velocity	2.16 ft/s
Segment Time of Concentration	0.028 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.144 hours

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

==== SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3)) * (S^{.48} * 0.5)) / n$$

$$(Lf / V) / 3600$$

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:
$$V = 16.1345 * (S^{.48} * 0.5)$$

Paved Surface:
$$V = 20.3282 * (S^{.48} * 0.5)$$

$$(Lf / V) / 3600$$

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

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-5 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.007 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.26 ft/s
Segment Time of Concentration	0.108 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	285.00 ft
Is Paved?	False
Slope	0.017 ft/ft
Average Velocity	2.09 ft/s
Segment Time of Concentration	0.038 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.146 hours

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-5 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

==== SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3)) * (S^{.48} * 0.5)) / n$$

$$(Lf / V) / 3600$$

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:
$$V = 16.1345 * (S^{.48} * 0.5)$$

Paved Surface:
$$V = 20.3282 * (S^{.48} * 0.5)$$

$$(Lf / V) / 3600$$

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

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-6 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.003 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.17 ft/s
Segment Time of Concentration	0.163 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	591.00 ft
Is Paved?	False
Slope	0.014 ft/ft
Average Velocity	1.88 ft/s
Segment Time of Concentration	0.087 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.251 hours

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-6 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3))) * (S^{.58} * 0.5)) / n$$

$$(Lf / V) / 3600$$

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 =
$$V = 16.1345 * (S^{.58} * 0.5)$$

Paved Surface:
$$V = 20.3282 * (S^{.58} * 0.5)$$

Where:
$$(Lf / V) / 3600$$

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

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-7 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.30 ft/s
Segment Time of Concentration	0.094 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	204.00 ft
Is Paved?	False
Slope	0.013 ft/ft
Average Velocity	1.84 ft/s
Segment Time of Concentration	0.031 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	396.00 ft
Is Paved?	False
Slope	0.006 ft/ft
Average Velocity	1.20 ft/s
Segment Time of Concentration	0.092 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.217 hours

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-7 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

==== SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3))) * (S^{.48} * 0.5)) / n$$

$$(Lf / V) / 3600$$

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:
$$V = 16.1345 * (S^{.48} * 0.5)$$

Paved Surface:
$$V = 20.3282 * (S^{.48} * 0.5)$$

Where:
$$(Lf / V) / 3600$$

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

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.009 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.28 ft/s
Segment Time of Concentration	0.098 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	193.00 ft
Is Paved?	False
Slope	0.032 ft/ft
Average Velocity	2.89 ft/s
Segment Time of Concentration	0.019 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	360.00 ft
Is Paved?	False
Slope	0.005 ft/ft
Average Velocity	1.14 ft/s
Segment Time of Concentration	0.088 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.204 hours

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

==== 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:
$$V = 20.3282 * (Sf**(0.5))$$

$$(Lf / V) / 3600$$

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

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-9 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.004 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.21 ft/s
Segment Time of Concentration	0.135 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	330.00 ft
Is Paved?	False
Slope	0.013 ft/ft
Average Velocity	1.84 ft/s
Segment Time of Concentration	0.050 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.185 hours

Pre-Dev Projected Rainfall

Subsection: Time of Concentration Calculations
Label: EDA-9 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

==== SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R**(2/3))) * (S**(0.5)) / n$$
$$(Lf / V) / 3600$$

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
S= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

Tc =
$$V = 16.1345 * (S**(0.5))$$
$$V = 20.3282 * (S**(0.5))$$
$$(Lf / V) / 3600$$

Where:

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

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Areas - Gravel (w/ right-of-way) - Soil D	91.000	0.040	0.0	0.0	91.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.040	(N/A)	(N/A)	91.000

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-1 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.070	0.0	0.0	39.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.070	(N/A)	(N/A)	39.000

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-2 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Impervious Building	98.000	0.100	0.0	0.0	98.000
Impervious Areas - Gravel (w/ right-of-way) - Soil D	91.000	0.680	0.0	0.0	91.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.780	(N/A)	(N/A)	91.897

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-2 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops A soil	67,000	4.990	0.0	0.0	67,000
Row crops B soil	78,000	2.920	0.0	0.0	78,000
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39,000	0.500	0.0	0.0	39,000
Small grain - Straight row (SR), good - Soil A	63,000	0.260	0.0	0.0	63,000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	8.670	(N/A)	(N/A)	68,970

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-3 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops - Straight row (SR), good - Soil B	78,000	0.140	0.0	0.0	78,000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.140	(N/A)	(N/A)	78,000

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops B soil	78,000	0.260	0.0	0.0	78,000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.260	(N/A)	(N/A)	78,000

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-5 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row Crops A soil	67,000	1.100	0.0	0.0	67,000
Row Crops B soil	78,000	0.640	0.0	0.0	78,000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.740	(N/A)	(N/A)	71,046

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-6 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row Crops A soil	67.000	3.900	0.0	0.0	67.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.900	(N/A)	(N/A)	67.000

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Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-7 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row Crops A soil	67.000	0.850	0.0	0.0	67.000
Row Crops B soil	78.000	0.100	0.0	0.0	78.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.950	(N/A)	(N/A)	68.158

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Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row crops - Straight row (SR), good - Soil A	67.000	0.260	0.0	0.0	67.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.260	(N/A)	(N/A)	67.000

Pre-Dev Projected Rainfall

Subsection: Runoff CN-Area
Label: EDA-9 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Row Crops A soil	67.000	2.770	0.0	0.0	67.000
Row Crops B soil	78.000	0.420	0.0	0.0	78.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	3.190	(N/A)	(N/A)	68.448

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.040 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.16 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)	91.000
Area (User Defined)	0.040 acres
Maximum Retention (Pervious)	1.0 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	425.616 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	426.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.32 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.040 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.28 ft³/s

Drainage Area	
SCS CN (Composite)	91.000
Area (User Defined)	0.040 acres
Maximum Retention (Pervious)	1.0 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.2 in
Runoff Volume (Pervious)	749,652 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	750,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.32 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.040 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.56 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.55 ft³/s

Drainage Area	
SCS CN (Composite)	91.000
Area (User Defined)	0.040 acres
Maximum Retention (Pervious)	1.0 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	10.9 in
Runoff Volume (Pervious)	1,588.395 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,589,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.32 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	0.070 acres
Computational Time Increment	0.008 hours
Time to Peak (Computed)	24,007 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24,000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.070 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	9.456 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	9,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.73 ft³/s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.372 hours
Total unit time, Tb	0.414 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	0.070 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.223 hours
Flow (Peak, Computed)	0.01 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.01 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.070 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	128.896 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	129,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.73 ft³/s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.372 hours
Total unit time, Tb	0.414 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	0.070 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.113 hours
Flow (Peak, Computed)	0.26 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.25 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.070 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	823.438 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	823,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-1 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.73 ft³/s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.372 hours
Total unit time, Tb	0.414 hours

Pre-Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	0.780 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	3.20 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.20 ft³/s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	0.780 acres
Maximum Retention (Previous)	0.9 in
Maximum Retention (Previous, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	3.0 in
Runoff Volume (Previous)	8,581.104 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,584.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	19.54 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.155 hours
Total unit time, Tb	0.172 hours

Pre-Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	0.780 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	5.36 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.36 ft³/s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	0.780 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.3 in
Runoff Volume (Pervious)	14,938,509 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	14,941,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	19.54 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.155 hours
Total unit time, Tb	0.172 hours

Pre-Dev Projected Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	0.780 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	10.74 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	10.74 ft³/s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	0.780 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.1 in
Runoff Volume (Pervious)	31,331.839 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	31,334.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

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

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	19.54 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.155 hours
Total unit time, Tb	0.172 hours

Pre-Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.414 hours
Area (User Defined)	8,670 acres
Computational Time Increment	0.055 hours
Time to Peak (Computed)	12.366 hours
Flow (Peak, Computed)	4.87 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.400 hours
Flow (Peak Interpolated Output)	4.85 ft³/s

Drainage Area	
SCS CN (Composite)	69.000
Area (User Defined)	8,670 acres
Maximum Retention (Pervious)	4.5 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2 in
Runoff Volume (Pervious)	38,033,997 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	38,036,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.414 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.84 ft³/s
Unit peak time, Tp	0.276 hours
Unit receding limb, Tr	2.429 hours
Total unit time, Tb	2.705 hours

Pre-Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.414 hours
Area (User Defined)	8,670 acres
Computational Time Increment	0.055 hours
Time to Peak (Computed)	12.366 hours
Flow (Peak, Computed)	12.61 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	12.59 ft³/s

Drainage Area	
SCS CN (Composite)	69,000
Area (User Defined)	8,670 acres
Maximum Retention (Pervious)	4.5 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	90,560,645 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	90,568,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.414 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.84 ft³/s
Unit peak time, Tp	0.276 hours
Unit receding limb, Tr	2.429 hours
Total unit time, Tb	2.705 hours

Pre-Dev Projected Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.414 hours
Area (User Defined)	8.670 acres

Computational Time Increment	0.055 hours
Time to Peak (Computed)	12.311 hours
Flow (Peak, Computed)	35.64 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	35.47 ft³/s

Drainage Area	
SCS CN (Composite)	69.000
Area (User Defined)	8.670 acres
Maximum Retention (Pervious)	4.5 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.9 in
Runoff Volume (Pervious)	250,169.816 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	250,196.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.414 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

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

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	13.84 ft³/s
Unit peak time, Tp	0.276 hours
Unit receding limb, Tr	2.429 hours
Total unit time, Tb	2.705 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	0.140 acres
Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.168 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)	0.22 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.140 acres
Maximum Retention (Previous)	2.8 in
Maximum Retention (Previous, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	1.8 in
Runoff Volume (Previous)	922.630 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	923.000 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

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.62 ft³/s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.876 hours
Total unit time, Tb	0.976 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.148 hours
Flow (Peak, Computed)	0.46 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.46 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.8 in
Runoff Volume (Pervious)	1,913.380 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,913.000 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

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.62 ft³/s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.876 hours
Total unit time, Tb	0.976 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.148 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)	78.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.2 in
Runoff Volume (Pervious)	4,686.341 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,686,000 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

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-3 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.62 ft³/s
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.876 hours
Total unit time, Tb	0.976 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.144 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.152 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)	0.42 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.8 in
Runoff Volume (Pervious)	1,713.455 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,714,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.144 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.20 ft³/s
Unit peak time, Tp	0.096 hours
Unit receding limb, Tr	0.842 hours
Total unit time, Tb	0.938 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.144 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	0.88 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.88 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.8 in
Runoff Volume (Pervious)	3,553.421 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,554,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.144 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.20 ft³/s
Unit peak time, Tp	0.096 hours
Unit receding limb, Tr	0.842 hours
Total unit time, Tb	0.938 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.144 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	2.09 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.09 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	9.2 in
Runoff Volume (Pervious)	8,703,204 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,704,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.144 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-4 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.20 ft³/s
Unit peak time, Tp	0.096 hours
Unit receding limb, Tr	0.842 hours
Total unit time, Tb	0.938 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.146 hours
Area (User Defined)	1.740 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	1.96 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.95 ft³/s

Drainage Area	
SCS CN (Composite)	71.000
Area (User Defined)	1.740 acres
Maximum Retention (Pervious)	4.1 in
Maximum Retention (Pervious, 20 percent)	0.8 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.3 in
Runoff Volume (Pervious)	8,419,064 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,419,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.146 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.88 ft³/s
Unit peak time, Tp	0.097 hours
Unit receding limb, Tr	0.857 hours
Total unit time, Tb	0.954 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.146 hours
Area (User Defined)	1.740 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.148 hours
Flow (Peak, Computed)	4.72 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	4.72 ft³/s

Drainage Area	
SCS CN (Composite)	71.000
Area (User Defined)	1.740 acres
Maximum Retention (Pervious)	4.1 in
Maximum Retention (Pervious, 20 percent)	0.8 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	19,383,578 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	19,384,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.146 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.88 ft³/s
Unit peak time, Tp	0.097 hours
Unit receding limb, Tr	0.857 hours
Total unit time, Tb	0.954 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.146 hours
Area (User Defined)	1.740 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.148 hours
Flow (Peak, Computed)	12.64 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	12.63 ft³/s

Drainage Area	
SCS CN (Composite)	71.000
Area (User Defined)	1.740 acres
Maximum Retention (Pervious)	4.1 in
Maximum Retention (Pervious, 20 percent)	0.8 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.2 in
Runoff Volume (Pervious)	52,031.234 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	52,031.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.146 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-5 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	7.88 ft³/s
Unit peak time, Tp	0.097 hours
Unit receding limb, Tr	0.857 hours
Total unit time, Tb	0.954 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.251 hours
Area (User Defined)	3,900 acres
Computational Time Increment	0.033 hours
Time to Peak (Computed)	12.259 hours
Flow (Peak, Computed)	2.55 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	2.55 ft³/s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	3,900 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	15,428,178 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	15,428,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.251 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.29 ft³/s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	1.470 hours
Total unit time, Tb	1.637 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.251 hours
Area (User Defined)	3,900 acres

Computational Time Increment	0.033 hours
Time to Peak (Computed)	12.225 hours
Flow (Peak, Computed)	6.99 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	6.93 ft³/s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	3,900 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	38,076,112 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	38,076,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.251 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.29 ft³/s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	1.470 hours
Total unit time, Tb	1.637 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.251 hours
Area (User Defined)	3,900 acres

Computational Time Increment	0.033 hours
Time to Peak (Computed)	12.225 hours
Flow (Peak, Computed)	20.37 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	20.16 ft³/s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	3,900 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.7 in
Runoff Volume (Pervious)	108,395,596 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	108,395,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.251 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-6 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	10.29 ft³/s
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	1.470 hours
Total unit time, Tb	1.637 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.217 hours
Area (User Defined)	0.950 acres
Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.211 hours
Flow (Peak, Computed)	0.72 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.72 ft³/s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	0.950 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	3,960.384 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,960,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.217 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.90 ft³/s
Unit peak time, Tp	0.144 hours
Unit receding limb, Tr	1.270 hours
Total unit time, Tb	1.415 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.217 hours
Area (User Defined)	0.950 acres

Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.211 hours
Flow (Peak, Computed)	1.91 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	1.90 ft³/s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	0.950 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.8 in
Runoff Volume (Pervious)	9,597.485 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	9,598,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.217 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.90 ft³/s
Unit peak time, Tp	0.144 hours
Unit receding limb, Tr	1.270 hours
Total unit time, Tb	1.415 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.217 hours
Area (User Defined)	0.950 acres

Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.211 hours
Flow (Peak, Computed)	5.43 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	5.43 ft³/s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	0.950 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.8 in
Runoff Volume (Pervious)	26,909.476 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	26,910,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.217 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-7 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.90 ft³/s
Unit peak time, Tp	0.144 hours
Unit receding limb, Tr	1.270 hours
Total unit time, Tb	1.415 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.204 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	12.215 hours
Flow (Peak, Computed)	0.19 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.19 ft³/s

Drainage Area	
SCS CN (Composite)	67.000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	1,028,545 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,028,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.204 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.84 ft³/s
Unit peak time, Tp	0.136 hours
Unit receding limb, Tr	1.197 hours
Total unit time, Tb	1.333 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.204 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	12.188 hours
Flow (Peak, Computed)	0.52 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.52 ft³/s

Drainage Area	
SCS CN (Composite)	67.000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	2,538,407 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,538,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.204 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.84 ft³/s
Unit peak time, Tp	0.136 hours
Unit receding limb, Tr	1.197 hours
Total unit time, Tb	1.333 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.204 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	12.188 hours
Flow (Peak, Computed)	1.51 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	1.50 ft³/s

Drainage Area	
SCS CN (Composite)	67.000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.7 in
Runoff Volume (Pervious)	7,226.373 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	7,226,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.204 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-8 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.84 ft³/s
Unit peak time, Tp	0.136 hours
Unit receding limb, Tr	1.197 hours
Total unit time, Tb	1.333 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.185 hours
Area (User Defined)	3.190 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.193 hours
Flow (Peak, Computed)	2.65 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	2.64 ft³/s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	3.190 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	13,298,551 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,298,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.185 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.39 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.086 hours
Total unit time, Tb	1.209 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.185 hours
Area (User Defined)	3.190 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.193 hours
Flow (Peak, Computed)	6.94 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	6.90 ft³/s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	3.190 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.8 in
Runoff Volume (Pervious)	32,227.344 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	32,225,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.185 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.39 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.086 hours
Total unit time, Tb	1.209 hours

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.185 hours
Area (User Defined)	3.190 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	19.73 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	19.47 ft³/s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	3.190 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.8 in
Runoff Volume (Pervious)	90,359,189 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	90,354,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.185 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Pre-Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	11.39 ft³/s
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.086 hours
Total unit time, Tb	1.209 hours

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 2
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Summary for Hydrograph Addition at 'POI 2'

Upstream Link		Pond 2			Upstream Node		
Outlet-2							
Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)			
Flow (From)	Outlet-2	0.000	0.000	0.00			
Flow (In)	POI 2	0.000	0.000	0.00			

Node Inflows

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 2
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Summary for Hydrograph Addition at 'POI 2'

Upstream Link		Pond 2			Upstream Node		
Outlet-2							
Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)			
Flow (From)	Outlet-2	0.000	0.000	0.00			
Flow (In)	POI 2	0.000	0.000	0.00			

Node Inflows

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 2
Scenario: 100yr projected

Summary for Hydrograph Addition at 'POI 2'

Upstream Link		Upstream Node	
Outlet-2		Pond 2	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-2	0.000	0.000	0.00
Flow (In)	POI 2	0.000	0.000	0.00

Return Event: 100 years
Storm Event: 100

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 3
Scenario: 2yr projected

Summary for Hydrograph Addition at 'POI 3'

Upstream Link		Upstream Node	
Outlet-5		Pond 5	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-5	8,419.016	12.200	1.91
Flow (In)	POI 3	8,419.016	12.200	1.91

Return Event: 2 years
Storm Event: 2

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 3
Scenario: 10yr projected

Summary for Hydrograph Addition at 'POI 3'

Upstream Link		Upstream Node	
Outlet-5		Pond 5	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-5	19,383.525	12.200	4.60
Flow (In)	POI 3	19,383.525	12.200	4.60

Return Event: 10 years
Storm Event: 10

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 3
Scenario: 100yr projected

Summary for Hydrograph Addition at 'POI 3'

Upstream Link		Upstream Node	
Outlet-5		Pond 5	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-5	52,031.219	12.200	12.22
Flow (In)	POI 3	52,031.219	12.200	12.22

Return Event: 100 years
Storm Event: 100

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 4
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Summary for Hydrograph Addition at 'POI 4'

Upstream Link		Upstream Node	
<Catchment to Outflow Node>		EDA-7 Perv	
Outlet-6		Pond 6	
<Catchment to Outflow Node>		EDA-8 Perv	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	EDA-7 Perv	3,960.428	12.200	0.72
Flow (From)	Outlet-6	0.000	0.000	0.00
Flow (From)	EDA-8 Perv	1,028.429	12.200	0.19
Flow (In)	POI 4	4,988.856	12.200	0.91

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 4
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Summary for Hydrograph Addition at 'POI 4'

Upstream Link		Upstream Node	
<Catchment to Outflow Node>		EDA-7 Perv	
Outlet-6		Pond 6	
<Catchment to Outflow Node>		EDA-8 Perv	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	EDA-7 Perv	9,597.583	12.200	1.90
Flow (From)	Outlet-6	22,141.088	13.100	2.20
Flow (From)	EDA-8 Perv	2,538.118	12.200	0.52
Flow (In)	POI 4	34,276.789	13.000	2.86

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI 4
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Summary for Hydrograph Addition at 'POI 4'

Upstream Link		Upstream Node	
<Catchment to Outflow Node>		EDA-7 Perv	
Outlet-6		Pond 6	
<Catchment to Outflow Node>		EDA-8 Perv	

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-7 Perv	26,903,711	12.200	5.43
Flow (From)	Outlet-6	92,458,461	12.250	19.90
Flow (From)	EDA-8 Perv	7,225,590	12.200	1.50
Flow (In)	POI 4	126,593,761	12.250	26.54

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI-5
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Summary for Hydrograph Addition at 'POI-5'

Upstream Link		Upstream Node	
<Catchment to Outflow Node>		EDA-9 Perv	

Node Inflows

Inflow Type	Element	Volume (ft³)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Flow (From)	EDA-9 Perv	13,297,745	12.200	2.64
Flow (In)	POI-5	13,297,745	12.200	2.64

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI-5
Scenario: 10yr projected

Summary for Hydrograph Addition at 'POI-5'

Upstream Link		Upstream Node	
<Catchment to Outflow Node>		EDA-9 Perv	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	EDA-9 Perv	32,225,423	12.200	6.90
Flow (In)	POI-5	32,225,423	12.200	6.90

Return Event: 10 years
Storm Event: 10

Pre-Dev Projected Rainfall

Subsection: Addition Summary
Label: POI-5
Scenario: 100yr projected

Summary for Hydrograph Addition at 'POI-5'

Upstream Link		Upstream Node	
<Catchment to Outflow Node>		EDA-9 Perv	

Node Inflows

Inflow Type	Element	Volume (ft ³)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	EDA-9 Perv	90,354,127	12.200	19.47
Flow (In)	POI-5	90,354,127	12.200	19.47

Return Event: 100 years
Storm Event: 100

Pre-Dev Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363,000 ft ³
Outflow (Starting)	0.13 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak		Maximum Storage	
Time to Peak (hours)	24.100	Elevation (ft)	118.64
		Volume (ft ³)	6,801,000

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100 0.16	0.000	0.00
Pond Outflow...	0.000 0.13	11.850	-0.02

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	436,000 Forward	0.000	Reverse
Pond Outflow...	1,000 Reverse	12,000	Forward
Mass Balance (ft ³)			
Volume (Initial ICPM)	6,363,000 ft ³		
Volume (Total In ICPM)	437,000 ft ³		
Volume (Total Out ICPM)	12,000 ft ³		
Volume (Ending)	6,801,000 ft ³		
Elevation (Ending)	118.64 ft		
Difference	-13,000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	2.9 %		

Pre-Dev Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363,000 ft ³
Outflow (Starting)	0.13 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak		Maximum Storage	
Time to Peak (hours)	24.300	Elevation (ft)	118.68
		Volume (ft ³)	7,247,000

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100 0.28	0.000	0.00
Pond Outflow...	0.000 0.13	10.950	-0.01

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	879,000 Forward	0.000	Reverse
Pond Outflow...	2,000 Reverse	12,000	Forward
Mass Balance (ft ³)			
Volume (Initial ICPM)	6,363,000 ft ³		
Volume (Total In ICPM)	881,000 ft ³		
Volume (Total Out ICPM)	12,000 ft ³		
Volume (Ending)	7,247,000 ft ³		
Elevation (Ending)	118.68 ft		
Difference	-14,000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	1.6 %		

Pre-Dev Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363,000 ft ³
Outflow (Starting)	0.13 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
	hours

Time to Peak		Maximum Storage	
Peak (hours)		Elevation (ft)	
24.300		118.82	
		8,781,000	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)		Time to Peak (hours)	
Flow (Peak) (ft ³ /s)		Flow (Peak) (ft ³ /s)	
12.100		0.81	
0.000		0.13	
Pond Inflow....		0.000	
Pond Outflow...		8.000	
		-0.02	

Total Volume In		Total Volume Out	
Volume (ft ³)		Volume (ft ³)	
Direction		Direction	
Forward		Reverse	
2,412,000		0.000	
5,000		12,000	
Pond Inflow....		Forward	
Pond Outflow...		Reverse	
Mass Balance (ft ³)		Forward	
Volume (Initial ICPM)		Reverse	
6,363,000 ft ³		Volume (Total In ICPM)	
2,418,000 ft ³		Volume (Total Out ICPM)	
12,000 ft ³		Volume (Ending)	
8,781,000 ft ³		Elevation (Ending)	
118.82 ft		Difference	
-12,000 ft ³		Percent of Inflow Volume (Interconnected Pond Mass Balance)	
0.5 %			

Pre-Dev Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
	hours

Time to Peak		Maximum Storage	
Peak (hours)		Elevation (ft)	
25.900		118.89	
		49,817,000	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)		Time to Peak (hours)	
Flow (Peak) (ft ³ /s)		Flow (Peak) (ft ³ /s)	
12.300		6.03	
0.000		0.00	
Pond Inflow....		0.003	
Pond Outflow...		0.000	
		0.00	

Total Volume In		Total Volume Out	
Volume (ft ³)		Volume (ft ³)	
Direction		Direction	
Forward		Reverse	
49,269,000		0.000	
0.000		0.000	
Pond Inflow....		Forward	
Pond Outflow...		Reverse	
Mass Balance (ft ³)		Forward	
Volume (Initial ICPM)		Reverse	
559,000 ft ³		Volume (Total In ICPM)	
49,269,000 ft ³		Volume (Total Out ICPM)	
0.000 ft ³		Volume (Ending)	
49,818,000 ft ³		Elevation (Ending)	
118.89 ft		Difference	
10,000 ft ³		Percent of Inflow Volume (Interconnected Pond Mass Balance)	
0.0 %			

Pre-Dev Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak		Maximum Storage	
Time to Peak (hours)	Elevation (ft)	Volume (ft ³)	
26.000	119.18	111,536.00	0

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
12.300	14.80	0.003	0.00
0.000	0.00	0.000	0.00

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
110,989,000	Forward	0.000	Reverse
0.000	Reverse	0.000	Forward
Mass Balance (ft ³)			
Volume (Initial ICPM)	559,000 ft ³		
Volume (Total In ICPM)	110,989,000 ft ³		
Volume (Total Out ICPM)	0.000 ft ³		
Volume (Ending)	111,536,000 ft ³		
Elevation (Ending)	119.18 ft		
Difference	12,000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %		

Pre-Dev Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak		Maximum Storage	
Time to Peak (hours)	Elevation (ft)	Volume (ft ³)	
25.950	119.58	295,476.00	0

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
12.300	40.46	0.002	0.00
0.000	0.00	0.000	0.00

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
294,929,000	Forward	0.000	Reverse
0.000	Reverse	0.000	Forward
Mass Balance (ft ³)			
Volume (Initial ICPM)	559,000 ft ³		
Volume (Total In ICPM)	294,929,000 ft ³		
Volume (Total Out ICPM)	0.000 ft ³		
Volume (Ending)	295,479,000 ft ³		
Elevation (Ending)	119.58 ft		
Difference	10,000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %		

Pre-Dev Projected Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 5
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
121.80	0.00	0.000	0.000	0.00	0.00	0.00
121.90	4.33	225.060	0.155	0.00	4.33	6.83
122.00	25.23	1,800.480	0.620	0.00	25.23	45.24
122.10	64.68	4,522.951	0.630	0.00	64.68	114.94

Pre-Dev Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (1N)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	1.95 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	1.91 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.84 ft
Volume (Peak)	19,486 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	8,419,000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	8,419,000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Pre-Dev Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	4.72 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	4.60 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.90 ft
Volume (Peak)	233.996 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	19,384.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	19,384.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Pre-Dev Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	12.63 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	12.22 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.94 ft
Volume (Peak)	588.207 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	52,031.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	52,031.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Pre-Dev Projected Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 6
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
119.80	0.00	0.000	0.000	0.00	0.00	0.00
119.90	0.00	232.320	0.160	0.00	0.00	2.58
120.00	0.00	1,898.560	0.640	0.00	0.00	20.65
120.10	0.00	4,651.807	0.642	0.00	0.00	51.69
120.20	0.00	7,455.880	0.645	0.00	0.00	82.84
120.30	0.00	10,270.802	0.647	0.00	0.00	114.12
120.40	0.00	13,096.593	0.650	0.00	0.00	145.52
120.50	0.00	15,933.274	0.652	0.00	0.00	177.04
120.60	2.71	18,780.866	0.655	0.00	2.71	211.38
120.70	15.31	21,638.390	0.657	0.00	15.31	255.74
120.80	42.18	24,508.866	0.660	0.00	42.18	314.50

Pre-Dev Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (1N)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	2.55 ft³/s	Time to Peak (Flow, In)	12.250 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours
Elevation (Water Surface, Peak)			
	120.48 ft		
Volume (Peak)			
	15,427.189 ft³		
Mass Balance (ft³)			
Volume (Initial)	0.000 ft³		
Volume (Total Inflow)	15,428.000 ft³		
Volume (Total Infiltration)	0.000 ft³		
Volume (Total Outlet Outflow)	0.000 ft³		
Volume (Retained)	15,427.000 ft³		
Volume (Unrouted)	-1.000 ft³		
Error (Mass Balance)	0.0 %		

Pre-Dev Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	6.93 ft³/s	Time to Peak (Flow, In)	12.250 hours
Flow (Peak Outlet)	2.20 ft³/s	Time to Peak (Flow, Outlet)	13.100 hours

Elevation (Water Surface, Peak)	120.58 ft
Volume (Peak)	18,248.169 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	38,076.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	22,141.000 ft³
Volume (Retained)	15,935.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Pre-Dev Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	20.16 ft³/s	Time to Peak (Flow, In)	12.200 hours
Flow (Peak Outlet)	19.90 ft³/s	Time to Peak (Flow, Outlet)	12.250 hours

Elevation (Water Surface, Peak)	120.72 ft
Volume (Peak)	22,129.751 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	108,395.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	92,459.000 ft³
Volume (Retained)	15,936.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Ex Pond Volumes

Subsection: Elevation-Area Volume Curve
Label: Pond 1
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1²+A2²) (acres)	Volume (ft³)	Volume (Total) (ft³)
118.03	0.0	0.000	0.000	0.000	0.000
119.00	0.0	0.760	0.769	10,828.000	10,828.000
120.00	0.0	1.250	2.985	43,338.000	54,166.000
120.65	0.0	1.300	3.825	36,098.000	90,264.000
121.00	0.0	2.020	4.940	25,108.000	115,372.000
121.50	0.0	2.600	6.912	50,179.000	165,551.000

Ex Pond Volumes

Subsection: Elevation-Area Volume Curve
Label: Pond 2
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1²+A2²) (acres)	Volume (ft³)	Volume (Total) (ft³)
117.46	0.0	0.000	0.000	0.000	0.000
118.59	0.0	0.010	0.010	164.000	164.000
118.60	0.0	2.550	2.720	395.000	559.000
119.00	0.0	5.320	11.553	67,101.000	67,660.000
119.20	0.0	5.790	16.660	48,381.000	116,041.000
120.00	0.0	16.980	32.685	379,673.000	495,714.000
120.65	0.0	17.770	52.121	491,913.000	987,627.000
121.00	0.0	23.290	61.404	312,053.000	1,299,680.000
121.15	0.0	23.500	70.185	152,862.000	1,452,543.000

Ex Pond Volumes

Subsection: Elevation-Area Volume Curve
Label: Pond 5
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1+A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
121.80	0.0	0.000	0.000	0.000	0.000
122.00	0.0	0.620	0.620	1,800,000	1,800,000
122.10	0.0	0.630	1.875	2,722,000	4,523,000

Ex Pond Volumes

Subsection: Elevation-Area Volume Curve
Label: Pond 6
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Elevation (ft)	Planimeter (ft²)	Area (acres)	A1+A2+sqr (A1+A2) (acres)	Volume (ft³)	Volume (Total) (ft³)
119.80	0.0	0.000	0.000	0.000	0.000
120.00	0.0	0.640	0.640	1,859,000	1,859,000
120.80	0.0	0.660	1.950	22,650,000	24,509,000

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Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC 1
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Requested Pond Water Surface Elevations	
Minimum (Headwater)	118.03 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	121.50 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 1	Forward	TW	118.03	121.50
Irregular Weir	LP road	Forward	TW	120.26	121.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC 1
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Structure ID: LP road
Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	121.50
85.00	121.00
139.00	120.60
189.00	120.60
249.00	120.26
299.00	120.56
349.00	120.82
399.00	121.20
450.00	121.50

Lowest Elevation 120.26 ft
Weir Coefficient 3.00 (ft^{0.5}/s)

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	12.0 in
Length	23.00 ft
Length (Computed Barrel)	23.01 ft
Slope (Computed)	0.025 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.031
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.083
T2 ratio (HW/D)	1.185
Slope Correction Factor	-0.500

Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC 1
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Use unsubmerged inlet control 0 equation below T1 elevation.
Use submerged inlet control 0 equation above T2 elevation

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

T1 Elevation	119.11 ft	T1 Flow	2.75 ft ³ /s
T2 Elevation	119.21 ft	T2 Flow	3.14 ft ³ /s

Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC-2
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Requested Pond Water Surface Elevations		
Minimum (Headwater)	118.60 ft	
Increment (Headwater)	0.10 ft	
Maximum (Headwater)	121.15 ft	

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir	Weir - 1	Forward	TW	120.46	121.15
Irregular Weir	Weir - 2	Forward	TW	120.90	121.15
Tailwater Settings	Tailwater			(N/A)	(N/A)

Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC-2
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Structure ID: Weir - 1
Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	121.15
32.00	120.72
130.00	120.62
177.00	120.46
273.00	120.65
320.00	120.65
387.00	121.15

Lowest Elevation 120.46 ft
Weir Coefficient 3.00 (ft~0.5)/s

Structure ID: Weir - 2
Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	121.15
5.00	120.92
45.00	120.90
85.00	120.93
90.00	121.15

Lowest Elevation 120.90 ft
Weir Coefficient 3.00 (ft~0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC-5
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Requested Pond Water Surface Elevations	
Minimum (Headwater)	121.80 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	122.10 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir	Weir - 1	Forward	TW	121.80	122.10
Tailwater Settings	Tailwater			(N/A)	(N/A)

Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC-5
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Structure ID: Weir - 1
Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	122.10
32.00	122.00
53.00	121.90
92.00	121.80
182.00	121.90
304.00	122.10

Lowest Elevation 121.80 ft
Weir Coefficient 3.00 (ft~0.5)/s

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall
----------------	--------------

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC-6
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Requested Pond Water Surface Elevations	
Minimum (Headwater)	119.80 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	120.80 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir	Weir - 1	Forward	TW	120.50	120.80
Tailwater Settings	Tailwater			(N/A)	(N/A)

Ex Pond Outlet Data

Subsection: Outlet Input Data
Label: OC-6
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Structure ID: Weir - 1 Structure Type: Irregular Weir	
Station (ft)	Elevation (ft)
0.00	120.80
162.00	120.50
242.00	120.80

Lowest Elevation 120.50 ft
Weir Coefficient 3.00 (ft~0.5)/s

Structure ID: TW Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft³/s
Flow Tolerance (Maximum)	10.000 ft³/s

Appendix B:
Post-Developed CN & Tc Calculations 2-, 10, & 100-year Storm
Current and Projected Rainfall



CN Area Collection - PDA-1 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Areas - Paved; open ditches (w/right-of-way) - Soil D	93.000	0.140	0.0	0.0

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CN Area Collection - PDA-1 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.240	0.0	0.0

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CN Area Collection - PDA-2 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Areas - Dirt (w/ right-of-way) - Soil B	82.000	0.580	0.0	0.0
Impervious Building	98.000	0.560	0.0	0.0

CN Area Collection - PDA-2 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.560	0.0	0.0
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	1.620	0.0	0.0
Small grain - Straight row (SR), good - Soil A	63.000	0.260	0.0	0.0

CN Area Collection - PDA-4 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.170	0.0	0.0

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CN Area Collection - PDA-5 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.510	0.0	0.0

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CN Area Collection - PDA-6 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.580	0.0	0.0

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CN Area Collection - PDA-7 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Building	98.000	0.080	0.0	0.0
Impervious	98.000	0.020	0.0	0.0

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CN Area Collection - PDA-7 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.870	0.0	0.0

CN Area Collection - PDA-8 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.100	0.0	0.0

CN Area Collection - PDA-9 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.690	0.0	0.0
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.410	0.0	0.0

CN Area Collection - PDA-9 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Building	98.000	0.520	0.0	0.0

CN Area Collection - PDA-10 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Building	98.000	1.520	0.0	0.0

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CN Area Collection - PDA-10 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	1.640	0.0	0.0

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CN Area Collection - PDA-11 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Building	98.000	1.710	0.0	0.0

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CN Area Collection - PDA-11 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.670	0.0	0.0

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CN Area Collection - PDA-12 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious vehicular	98.000	1.180	0.0	0.0
Impervious building	98.000	0.650	0.0	0.0
Impervious sidewalk	98.000	0.080	0.0	0.0

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CN Area Collection - PDA-12 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.560	0.0	0.0
Basin Area A soils	39.000	0.550	0.0	0.0

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CN Area Collection - PDA-13 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Vehicular	98.000	0.660	0.0	0.0
Impervious Building	98.000	1.100	0.0	0.0
Impervious sidewalk	98.000	0.040	0.0	0.0

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CN Area Collection - PDA-13 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.450	0.0	0.0
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	1.500	0.0	0.0

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Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-1 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.011
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	1.04 ft/s
Segment Time of Concentration	0.005 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.020 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-1 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{*}(2/3)) * (S^{*}-.0.5)) / n}$$

$$(Lf / V) / 3600$$

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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-1 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.08 ft/s
Segment Time of Concentration	0.067 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.067 hours
-----------------------------------	-------------

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-1 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

=== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{*}(2/3)) * (S^{*}0.5)) / n}$$

$$(Lf / V) / 3600$$

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

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-10 Imp
Scenario: 2 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	72.00 ft
Manning's n	0.011
Slope	0.250 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	3.70 ft/s
Segment Time of Concentration	0.005 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	163.00 ft
Is Paved?	False
Slope	0.005 ft/ft
Average Velocity	1.14 ft/s
Segment Time of Concentration	0.040 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	49.00 ft
Is Paved?	False
Slope	0.040 ft/ft
Average Velocity	3.23 ft/s
Segment Time of Concentration	0.004 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.049 hours

Return Event: 2 years
Storm Event: 2

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-10 Imp
Scenario: 2 year

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:
 $V = 20.3282 * (Sf**0.5)$

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

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-10 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.005 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.10 ft/s
Segment Time of Concentration	0.272 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	83.00 ft
Is Paved?	False
Slope	0.026 ft/ft
Average Velocity	2.60 ft/s
Segment Time of Concentration	0.009 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.281 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-10 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

==== 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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-11 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	70.00 ft
Manning's n	0.011
Slope	0.250 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	3.68 ft/s
Segment Time of Concentration	0.005 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	56.00 ft
Is Paved?	False
Slope	0.020 ft/ft
Average Velocity	2.28 ft/s
Segment Time of Concentration	0.007 hours
Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	814.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.061 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.073 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-11 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

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:
$$V = 20.3282 * (Sf**0.5)$$

Where:

$$(Lf / V) / 3600$$

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

SCS TR-55 Sheet Flow

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

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

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-11 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	92.00 ft
Manning's n	0.150
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.13 ft/s
Segment Time of Concentration	0.193 hours
Segment #2: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	644.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.048 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.241 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-11 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

==== 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= 24hr Rain depth, inches
Sf= Slope, %

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-12 Imp
Scenario: 2 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.015 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	1.28 ft/s
Segment Time of Concentration	0.022 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	25.00 ft
Is Paved?	True
Slope	0.020 ft/ft
Average Velocity	2.87 ft/s
Segment Time of Concentration	0.002 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	14.00 ft
Is Paved?	False
Slope	0.250 ft/ft
Average Velocity	8.07 ft/s
Segment Time of Concentration	0.000 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.025 hours

Return Event: 2 years
Storm Event: 2

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-12 Imp
Scenario: 2 year

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 =
$$\text{Unpaved surface:}$$
$$V = 16.1345 * (Sf**0.5)$$
$$\text{Paved Surface:}$$
$$V = 20.3282 * (Sf**0.5)$$
$$(Lf / V) / 3600$$

Where:

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

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-12 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.018 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.237 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	30.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.004 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.241 hours

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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-12 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Post Current Tc

Subsection: Time of Concentration Calculations

Label: PDA-13 Imp

Scenario: 2 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.97 ft/s
Segment Time of Concentration	0.029 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	125.00 ft
Is Paved?	True
Slope	0.012 ft/ft
Average Velocity	2.23 ft/s
Segment Time of Concentration	0.016 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	118.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.009 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.053 hours

Return Event: 2 years

Storm Event: 2

Post Current Tc

Subsection: Time of Concentration Calculations

Label: PDA-13 Imp

Scenario: 2 year

Time of Concentration Results

Segment #1: SCS Channel Flow	
Tc =	$R = Qa / Wp$ $V = (1.49 * (R^{.48} * (2/3)) * (S^{.48} * 0.5)) / n$ $(Lf / V) / 3600$
Where:	R= Hydraulic radius Aq= Flow area, square feet Wp= Wetted perimeter, feet V= Velocity, ft/sec S= 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: $V = 16.1345 * (S^{.48} * 0.5)$ Paved Surface: $V = 20.3282 * (S^{.48} * 0.5)$
Where:	$(Lf / V) / 3600$ V= Velocity, ft/sec S= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	$(0.007 * ((n * Lf)^{.48} * 0.8)) / ((P^{.48} * 0.5) * (S^{.48} * 0.4))$
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 24hr Rain depth, inches S= Slope, %

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-13 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	57.00 ft
Manning's n	0.150
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.131 hours
Segment #2: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	351.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.026 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.158 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-13 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

==== 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= 24hr Rain depth, inches
Sf= Slope, %

Post Current Tc

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

Return Event: 2 years
Storm Event: 2

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	1.00 ft/s
Segment Time of Concentration	0.028 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.028 hours

Post Current Tc

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

Return Event: 2 years
Storm Event: 2

=== SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.67} * (2/3)) * (S^{.48} * 0.5)) / n$$
$$(Lf / V) / 3600$$

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

Post Current Tc

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

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.243 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,009.00 ft
Is Paved?	False
Slope	0.009 ft/ft
Average Velocity	1.52 ft/s
Segment Time of Concentration	0.184 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.427 hours

Post Current Tc

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

Return Event: 2 years
Storm Event: 2

==== 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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	22.00 ft
Manning's n	0.150
Slope	0.200 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.33 ft/s
Segment Time of Concentration	0.019 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	238.00 ft
Is Paved?	False
Slope	0.013 ft/ft
Average Velocity	1.84 ft/s
Segment Time of Concentration	0.036 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.054 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.007 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.24 ft/s
Segment Time of Concentration	0.114 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	285.00 ft
Is Paved?	False
Slope	0.017 ft/ft
Average Velocity	2.09 ft/s
Segment Time of Concentration	0.038 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.152 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

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 =
$$\text{Unpaved surface:}$$
$$V = 16.1345 * (Sf**0.5)$$
$$\text{Paved Surface:}$$
$$V = 20.3282 * (Sf**0.5)$$
$$(Lf / V) / 3600$$

Where:

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

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	95.00 ft
Manning's n	0.150
Slope	0.300 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.52 ft/s
Segment Time of Concentration	0.051 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	591.00 ft
Is Paved?	False
Slope	0.014 ft/ft
Average Velocity	1.88 ft/s
Segment Time of Concentration	0.087 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.138 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-7 Imp
Scenario: 2 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	21.00 ft
Manning's n	0.011
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	1.05 ft/s
Segment Time of Concentration	0.006 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	451.00 ft
Is Paved?	False
Slope	0.020 ft/ft
Average Velocity	2.28 ft/s
Segment Time of Concentration	0.055 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	346.00 ft
Is Paved?	False
Slope	0.006 ft/ft
Average Velocity	1.25 ft/s
Segment Time of Concentration	0.077 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.137 hours

Return Event: 2 years
Storm Event: 2

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-7 Imp
Scenario: 2 year

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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.18 ft/s
Segment Time of Concentration	0.156 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	590.00 ft
Is Paved?	False
Slope	0.006 ft/ft
Average Velocity	1.25 ft/s
Segment Time of Concentration	0.131 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.287 hours

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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-8 Perv
Scenario: 2 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.050 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.26 ft/s
Segment Time of Concentration	0.108 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	193.00 ft
Is Paved?	False
Slope	0.032 ft/ft
Average Velocity	2.89 ft/s
Segment Time of Concentration	0.019 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	360.00 ft
Is Paved?	False
Slope	0.005 ft/ft
Average Velocity	1.14 ft/s
Segment Time of Concentration	0.088 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.214 hours

Return Event: 2 years
Storm Event: 2

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-8 Perv
Scenario: 2 year

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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-9 Imp
Scenario: 2 year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	72.00 ft
Manning's n	0.011
Slope	0.250 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	3.70 ft/s
Segment Time of Concentration	0.005 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	140.00 ft
Is Paved?	False
Slope	0.005 ft/ft
Average Velocity	1.14 ft/s
Segment Time of Concentration	0.034 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	143.00 ft
Is Paved?	False
Slope	0.022 ft/ft
Average Velocity	2.39 ft/s
Segment Time of Concentration	0.017 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.056 hours

Return Event: 2 years
Storm Event: 2

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-9 Imp
Scenario: 2 year

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 Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.005 ft/ft
2 Year 24 Hour Depth	3.5 in
Average Velocity	0.10 ft/s
Segment Time of Concentration	0.272 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	180.00 ft
Is Paved?	False
Slope	0.020 ft/ft
Average Velocity	2.28 ft/s
Segment Time of Concentration	0.022 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.294 hours

Post Current Tc

Subsection: Time of Concentration Calculations
Label: PDA-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

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 Dev Current Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-1 Perv	2 year	2	8,000	24.000	0.00
PDA-1 Perv	10 year	10	231,000	12.500	0.02
PDA-1 Perv	100 year	100	1,396,000	12.100	0.34
PDA-1 Imp	2 year	2	1,391,000	12.100	0.52
PDA-1 Imp	10 year	10	2,284,000	12.100	0.83
PDA-1 Imp	100 year	100	4,145,000	12.100	1.45
PDA-2 Perv	2 year	2	3,366,000	12.650	0.26
PDA-2 Perv	10 year	10	10,628,000	12.450	1.20
PDA-2 Perv	100 year	100	31,975,000	12.350	4.28
PDA-4 Perv	2 year	2	353,000	12.100	0.09
PDA-4 Perv	10 year	10	958,000	12.100	0.32
PDA-4 Perv	100 year	100	2,606,000	12.100	0.91
PDA-5 Perv	2 year	2	1,060,000	12.200	0.18
PDA-5 Perv	10 year	10	2,874,000	12.150	0.62
PDA-5 Perv	100 year	100	7,820,000	12.150	1.86
PDA-6 Perv	2 year	2	18,000	24.000	0.00
PDA-6 Perv	10 year	10	557,000	12.550	0.03
PDA-6 Perv	100 year	100	3,374,000	12.200	0.62
PDA-7 Perv	2 year	2	27,000	24.050	0.00
PDA-7 Perv	10 year	10	836,000	13.000	0.04
PDA-7 Perv	100 year	100	5,061,000	12.350	0.63
PDA-8 Perv	2 year	2	3,000	24.050	0.00
PDA-8 Perv	10 year	10	96,000	12.900	0.01
PDA-8 Perv	100 year	100	582,000	12.250	0.09
PDA-2 Imp	2 year	2	10,134,000	12.100	3.88
PDA-2 Imp	10 year	10	17,244,000	12.100	6.37
PDA-2 Imp	100 year	100	32,246,000	12.100	11.40
PDA-9 Perv	2 year	2	494,000	13.350	0.02
PDA-9 Perv	10 year	10	2,585,000	12.500	0.25
PDA-9 Perv	100 year	100	10,079,000	12.300	1.53
PDA-9 Imp	2 year	2	6,166,000	12.100	1.86
PDA-9 Imp	10 year	10	9,556,000	12.100	2.83
PDA-9 Imp	100 year	100	16,535,000	12.100	4.82
PDA-10 Imp	2 year	2	18,022,000	12.100	5.60
PDA-10 Imp	10 year	10	27,933,000	12.100	8.52
PDA-10 Imp	100 year	100	48,330,000	12.100	14.52
PDA-10 Perv	2 year	2	51,000	24.050	0.00
PDA-10 Perv	10 year	10	1,576,000	13.000	0.08
PDA-10 Perv	100 year	100	9,541,000	12.350	1.21
PDA-7 Imp	2 year	2	1,186,000	12.150	0.27
PDA-7 Imp	10 year	10	1,838,000	12.150	0.41
PDA-7 Imp	100 year	100	3,180,000	12.150	0.69
PDA-13 Imp	2 year	2	21,243,000	12.100	6.51

Post Dev Current Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-13 Imp	10 year	10	33,079,000	12.100	9.92
PDA-13 Imp	100 year	100	57,234,000	12.100	16.90
PDA-13 Perv	2 year	2	2,690,000	12.300	0.31
PDA-13 Perv	10 year	10	8,493,000	12.200	1.66
PDA-13 Perv	100 year	100	25,553,000	12.150	5.81
PDA-11 Imp	2 year	2	20,275,000	12.100	5.62
PDA-11 Imp	10 year	10	31,425,000	12.100	8.56
PDA-11 Imp	100 year	100	54,372,000	12.100	14.59
PDA-11 Perv	2 year	2	21,000	24.050	0.00
PDA-11 Perv	10 year	10	644,000	12.950	0.04
PDA-11 Perv	100 year	100	3,898,000	12.300	0.54
PDA-12 Imp	2 year	2	22,649,000	12.100	7.70
PDA-12 Imp	10 year	10	35,103,000	12.100	11.73
PDA-12 Imp	100 year	100	60,736,000	12.100	19.97
PDA-12 Perv	2 year	2	35,000	24.050	0.00
PDA-12 Perv	10 year	10	1,067,000	12.950	0.06
PDA-12 Perv	100 year	100	6,457,000	12.300	0.89

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
POI 2	2 year	2	0.000	0.000	0.00
POI 2	10 year	10	0.000	0.000	0.00
POI 2	100 year	100	0.000	0.000	0.00
POI 3	2 year	2	1,060,000	12.250	0.17
POI 3	10 year	10	2,874,000	12.200	0.62
POI 3	100 year	100	7,820,000	12.200	1.82
POI 4	2 year	2	1,216,000	12.150	0.27
POI 4	10 year	10	8,838,000	12.150	0.41
POI 4	100 year	100	42,901,000	12.550	3.40
POI-5	2 year	2	6,660,000	12.100	1.86
POI-5	10 year	10	12,141,000	12.100	2.88
POI-5	100 year	100	26,614,000	12.100	5.67
J-1	2 year	2	26,543,000	13.900	0.64
J-1	10 year	10	50,393,000	13.800	1.51
J-1	100 year	100	110,990,000	12.650	5.36

Pond Summary

Post Dev Current Rainfall

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
Pond 1 (IN)	2 year	2	1,399,000	12.100	0.52	(N/A)	(N/A)
Pond 1 (OUT)	2 year	2	287,000	12.100	0.31	118.69	7,370,000
Pond 1 (Reverse)	2 year	2	-2,000	13.700	-0.01	(N/A)	(N/A)
Pond 1 (IN)	10 year	10	2,515,000	12.100	0.83	(N/A)	(N/A)
Pond 1 (OUT)	10 year	10	283,000	11.950	0.33	118.77	8,305,000
Pond 1 (Reverse)	10 year	10	0,000	13.500	0.00	(N/A)	(N/A)
Pond 1 (IN)	100 year	100	5,542,000	12.100	1.79	(N/A)	(N/A)
Pond 1 (OUT)	100 year	100	552,000	12.100	0.50	119.00	11,028,000
Pond 2 (IN)	2 year	2	40,688,000	12.100	4.51	(N/A)	(N/A)
Pond 2 (OUT)	2 year	2	0,000	0.000	0.00	118.84	41,240,000
Pond 2 (IN)	10 year	10	79,512,000	12.100	7.95	(N/A)	(N/A)
Pond 2 (OUT)	10 year	10	0,000	0.000	0.00	119.05	80,049,000
Pond 2 (IN)	100 year	100	178,382,000	12.100	16.91	(N/A)	(N/A)
Pond 2 (OUT)	100 year	100	0,000	0.000	0.00	119.33	178,929,000
Pond 5 (IN)	2 year	2	1,060,000	12.200	0.18	(N/A)	(N/A)
Pond 5 (OUT)	2 year	2	1,060,000	12.250	0.17	121.80	0,000
Pond 5 (IN)	10 year	10	2,874,000	12.150	0.62	(N/A)	(N/A)
Pond 5 (OUT)	10 year	10	2,874,000	12.200	0.62	121.81	1,000
Pond 5 (IN)	100 year	100	7,820,000	12.150	1.86	(N/A)	(N/A)
Pond 5 (OUT)	100 year	100	7,820,000	12.200	1.82	121.84	17,000
Pond 6 (IN)	2 year	2	18,000	24.000	0.00	(N/A)	(N/A)
Pond 6 (OUT)	2 year	2	0,000	0.000	0.00	119.81	0,000
Pond 6 (IN)	10 year	10	557,000	12.550	0.03	(N/A)	(N/A)
Pond 6 (OUT)	10 year	10	0,000	0.000	0.00	119.92	401,000
Pond 6 (IN)	100 year	100	3,374,000	12.200	0.62	(N/A)	(N/A)
Pond 6 (OUT)	100 year	100	0,000	0.000	0.00	120.05	3,373,000
BI04 (IN)	2 year	2	18,074,000	12.100	5.60	(N/A)	(N/A)
BI04 (OUT)	2 year	2	0,000	0.000	0.00	123.73	18,072,000
BI04 (IN)	10 year	10	29,509,000	12.100	8.52	(N/A)	(N/A)

Post Dev Current Rainfall

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
BI04 (OUT)	10 year	10	6,068,000	17.350	0.19	124.04	24,425,000
BI04 (IN)	100 year	100	57,871,000	12.100	15.02	(N/A)	(N/A)
BI04 (OUT)	100 year	100	34,078,000	12.750	2.60	124.44	32,763,000
BI01 (IN)	2 year	2	24,033,000	12.100	6.63	(N/A)	(N/A)
BI01 (OUT)	2 year	2	9,377,000	12.050	2.19	122.63	9,440,000
BI01 (IN)	10 year	10	41,573,000	12.100	11.16	(N/A)	(N/A)
BI01 (OUT)	10 year	10	10,587,000	12.100	3.04	123.08	14,961,000
BI01 (IN)	100 year	100	82,787,000	12.100	21.74	(N/A)	(N/A)
BI01 (OUT)	100 year	100	21,590,000	12.100	15.71	123.69	23,229,000
BI02 (IN)	2 year	2	39,556,000	12.050	6.69	(N/A)	(N/A)
BI02 (OUT)	2 year	2	26,543,000	13.900	0.64	122.63	18,610,000
BI02 (IN)	10 year	10	65,495,000	12.100	12.24	(N/A)	(N/A)
BI02 (OUT)	10 year	10	50,393,000	13.800	1.51	123.08	29,369,000
BI02 (IN)	100 year	100	132,925,000	12.100	32.81	(N/A)	(N/A)
BI02 (OUT)	100 year	100	110,990,000	12.650	5.36	123.69	44,977,000
BI03 (IN)	2 year	2	22,684,000	12.100	7.70	(N/A)	(N/A)
BI03 (OUT)	2 year	2	9,882,000	13.500	0.37	122.85	16,204,000
BI03 (IN)	10 year	10	36,170,000	12.100	11.73	(N/A)	(N/A)
BI03 (OUT)	10 year	10	22,838,000	12.700	1.28	123.22	22,413,000
BI03 (IN)	100 year	100	67,193,000	12.100	20.40	(N/A)	(N/A)
BI03 (OUT)	100 year	100	53,065,000	12.700	2.76	124.02	37,080,000

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 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)	0.52 ft³/s

Drainage Area	
SCS CN (Composite)	93.000
Area (User Defined)	0.140 acres
Maximum Retention (Previous)	0.8 in
Maximum Retention (Previous, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	2.7 in
Runoff Volume (Previous)	1,389,862 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,391,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.63 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.83 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.83 ft³/s

Drainage Area	
SCS CN (Composite)	93.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	0.8 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.5 in
Runoff Volume (Pervious)	2,283.219 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,284.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.63 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Post Dev Current Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 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)	1.45 ft³/s

Drainage Area	
SCS CN (Composite)	93.000
Area (User Defined)	0.140 acres
Maximum Retention (Previous)	0.8 in
Maximum Retention (Previous, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	8.2 in
Runoff Volume (Previous)	4,144.764 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,145,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.63 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.067 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.009 hours
Time to Peak (Computed)	24,002 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24,000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39,000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	7.512 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.067 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.37 ft³/s
Unit peak time, Tp	0.045 hours
Unit receding limb, Tr	0.393 hours
Total unit time, Tb	0.438 hours

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.067 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.519 hours
Flow (Peak, Computed)	0.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.500 hours
Flow (Peak Interpolated Output)	0.02 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	230,687 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	231,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.067 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.37 ft³/s
Unit peak time, Tp	0.045 hours
Unit receding limb, Tr	0.393 hours
Total unit time, Tb	0.438 hours

Post Dev Current Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.067 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.009 hours
Time to Peak (Computed)	12.126 hours
Flow (Peak, Computed)	0.37 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.34 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6 in
Runoff Volume (Pervious)	1,396,247 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,396,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.067 hours
Computational Time Increment	0.009 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.37 ft³/s
Unit peak time, Tp	0.045 hours
Unit receding limb, Tr	0.393 hours
Total unit time, Tb	0.438 hours

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	1.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.104 hours
Flow (Peak, Computed)	5.63 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.60 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.3 in
Runoff Volume (Pervious)	18,023,080 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	18,022,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	20.38 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.289 hours
Total unit time, Tb	0.322 hours

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	1.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.104 hours
Flow (Peak, Computed)	8.57 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	8.52 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	27,934,089 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	27,933,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	20.38 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.289 hours
Total unit time, Tb	0.322 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-10 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	1.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.104 hours
Flow (Peak, Computed)	14.60 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	14.52 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.8 in
Runoff Volume (Pervious)	48,332.229 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	48,330,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-10 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	20.38 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.289 hours
Total unit time, Tb	0.322 hours

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.281 hours
Area (User Defined)	1.640 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	24.030 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24.050 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.640 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	51.389 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	51,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.281 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.86 ft³/s
Unit peak time, Tp	0.187 hours
Unit receding limb, Tr	1.647 hours
Total unit time, Tb	1.834 hours

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.281 hours
Area (User Defined)	1.640 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	13.026 hours
Flow (Peak, Computed)	0.08 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	13.000 hours
Flow (Peak Interpolated Output)	0.08 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.640 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	1,576.360 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,576,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.281 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.86 ft³/s
Unit peak time, Tp	0.187 hours
Unit receding limb, Tr	1.647 hours
Total unit time, Tb	1.834 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-10 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.281 hours
Area (User Defined)	1.640 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.352 hours
Flow (Peak, Computed)	1.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	1.21 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.640 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6 in
Runoff Volume (Pervious)	9,541.021 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	9,541,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.281 hours
Computational Time Increment	0.037 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-10 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.86 ft³/s
Unit peak time, Tp	0.187 hours
Unit receding limb, Tr	1.647 hours
Total unit time, Tb	1.834 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.073 hours
Area (User Defined)	1.710 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	12.112 hours
Flow (Peak, Computed)	5.74 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.62 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.710 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.3 in
Runoff Volume (Pervious)	20,275,968 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	20,275,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.073 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.42 ft³/s
Unit peak time, Tp	0.049 hours
Unit receding limb, Tr	0.430 hours
Total unit time, Tb	0.479 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.073 hours
Area (User Defined)	1.710 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	12.112 hours
Flow (Peak, Computed)	8.74 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	8.56 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.710 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	31,425.854 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	31,425,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.073 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.42 ft³/s
Unit peak time, Tp	0.049 hours
Unit receding limb, Tr	0.430 hours
Total unit time, Tb	0.479 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.073 hours
Area (User Defined)	1.710 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	12.112 hours
Flow (Peak, Computed)	14.89 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	14.59 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.710 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.8 in
Runoff Volume (Pervious)	54,373.759 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	54,372,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.073 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.42 ft³/s
Unit peak time, Tp	0.049 hours
Unit receding limb, Tr	0.430 hours
Total unit time, Tb	0.479 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.241 hours
Area (User Defined)	0.670 acres

Computational Time Increment	0.032 hours
Time to Peak (Computed)	24.020 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24.050 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.670 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	20,994 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	21,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.241 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.84 ft³/s
Unit peak time, Tp	0.161 hours
Unit receding limb, Tr	1.415 hours
Total unit time, Tb	1.576 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.241 hours
Area (User Defined)	0.670 acres

Computational Time Increment	0.032 hours
Time to Peak (Computed)	12.959 hours
Flow (Peak, Computed)	0.04 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.950 hours
Flow (Peak Interpolated Output)	0.04 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.670 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	644.001 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	644.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.241 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.84 ft³/s
Unit peak time, Tp	0.161 hours
Unit receding limb, Tr	1.415 hours
Total unit time, Tb	1.576 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.241 hours
Area (User Defined)	0.670 acres

Computational Time Increment	0.032 hours
Time to Peak (Computed)	12.283 hours
Flow (Peak, Computed)	0.54 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	0.54 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.670 acres
Maximum Retention (Previous)	15.6 in
Maximum Retention (Previous, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	1.6 in
Runoff Volume (Previous)	3,897.856 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,898,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.241 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.84 ft³/s
Unit peak time, Tp	0.161 hours
Unit receding limb, Tr	1.415 hours
Total unit time, Tb	1.576 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	1.910 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	7.71 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.70 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.910 acres
Maximum Retention (Previous)	0.2 in
Maximum Retention (Previous, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	3.3 in
Runoff Volume (Previous)	22,647.409 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	22,649,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	51.40 ft³/s
Unit peak time, Tp	0.016 hours
Unit receding limb, Tr	0.144 hours
Total unit time, Tb	0.160 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	1.910 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	11.73 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	11.73 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.910 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	35,101.388 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	35,103.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	51.40 ft³/s
Unit peak time, Tp	0.016 hours
Unit receding limb, Tr	0.144 hours
Total unit time, Tb	0.160 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.025 hours
Area (User Defined)	1.910 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	19.97 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	19.97 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.910 acres
Maximum Retention (Previous)	0.2 in
Maximum Retention (Previous, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	8.8 in
Runoff Volume (Previous)	60,733.258 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	60,736,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.025 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	51.40 ft³/s
Unit peak time, Tp	0.016 hours
Unit receding limb, Tr	0.144 hours
Total unit time, Tb	0.160 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.241 hours
Area (User Defined)	1.110 acres

Computational Time Increment	0.032 hours
Time to Peak (Computed)	24.034 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24.050 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.110 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	34,780 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	35,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.241 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.04 ft³/s
Unit peak time, Tp	0.161 hours
Unit receding limb, Tr	1.416 hours
Total unit time, Tb	1.577 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.241 hours
Area (User Defined)	1.110 acres

Computational Time Increment	0.032 hours
Time to Peak (Computed)	12.934 hours
Flow (Peak, Computed)	0.06 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.950 hours
Flow (Peak Interpolated Output)	0.06 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.110 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	1,066,927 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,067,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.241 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.04 ft³/s
Unit peak time, Tp	0.161 hours
Unit receding limb, Tr	1.416 hours
Total unit time, Tb	1.577 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.241 hours
Area (User Defined)	1.110 acres

Computational Time Increment	0.032 hours
Time to Peak (Computed)	12.290 hours
Flow (Peak, Computed)	0.89 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	0.89 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.110 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6 in
Runoff Volume (Pervious)	6,457.643 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,457,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.241 hours
Computational Time Increment	0.032 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.04 ft³/s
Unit peak time, Tp	0.161 hours
Unit receding limb, Tr	1.416 hours
Total unit time, Tb	1.577 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	1,800 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.110 hours
Flow (Peak, Computed)	6.55 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.51 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1,800 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.3 in
Runoff Volume (Pervious)	21,343.117 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	21,343,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	22.43 ft³/s
Unit peak time, Tp	0.035 hours
Unit receding limb, Tr	0.311 hours
Total unit time, Tb	0.347 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	1,800 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.110 hours
Flow (Peak, Computed)	9.97 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	9.92 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1,800 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	33,079,846 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	33,079,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	22.43 ft³/s
Unit peak time, Tp	0.035 hours
Unit receding limb, Tr	0.311 hours
Total unit time, Tb	0.347 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	1,800 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.110 hours
Flow (Peak, Computed)	16.99 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	16.90 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1,800 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.8 in
Runoff Volume (Pervious)	57,235.535 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	57,234,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	22.43 ft³/s
Unit peak time, Tp	0.035 hours
Unit receding limb, Tr	0.311 hours
Total unit time, Tb	0.347 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.158 hours
Area (User Defined)	1.950 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.309 hours
Flow (Peak, Computed)	0.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	0.31 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	1.950 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.4 in
Runoff Volume (Pervious)	2,690,420 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,690,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.158 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	8.17 ft³/s
Unit peak time, Tp	0.105 hours
Unit receding limb, Tr	0.926 hours
Total unit time, Tb	1.031 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.158 hours
Area (User Defined)	1.950 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.183 hours
Flow (Peak, Computed)	1.68 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	1.66 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	1.950 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2 in
Runoff Volume (Pervious)	8,493.826 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,493,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.158 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	8.17 ft³/s
Unit peak time, Tp	0.105 hours
Unit receding limb, Tr	0.926 hours
Total unit time, Tb	1.031 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.158 hours
Area (User Defined)	1.950 acres

Computational Time Increment	0.021 hours
Time to Peak (Computed)	12.162 hours
Flow (Peak, Computed)	5.90 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	5.81 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	1.950 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.6 in
Runoff Volume (Pervious)	25,554.425 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	25,553,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.158 hours
Computational Time Increment	0.021 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	8.17 ft³/s
Unit peak time, Tp	0.105 hours
Unit receding limb, Tr	0.926 hours
Total unit time, Tb	1.031 hours

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.028 hours
Area (User Defined)	1.140 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	3.88 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.88 ft³/s

Drainage Area	
SCS CN (Composite)	90.000
Area (User Defined)	1.140 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.4 in
Runoff Volume (Pervious)	10,130.120 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	10,134.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.028 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	27.05 ft³/s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.163 hours
Total unit time, Tb	0.182 hours

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.028 hours
Area (User Defined)	1.140 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	6.38 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.37 ft³/s

Drainage Area	
SCS CN (Composite)	90.000
Area (User Defined)	1.140 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.2 in
Runoff Volume (Pervious)	17,240.339 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	17,244.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.028 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	27.05 ft³/s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.163 hours
Total unit time, Tb	0.182 hours

Post Dev Current Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.028 hours
Area (User Defined)	1.140 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	11.41 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	11.40 ft³/s

Drainage Area	
SCS CN (Composite)	90.000
Area (User Defined)	1.140 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.8 in
Runoff Volume (Pervious)	32,242.821 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	32,246.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.028 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	27.05 ft³/s
Unit peak time, Tp	0.019 hours
Unit receding limb, Tr	0.163 hours
Total unit time, Tb	0.182 hours

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.427 hours
Area (User Defined)	2.440 acres

Computational Time Increment	0.057 hours
Time to Peak (Computed)	12.691 hours
Flow (Peak, Computed)	0.26 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.650 hours
Flow (Peak Interpolated Output)	0.26 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	2.440 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.4 in
Runoff Volume (Pervious)	3,366.475 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,366,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.427 hours
Computational Time Increment	0.057 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.78 ft³/s
Unit peak time, Tp	0.285 hours
Unit receding limb, Tr	2.504 hours
Total unit time, Tb	2.789 hours

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.427 hours
Area (User Defined)	2.440 acres

Computational Time Increment	0.057 hours
Time to Peak (Computed)	12.463 hours
Flow (Peak, Computed)	1.20 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.450 hours
Flow (Peak Interpolated Output)	1.20 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	2.440 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2 in
Runoff Volume (Pervious)	10,628.172 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	10,628,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.427 hours
Computational Time Increment	0.057 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.78 ft³/s
Unit peak time, Tp	0.285 hours
Unit receding limb, Tr	2.504 hours
Total unit time, Tb	2.789 hours

Post Dev Current Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.427 hours
Area (User Defined)	2.440 acres

Computational Time Increment	0.057 hours
Time to Peak (Computed)	12.350 hours
Flow (Peak, Computed)	4.28 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	4.28 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	2.440 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.6 in
Runoff Volume (Pervious)	31,975,793 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	31,975,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.427 hours
Computational Time Increment	0.057 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

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

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.78 ft³/s
Unit peak time, Tp	0.285 hours
Unit receding limb, Tr	2.504 hours
Total unit time, Tb	2.789 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	0.170 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.117 hours
Flow (Peak, Computed)	0.10 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)	61.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.6 in
Runoff Volume (Pervious)	353.453 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	353.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.06 ft³/s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.319 hours
Total unit time, Tb	0.356 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	0.170 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.110 hours
Flow (Peak, Computed)	0.33 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.32 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6 in
Runoff Volume (Pervious)	958.169 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	958,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.06 ft³/s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.319 hours
Total unit time, Tb	0.356 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.054 hours
Area (User Defined)	0.170 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.110 hours
Flow (Peak, Computed)	0.93 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)	61.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.2 in
Runoff Volume (Pervious)	2,606,540 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,606,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.054 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.06 ft³/s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.319 hours
Total unit time, Tb	0.356 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.152 hours
Area (User Defined)	0.510 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.182 hours
Flow (Peak, Computed)	0.18 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.18 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.510 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.6 in
Runoff Volume (Pervious)	1,060.359 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,060,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.152 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.22 ft³/s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.892 hours
Total unit time, Tb	0.993 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.152 hours
Area (User Defined)	0.510 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.162 hours
Flow (Peak, Computed)	0.63 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.62 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.510 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6 in
Runoff Volume (Pervious)	2,874,506 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,874,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.152 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.22 ft³/s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.892 hours
Total unit time, Tb	0.993 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.152 hours
Area (User Defined)	0.510 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.162 hours
Flow (Peak, Computed)	1.87 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.86 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.510 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.2 in
Runoff Volume (Pervious)	7,819,620 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	7,820,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.152 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.22 ft³/s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.892 hours
Total unit time, Tb	0.993 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.138 hours
Area (User Defined)	0.580 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	24,008 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24,000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39,000
Area (User Defined)	0.580 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	18,170 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	18,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.138 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.78 ft³/s
Unit peak time, Tp	0.092 hours
Unit receding limb, Tr	0.809 hours
Total unit time, Tb	0.901 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.138 hours
Area (User Defined)	0.580 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.565 hours
Flow (Peak, Computed)	0.03 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.550 hours
Flow (Peak Interpolated Output)	0.03 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.580 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	557.493 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	557,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.138 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.78 ft³/s
Unit peak time, Tp	0.092 hours
Unit receding limb, Tr	0.809 hours
Total unit time, Tb	0.901 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.138 hours
Area (User Defined)	0.580 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.179 hours
Flow (Peak, Computed)	0.63 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.62 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.580 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6 in
Runoff Volume (Pervious)	3,374,262 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,374,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.138 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.78 ft³/s
Unit peak time, Tp	0.092 hours
Unit receding limb, Tr	0.809 hours
Total unit time, Tb	0.901 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.137 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.141 hours
Flow (Peak, Computed)	0.27 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.27 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Previous)	0.2 in
Maximum Retention (Previous, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	3.3 in
Runoff Volume (Previous)	1,185.729 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,186,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.137 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.48 ft³/s
Unit peak time, Tp	0.092 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	0.897 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.137 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.141 hours
Flow (Peak, Computed)	0.41 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)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	1,837.769 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,838,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.137 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.48 ft³/s
Unit peak time, Tp	0.092 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	0.897 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.137 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.141 hours
Flow (Peak, Computed)	0.70 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.69 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Previous)	0.2 in
Maximum Retention (Previous, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	8.8 in
Runoff Volume (Previous)	3,179,752 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,180,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.137 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.48 ft³/s
Unit peak time, Tp	0.092 hours
Unit receding limb, Tr	0.806 hours
Total unit time, Tb	0.897 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.287 hours
Area (User Defined)	0.870 acres

Computational Time Increment	0.038 hours
Time to Peak (Computed)	24.017 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24.050 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.870 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	27.261 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	27,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.287 hours
Computational Time Increment	0.038 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.00 ft³/s
Unit peak time, Tp	0.192 hours
Unit receding limb, Tr	1.685 hours
Total unit time, Tb	1.877 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.287 hours
Area (User Defined)	0.870 acres

Computational Time Increment	0.038 hours
Time to Peak (Computed)	13.023 hours
Flow (Peak, Computed)	0.04 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	13.000 hours
Flow (Peak Interpolated Output)	0.04 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.870 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	836.240 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	836.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.287 hours
Computational Time Increment	0.038 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.00 ft³/s
Unit peak time, Tp	0.192 hours
Unit receding limb, Tr	1.685 hours
Total unit time, Tb	1.877 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.287 hours
Area (User Defined)	0.870 acres

Computational Time Increment	0.038 hours
Time to Peak (Computed)	12.334 hours
Flow (Peak, Computed)	0.63 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	0.63 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.870 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6 in
Runoff Volume (Pervious)	5,061.395 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,061,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.287 hours
Computational Time Increment	0.038 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.00 ft³/s
Unit peak time, Tp	0.192 hours
Unit receding limb, Tr	1.685 hours
Total unit time, Tb	1.877 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.214 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.029 hours
Time to Peak (Computed)	24.019 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24.050 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	3.133 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.214 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.31 ft³/s
Unit peak time, Tp	0.143 hours
Unit receding limb, Tr	1.258 hours
Total unit time, Tb	1.401 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.214 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.896 hours
Flow (Peak, Computed)	0.01 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.900 hours
Flow (Peak Interpolated Output)	0.01 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.3 in
Runoff Volume (Pervious)	96.120 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	96.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.214 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.31 ft³/s
Unit peak time, Tp	0.143 hours
Unit receding limb, Tr	1.258 hours
Total unit time, Tb	1.401 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.214 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.267 hours
Flow (Peak, Computed)	0.09 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.09 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.6 in
Runoff Volume (Pervious)	581.770 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	582,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.214 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.31 ft³/s
Unit peak time, Tp	0.143 hours
Unit receding limb, Tr	1.258 hours
Total unit time, Tb	1.401 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.108 hours
Flow (Peak, Computed)	1.87 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.86 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.3 in
Runoff Volume (Pervious)	6,165,791 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,166,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.13 ft³/s
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.329 hours
Total unit time, Tb	0.366 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.108 hours
Flow (Peak, Computed)	2.86 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.83 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	9,556,401 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	9,556,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.13 ft³/s
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.329 hours
Total unit time, Tb	0.366 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.108 hours
Flow (Peak, Computed)	4.86 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.82 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.8 in
Runoff Volume (Pervious)	16,534.710 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	16,535,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.13 ft³/s
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.329 hours
Total unit time, Tb	0.366 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.5 in
Time of Concentration (Composite)	0.294 hours
Area (User Defined)	1.100 acres

Computational Time Increment	0.039 hours
Time to Peak (Computed)	13.357 hours
Flow (Peak, Computed)	0.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	13.350 hours
Flow (Peak Interpolated Output)	0.02 ft³/s

Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	1.100 acres
Maximum Retention (Pervious)	11.3 in
Maximum Retention (Pervious, 20 percent)	2.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.1 in
Runoff Volume (Pervious)	494.045 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	494,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.294 hours
Computational Time Increment	0.039 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.48 ft³/s
Unit peak time, Tp	0.196 hours
Unit receding limb, Tr	1.723 hours
Total unit time, Tb	1.919 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	5.3 in
Time of Concentration (Composite)	0.294 hours
Area (User Defined)	1.100 acres

Computational Time Increment	0.039 hours
Time to Peak (Computed)	12.495 hours
Flow (Peak, Computed)	0.25 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.500 hours
Flow (Peak Interpolated Output)	0.25 ft³/s

Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	1.100 acres
Maximum Retention (Previous)	11.3 in
Maximum Retention (Previous, 20 percent)	2.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	0.6 in
Runoff Volume (Previous)	2,584,646 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,585,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.294 hours
Computational Time Increment	0.039 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.48 ft³/s
Unit peak time, Tp	0.196 hours
Unit receding limb, Tr	1.723 hours
Total unit time, Tb	1.919 hours

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.294 hours
Area (User Defined)	1.100 acres

Computational Time Increment	0.039 hours
Time to Peak (Computed)	12.299 hours
Flow (Peak, Computed)	1.53 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	1.53 ft³/s

Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	1.100 acres
Maximum Retention (Pervious)	11.3 in
Maximum Retention (Pervious, 20 percent)	2.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	10,079,444 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	10,079,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.294 hours
Computational Time Increment	0.039 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Current Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 100 year

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.48 ft³/s
Unit peak time, Tp	0.196 hours
Unit receding limb, Tr	1.723 hours
Total unit time, Tb	1.919 hours

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CN Area Collection - PDA-1 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Areas - Paved; open ditches (w/right-of-way) - Soil D	93.000	0.140	0.0	0.0

CN Area Collection - PDA-1 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.240	0.0	0.0

CN Area Collection - PDA-2 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Areas - Dirt (w/ right-of-way) - Soil B	82.000	0.580	0.0	0.0
Impervious Building	98.000	0.560	0.0	0.0

CN Area Collection - PDA-2 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.560	0.0	0.0
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	1.620	0.0	0.0
Small grain - Straight row (SR), good - Soil A	63.000	0.260	0.0	0.0

CN Area Collection - PDA-4 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.170	0.0	0.0

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CN Area Collection - PDA-5 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.510	0.0	0.0

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CN Area Collection - PDA-6 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns, parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.580	0.0	0.0

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CN Area Collection - PDA-7 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Building	98.000		0.080	0.0
Impervious	98.000		0.020	0.0

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CN Area Collection - PDA-7 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.870	0.0	0.0

CN Area Collection - PDA-8 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.100	0.0	0.0

CN Area Collection - PDA-9 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.690	0.0	0.0
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	0.410	0.0	0.0

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CN Area Collection - PDA-9 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Building	98.000	0.520	0.0	0.0

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CN Area Collection - PDA-10 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Building	98.000	1.520	0.0	0.0

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CN Area Collection - PDA-10 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	1.640	0.0	0.0

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CN Area Collection - PDA-11 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Building	98.000	1.710	0.0	0.0

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CN Area Collection - PDA-11 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.670	0.0	0.0

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CN Area Collection - PDA-12 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious vehicular	98.000	1.180	0.0	0.0
Impervious building	98.000	0.650	0.0	0.0
Impervious sidewalk	98.000	0.080	0.0	0.0

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CN Area Collection - PDA-12 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.560	0.0	0.0
Basin Area A soils	39.000	0.550	0.0	0.0

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CN Area Collection - PDA-13 Imp (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Impervious Vehicular	98.000	0.660	0.0	0.0
Impervious Building	98.000	1.100	0.0	0.0
Impervious sidewalk	98.000	0.040	0.0	0.0

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CN Area Collection - PDA-13 Perv (Catchment)

Description	CN	Area (acres)	Percent Connected Impervious Area (%)	Percent Unconnected Impervious Area (%)
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil A	39.000	0.450	0.0	0.0
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil B	61.000	1.500	0.0	0.0

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Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.011
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	1.10 ft/s
Segment Time of Concentration	0.005 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.020 hours

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

=== SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{*}(2/3)) * (S^{*}-.0.5)) / n$$
$$(Lf / V) / 3600$$

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
S= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-1 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	20.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.09 ft/s
Segment Time of Concentration	0.063 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.063 hours
-----------------------------------	-------------

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-1 Perv
Scenario: 2yr projected

=== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{*}(2/3)) * (S^{*}*.0.5)) / n}$$

$$(Lf / V) / 3600$$

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

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-10 Imp
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	72.00 ft
Manning's n	0.011
Slope	0.250 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	3.91 ft/s
Segment Time of Concentration	0.005 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	163.00 ft
Is Paved?	False
Slope	0.005 ft/ft
Average Velocity	1.14 ft/s
Segment Time of Concentration	0.040 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	49.00 ft
Is Paved?	False
Slope	0.040 ft/ft
Average Velocity	3.23 ft/s
Segment Time of Concentration	0.004 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.049 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-10 Imp
Scenario: 2yr 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:
 $V = 20.3282 * (Sf**0.5)$

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-10 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.005 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.258 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	83.00 ft
Is Paved?	False
Slope	0.026 ft/ft
Average Velocity	2.60 ft/s
Segment Time of Concentration	0.009 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.266 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-10 Perv
Scenario: 2yr 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 =
$$V = 16.1345 * (Sf**0.5)$$

Paved Surface:
$$V = 20.3282 * (Sf**0.5)$$

Where:

$$(Lf / V) / 3600$$

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-11 Imp
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	70.00 ft
Manning's n	0.011
Slope	0.250 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	3.88 ft/s
Segment Time of Concentration	0.005 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	56.00 ft
Is Paved?	False
Slope	0.020 ft/ft
Average Velocity	2.28 ft/s
Segment Time of Concentration	0.007 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	814.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.061 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.073 hours

Subsection: Time of Concentration Calculations
Label: PDA-11 Imp
Scenario: 2yr projected

SCS Channel Flow

Tc =
$$R = Qa / Wp$$
$$V = (1.49 * (R^{.48} * (2/3)) * (S^{.48} * 0.5)) / n$$
$$(Lf / V) / 3600$$

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 =
$$\text{Unpaved surface:}$$
$$V = 16.1345 * (S^{.48} * 0.5)$$
$$\text{Paved Surface:}$$
$$V = 20.3282 * (S^{.48} * 0.5)$$

Where:

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

SCS TR-55 Sheet Flow

Tc =
$$(0.007 * ((n * Lf^{.48} * 0.8)) / ((P^{.48} * 0.5) * (S^{.48} * 0.4)))$$

Where:

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-11 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	92.00 ft
Manning's n	0.150
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.14 ft/s
Segment Time of Concentration	0.183 hours
Segment #2: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	644.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.048 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.231 hours

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-11 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

==== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{2/3}) * (S^{*0.5})) / n}$$

(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 =
$$(0.007 * ((n * Lf)^{0.8})) / ((p^{0.5}) * (S^{*0.4}))$$

Where:

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-12 Imp
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.015 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	1.35 ft/s
Segment Time of Concentration	0.021 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	25.00 ft
Is Paved?	True
Slope	0.020 ft/ft
Average Velocity	2.87 ft/s
Segment Time of Concentration	0.002 hours

Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	14.00 ft
Is Paved?	False
Slope	0.250 ft/ft
Average Velocity	8.07 ft/s
Segment Time of Concentration	0.000 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.023 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-12 Imp
Scenario: 2yr 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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-12 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.018 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.225 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	30.00 ft
Is Paved?	True
Slope	0.010 ft/ft
Average Velocity	2.03 ft/s
Segment Time of Concentration	0.004 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.229 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-12 Perv
Scenario: 2yr projected

=== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{.486} * (2/3)) * (S^{.486} * 0.5)) / n}$$

(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 =
$$\frac{\text{Unpaved surface:}}{V = 16.1345 * (S^{.486} * 0.5)}$$

Paved Surface:
$$V = 20.3282 * (S^{.486} * 0.5)$$

(Lf / V) / 3600

Where:

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

Tc Post Projected

Subsection: Time of Concentration Calculations

Label: PDA-13 Imp

Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	1.03 ft/s
Segment Time of Concentration	0.027 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	125.00 ft
Is Paved?	True
Slope	0.012 ft/ft
Average Velocity	2.23 ft/s
Segment Time of Concentration	0.016 hours

Segment #3: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	118.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.009 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.052 hours

Return Event: 2 years

Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations

Label: PDA-13 Imp

Scenario: 2yr projected

==== SCS Channel Flow

Tc =	$R = Qa / Wp$ $V = (1.49 * (R^{.48} * (2/3)) * (S^{.48} * 0.5)) / n$ $(Lf / V) / 3600$
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: $V = 16.1345 * (S^{.48} * 0.5)$ Paved Surface: $V = 20.3282 * (S^{.48} * 0.5)$
Where:	$(Lf / V) / 3600$ V= Velocity, ft/sec Sf= Slope, ft/ft Tc= Time of concentration, hours Lf= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =	$(0.007 * ((n * Lf)^{.48} * 0.8)) / ((P^{.48} * 0.5) * (S^{.48} * 0.4))$
Where:	Tc= Time of concentration, hours n= Manning's n Lf= Flow length, feet P= 24hr Rain depth, inches Sf= Slope, %

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-13 Perv
Scenario: 2yr projected

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	57.00 ft
Manning's n	0.150
Slope	0.010 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.13 ft/s
Segment Time of Concentration	0.124 hours
Segment #2: TR-55 Channel Flow	
Flow Area	1.2 ft²
Hydraulic Length	351.00 ft
Manning's n	0.013
Slope	0.005 ft/ft
Wetted Perimeter	3.90 ft
Average Velocity	3.69 ft/s
Segment Time of Concentration	0.026 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.151 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-13 Perv
Scenario: 2yr projected

==== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{**}(2/3)) * (S^{**}0.5)) / n}$$

Where:

R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
S= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
L= Flow length, feet

==== SCS TR-55 Sheet Flow

Tc =
$$(0.007 * ((n * Lf)^{**0.8})) / ((p^{**0.5}) * (S^{**0.4}))$$

Where:

Tc= Time of concentration, hours
n= Manning's n
L= Flow length, feet
P= 24hr Rain depth, inches
S= Slope, %

Return Event: 2 years
Storm Event: 2

Tc Post Projected

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

Return Event: 2 years
Storm Event: 2

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.011
Slope	0.008 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	1.05 ft/s
Segment Time of Concentration	0.026 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.026 hours

Tc Post Projected

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

Return Event: 2 years
Storm Event: 2

=== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{*}(2/3)) * (S^{*}-.0.5)) / n}$$

(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

Tc Post Projected

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

Time of Concentration Results	
Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.017 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.230 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	1,009.00 ft
Is Paved?	False
Slope	0.009 ft/ft
Average Velocity	1.52 ft/s
Segment Time of Concentration	0.184 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.414 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-4 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	22.00 ft
Manning's n	0.150
Slope	0.200 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.35 ft/s
Segment Time of Concentration	0.018 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	238.00 ft
Is Paved?	False
Slope	0.013 ft/ft
Average Velocity	1.84 ft/s
Segment Time of Concentration	0.036 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.053 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-4 Perv
Scenario: 2yr projected

=== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{*}(2/3)) * (S^{*}*.0.5)) / n}$$

$$(Lf / V) / 3600$$

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

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

$$(Lf / V) / 3600$$

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-5 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.060
Slope	0.007 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.26 ft/s
Segment Time of Concentration	0.108 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	285.00 ft
Is Paved?	False
Slope	0.017 ft/ft
Average Velocity	2.09 ft/s
Segment Time of Concentration	0.038 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.146 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-5 Perv
Scenario: 2yr projected

=== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{.486} * (2/3)) * (S^{.486} * 0.5)) / n}$$

$$(Lf / V) / 3600$$

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 =
$$\frac{\text{Unpaved surface:}}{V = 16.1345 * (S^{.486} * 0.5)}$$

$$\frac{\text{Paved Surface:}}{V = 20.3282 * (S^{.486} * 0.5)}$$

$$(Lf / V) / 3600$$

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-6 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	95.00 ft
Manning's n	0.150
Slope	0.300 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.55 ft/s
Segment Time of Concentration	0.048 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	591.00 ft
Is Paved?	False
Slope	0.014 ft/ft
Average Velocity	1.88 ft/s
Segment Time of Concentration	0.087 hours

Time of Concentration (Composite)	
Time of Concentration (Composite)	0.135 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-6 Perv
Scenario: 2yr projected

=== SCS Channel Flow

Tc =
$$\frac{R = Qa / Wp}{V = (1.49 * (R^{.486} * (2/3)) * (S^{.486} * 0.5)) / n}$$

$$(Lf / V) / 3600$$

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 =
$$\frac{\text{Unpaved surface:}}{V = 16.1345 * (S^{.486} * 0.5)}$$

$$\frac{\text{Paved Surface:}}{V = 20.3282 * (S^{.486} * 0.5)}$$

$$(Lf / V) / 3600$$

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-7 Imp
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	21.00 ft
Manning's n	0.011
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	1.11 ft/s
Segment Time of Concentration	0.005 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	451.00 ft
Is Paved?	False
Slope	0.020 ft/ft
Average Velocity	2.28 ft/s
Segment Time of Concentration	0.055 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	346.00 ft
Is Paved?	False
Slope	0.006 ft/ft
Average Velocity	1.25 ft/s
Segment Time of Concentration	0.077 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.137 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-7 Imp
Scenario: 2yr 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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-7 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.020 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.19 ft/s
Segment Time of Concentration	0.148 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	590.00 ft
Is Paved?	False
Slope	0.006 ft/ft
Average Velocity	1.25 ft/s
Segment Time of Concentration	0.131 hours

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

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-7 Perv
Scenario: 2yr 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 =
$$V = 16.1345 * (Sf**0.5)$$

Paved Surface:
$$V = 20.3282 * (Sf**0.5)$$

Where:

$$(Lf / V) / 3600$$

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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-8 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.050 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.27 ft/s
Segment Time of Concentration	0.103 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	193.00 ft
Is Paved?	False
Slope	0.032 ft/ft
Average Velocity	2.89 ft/s
Segment Time of Concentration	0.019 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	360.00 ft
Is Paved?	False
Slope	0.005 ft/ft
Average Velocity	1.14 ft/s
Segment Time of Concentration	0.088 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.209 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-8 Perv
Scenario: 2yr 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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-9 Imp
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	72.00 ft
Manning's n	0.011
Slope	0.250 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	3.91 ft/s
Segment Time of Concentration	0.005 hours
Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	140.00 ft
Is Paved?	False
Slope	0.005 ft/ft
Average Velocity	1.14 ft/s
Segment Time of Concentration	0.034 hours
Segment #3: TR-55 Shallow Concentrated Flow	
Hydraulic Length	143.00 ft
Is Paved?	False
Slope	0.022 ft/ft
Average Velocity	2.39 ft/s
Segment Time of Concentration	0.017 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.056 hours

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-9 Imp
Scenario: 2yr 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

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-9 Perv
Scenario: 2yr projected

Time of Concentration Results

Segment #1: TR-55 Sheet Flow	
Hydraulic Length	100.00 ft
Manning's n	0.150
Slope	0.005 ft/ft
2 Year 24 Hour Depth	3.9 in
Average Velocity	0.11 ft/s
Segment Time of Concentration	0.258 hours

Segment #2: TR-55 Shallow Concentrated Flow	
Hydraulic Length	180.00 ft
Is Paved?	False
Slope	0.020 ft/ft
Average Velocity	2.28 ft/s
Segment Time of Concentration	0.022 hours

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

Return Event: 2 years
Storm Event: 2

Tc Post Projected

Subsection: Time of Concentration Calculations
Label: PDA-9 Perv
Scenario: 2yr 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:
 $V = 20.3282 * (Sf**0.5)$

Where:

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

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.60 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.59 ft³/s

Drainage Area	
SCS CN (Composite)	93.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	0.8 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	1,591.848 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,593,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.63 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.98 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.98 ft³/s

Drainage Area	
SCS CN (Composite)	93.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	0.8 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4 in
Runoff Volume (Pervious)	2,739,165 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,740,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.63 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	1.96 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.95 ft³/s

Drainage Area	
SCS CN (Composite)	93.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	0.8 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.2 in
Runoff Volume (Pervious)	5,687.546 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	5,688,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.63 ft³/s
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	24,007 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24,000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39,000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	32.422 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	32,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.50 ft³/s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.372 hours
Total unit time, Tb	0.414 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.223 hours
Flow (Peak, Computed)	0.05 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.05 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	441.931 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	442,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.50 ft³/s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.372 hours
Total unit time, Tb	0.414 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	12.113 hours
Flow (Peak, Computed)	0.90 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.86 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	2,823.215 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,822.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-1 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.50 ft³/s
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.372 hours
Total unit time, Tb	0.414 hours

Post Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	1.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.106 hours
Flow (Peak, Computed)	6.31 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.28 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	20,278,980 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	20,279,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	20.49 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.288 hours
Total unit time, Tb	0.320 hours

Post Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	1.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.106 hours
Flow (Peak, Computed)	10.08 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	10.02 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	32,949,104 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	32,950,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	20.49 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.288 hours
Total unit time, Tb	0.320 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-10 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	1.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.106 hours
Flow (Peak, Computed)	19.61 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	19.50 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.8 in
Runoff Volume (Pervious)	65,154,645 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	65,156,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-10 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	20.49 ft³/s
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.288 hours
Total unit time, Tb	0.320 hours

Post Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.266 hours
Area (User Defined)	1.640 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	20.673 hours
Flow (Peak, Computed)	0.01 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.01 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.640 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	221.554 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	222,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.266 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.07 ft³/s
Unit peak time, Tp	0.178 hours
Unit receding limb, Tr	1.563 hours
Total unit time, Tb	1.741 hours

Post Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.266 hours
Area (User Defined)	1.640 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.574 hours
Flow (Peak, Computed)	0.24 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.600 hours
Flow (Peak Interpolated Output)	0.24 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.640 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	3,019.859 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,020,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.266 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.07 ft³/s
Unit peak time, Tp	0.178 hours
Unit receding limb, Tr	1.563 hours
Total unit time, Tb	1.741 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-10 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.266 hours
Area (User Defined)	1.640 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	12.255 hours
Flow (Peak, Computed)	3.05 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	3.04 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.640 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	19,291,976 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	19,292,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.266 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-10 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	4.07 ft³/s
Unit peak time, Tp	0.178 hours
Unit receding limb, Tr	1.563 hours
Total unit time, Tb	1.741 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.073 hours
Area (User Defined)	1.710 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	12.115 hours
Flow (Peak, Computed)	6.43 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.29 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.710 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	22,813.856 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	22,813,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.073 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.48 ft³/s
Unit peak time, Tp	0.049 hours
Unit receding limb, Tr	0.428 hours
Total unit time, Tb	0.477 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.073 hours
Area (User Defined)	1.710 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	12.115 hours
Flow (Peak, Computed)	10.27 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	10.05 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.710 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	37,067.743 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	37,067,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.073 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.48 ft³/s
Unit peak time, Tp	0.049 hours
Unit receding limb, Tr	0.428 hours
Total unit time, Tb	0.477 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.073 hours
Area (User Defined)	1.710 acres

Computational Time Increment	0.010 hours
Time to Peak (Computed)	12.115 hours
Flow (Peak, Computed)	19.97 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	19.56 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.710 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.8 in
Runoff Volume (Pervious)	73,298,973 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	73,298,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.073 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	15.48 ft³/s
Unit peak time, Tp	0.049 hours
Unit receding limb, Tr	0.428 hours
Total unit time, Tb	0.477 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.231 hours
Area (User Defined)	0.670 acres

Computational Time Increment	0.031 hours
Time to Peak (Computed)	20.637 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.670 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	90.515 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	91,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.231 hours
Computational Time Increment	0.031 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.92 ft³/s
Unit peak time, Tp	0.154 hours
Unit receding limb, Tr	1.355 hours
Total unit time, Tb	1.509 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.231 hours
Area (User Defined)	0.670 acres

Computational Time Increment	0.031 hours
Time to Peak (Computed)	12.567 hours
Flow (Peak, Computed)	0.10 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.550 hours
Flow (Peak Interpolated Output)	0.10 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.670 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	1,233.723 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,234,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.231 hours
Computational Time Increment	0.031 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.92 ft³/s
Unit peak time, Tp	0.154 hours
Unit receding limb, Tr	1.355 hours
Total unit time, Tb	1.509 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.231 hours
Area (User Defined)	0.670 acres

Computational Time Increment	0.031 hours
Time to Peak (Computed)	12.228 hours
Flow (Peak, Computed)	1.35 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	1.34 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.670 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	7,881.478 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	7,882,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.231 hours
Computational Time Increment	0.031 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-11 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	1.92 ft³/s
Unit peak time, Tp	0.154 hours
Unit receding limb, Tr	1.355 hours
Total unit time, Tb	1.509 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.023 hours
Area (User Defined)	1.910 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	8.64 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	8.64 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.910 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	25,482.129 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	25,485,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.023 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	53.91 ft³/s
Unit peak time, Tp	0.016 hours
Unit receding limb, Tr	0.137 hours
Total unit time, Tb	0.153 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.023 hours
Area (User Defined)	1.910 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	13.79 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	13.79 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.910 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	41,403.139 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	41,406,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.023 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	53.91 ft³/s
Unit peak time, Tp	0.016 hours
Unit receding limb, Tr	0.137 hours
Total unit time, Tb	0.153 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.023 hours
Area (User Defined)	1.910 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	26.82 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	26.82 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.910 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.8 in
Runoff Volume (Pervious)	81,871.957 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	81,876,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.023 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	53.91 ft³/s
Unit peak time, Tp	0.016 hours
Unit receding limb, Tr	0.137 hours
Total unit time, Tb	0.153 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.229 hours
Area (User Defined)	1.110 acres

Computational Time Increment	0.031 hours
Time to Peak (Computed)	20.654 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.110 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	149,955 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	150,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.229 hours
Computational Time Increment	0.031 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.21 ft³/s
Unit peak time, Tp	0.153 hours
Unit receding limb, Tr	1.342 hours
Total unit time, Tb	1.495 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.229 hours
Area (User Defined)	1.110 acres

Computational Time Increment	0.031 hours
Time to Peak (Computed)	12.569 hours
Flow (Peak, Computed)	0.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.550 hours
Flow (Peak Interpolated Output)	0.17 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.110 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	2,043.929 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,044,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.229 hours
Computational Time Increment	0.031 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.21 ft³/s
Unit peak time, Tp	0.153 hours
Unit receding limb, Tr	1.342 hours
Total unit time, Tb	1.495 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.229 hours
Area (User Defined)	1.110 acres

Computational Time Increment	0.031 hours
Time to Peak (Computed)	12.234 hours
Flow (Peak, Computed)	2.25 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	2.24 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.110 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	13,057.374 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,057,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.229 hours
Computational Time Increment	0.031 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-12 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.21 ft³/s
Unit peak time, Tp	0.153 hours
Unit receding limb, Tr	1.342 hours
Total unit time, Tb	1.495 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.052 hours
Area (User Defined)	1,800 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.103 hours
Flow (Peak, Computed)	7.38 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.34 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1,800 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	24,014,580 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	24,014,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.052 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	23.08 ft³/s
Unit peak time, Tp	0.034 hours
Unit receding limb, Tr	0.302 hours
Total unit time, Tb	0.337 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.052 hours
Area (User Defined)	1,800 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.103 hours
Flow (Peak, Computed)	11.78 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	11.72 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1,800 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	39,018,673 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	39,017,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.052 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	23.08 ft³/s
Unit peak time, Tp	0.034 hours
Unit receding limb, Tr	0.302 hours
Total unit time, Tb	0.337 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.052 hours
Area (User Defined)	1,800 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.103 hours
Flow (Peak, Computed)	22.92 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	22.80 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1,800 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.8 in
Runoff Volume (Pervious)	77,156.812 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	77,154,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.052 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	23.08 ft³/s
Unit peak time, Tp	0.034 hours
Unit receding limb, Tr	0.302 hours
Total unit time, Tb	0.337 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.151 hours
Area (User Defined)	1,950 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.232 hours
Flow (Peak, Computed)	0.55 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.55 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	1,950 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	3,796,856 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,797,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.151 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	8.54 ft³/s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.885 hours
Total unit time, Tb	0.986 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.151 hours
Area (User Defined)	1,950 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.172 hours
Flow (Peak, Computed)	2.65 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	2.61 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	1,950 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.7 in
Runoff Volume (Pervious)	12,188,455 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,188,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.151 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	8.54 ft³/s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.885 hours
Total unit time, Tb	0.986 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.151 hours
Area (User Defined)	1.950 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.151 hours
Flow (Peak, Computed)	10.17 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	10.15 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	1.950 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	42,388.449 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	42,388,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.151 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-13 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	8.54 ft³/s
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.885 hours
Total unit time, Tb	0.986 hours

Post Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	1.140 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	4.48 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.47 ft³/s

Drainage Area	
SCS CN (Composite)	90.000
Area (User Defined)	1.140 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.8 in
Runoff Volume (Pervious)	11,727.328 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	11,732,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	28.55 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.155 hours
Total unit time, Tb	0.172 hours

Post Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	1.140 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	7.66 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.66 ft³/s

Drainage Area	
SCS CN (Composite)	90.000
Area (User Defined)	1.140 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.1 in
Runoff Volume (Pervious)	20,900,286 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	20,905,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	28.55 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.155 hours
Total unit time, Tb	0.172 hours

Post Dev Projected Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	1.140 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	15.57 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	15.57 ft³/s

Drainage Area	
SCS CN (Composite)	90.000
Area (User Defined)	1.140 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	10.8 in
Runoff Volume (Pervious)	44,742,553 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	44,747,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	28.55 ft³/s
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.155 hours
Total unit time, Tb	0.172 hours

Post Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.414 hours
Area (User Defined)	2.440 acres

Computational Time Increment	0.055 hours
Time to Peak (Computed)	12.587 hours
Flow (Peak, Computed)	0.43 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.600 hours
Flow (Peak Interpolated Output)	0.43 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	2.440 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	4,750,946 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,751,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.414 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.90 ft³/s
Unit peak time, Tp	0.276 hours
Unit receding limb, Tr	2.429 hours
Total unit time, Tb	2.705 hours

Post Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.414 hours
Area (User Defined)	2.440 acres

Computational Time Increment	0.055 hours
Time to Peak (Computed)	12.366 hours
Flow (Peak, Computed)	1.88 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.400 hours
Flow (Peak Interpolated Output)	1.88 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	2.440 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.7 in
Runoff Volume (Pervious)	15,251.195 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	15,252,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.414 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.90 ft³/s
Unit peak time, Tp	0.276 hours
Unit receding limb, Tr	2.429 hours
Total unit time, Tb	2.705 hours

Post Dev Projected Rainfall

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

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.414 hours
Area (User Defined)	2.440 acres

Computational Time Increment	0.055 hours
Time to Peak (Computed)	12.366 hours
Flow (Peak, Computed)	7.44 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	7.44 ft³/s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	2.440 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	53,039.910 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	53,045.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.414 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

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

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	3.90 ft³/s
Unit peak time, Tp	0.276 hours
Unit receding limb, Tr	2.429 hours
Total unit time, Tb	2.705 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.170 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.114 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)	61.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.8 in
Runoff Volume (Pervious)	473,440 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	473,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.10 ft³/s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.314 hours
Total unit time, Tb	0.349 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.170 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.114 hours
Flow (Peak, Computed)	0.47 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.46 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.1 in
Runoff Volume (Pervious)	1,325,109 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,325,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.10 ft³/s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.314 hours
Total unit time, Tb	0.349 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.170 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.107 hours
Flow (Peak, Computed)	1.48 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.46 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.8 in
Runoff Volume (Pervious)	4,171.143 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,171.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.10 ft³/s
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.314 hours
Total unit time, Tb	0.349 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.146 hours
Area (User Defined)	0.510 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	0.27 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.27 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.510 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.8 in
Runoff Volume (Pervious)	1,420.319 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,420,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.146 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.31 ft³/s
Unit peak time, Tp	0.097 hours
Unit receding limb, Tr	0.857 hours
Total unit time, Tb	0.954 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.146 hours
Area (User Defined)	0.510 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	0.93 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.92 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.510 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.1 in
Runoff Volume (Pervious)	3,975.327 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,975.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.146 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.31 ft³/s
Unit peak time, Tp	0.097 hours
Unit receding limb, Tr	0.857 hours
Total unit time, Tb	0.954 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.146 hours
Area (User Defined)	0.510 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.148 hours
Flow (Peak, Computed)	3.06 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	3.06 ft³/s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.510 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.8 in
Runoff Volume (Pervious)	12,513.430 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	12,513,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.146 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.31 ft³/s
Unit peak time, Tp	0.097 hours
Unit receding limb, Tr	0.857 hours
Total unit time, Tb	0.954 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.135 hours
Area (User Defined)	0.580 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	20.585 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.600 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.580 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	78.355 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	78,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.135 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.83 ft³/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.794 hours
Total unit time, Tb	0.884 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.135 hours
Area (User Defined)	0.580 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.358 hours
Flow (Peak, Computed)	0.10 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	0.10 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.580 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	1,067.999 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,068,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.135 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.83 ft³/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.794 hours
Total unit time, Tb	0.884 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.135 hours
Area (User Defined)	0.580 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.160 hours
Flow (Peak, Computed)	1.56 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.54 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.580 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	6,822.772 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,822.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.135 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.83 ft³/s
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.794 hours
Total unit time, Tb	0.884 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.137 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.152 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)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	1,334,143 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,334,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.137 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.48 ft³/s
Unit peak time, Tp	0.091 hours
Unit receding limb, Tr	0.804 hours
Total unit time, Tb	0.895 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.137 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	0.48 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.48 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	2,167.704 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,168,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.137 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.48 ft³/s
Unit peak time, Tp	0.091 hours
Unit receding limb, Tr	0.804 hours
Total unit time, Tb	0.895 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.137 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.018 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	0.93 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	0.93 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.8 in
Runoff Volume (Pervious)	4,286,490 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,287,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.137 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.48 ft³/s
Unit peak time, Tp	0.091 hours
Unit receding limb, Tr	0.804 hours
Total unit time, Tb	0.895 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	0.870 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	20.650 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.870 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	117.534 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	118,000 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

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.06 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.637 hours
Total unit time, Tb	1.823 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	0.870 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.613 hours
Flow (Peak, Computed)	0.12 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.600 hours
Flow (Peak Interpolated Output)	0.12 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.870 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	1,601.998 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,602,000 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

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.06 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.637 hours
Total unit time, Tb	1.823 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	0.870 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.278 hours
Flow (Peak, Computed)	1.58 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.300 hours
Flow (Peak Interpolated Output)	1.57 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.870 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	10,234,158 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	10,234,000 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

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.06 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.637 hours
Total unit time, Tb	1.823 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.209 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.028 hours
Time to Peak (Computed)	20.625 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.100 acres
Maximum Retention (Previous)	15.6 in
Maximum Retention (Previous, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Previous)	0.0 in
Runoff Volume (Previous)	13.509 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	14,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.209 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.32 ft³/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	1.225 hours
Total unit time, Tb	1.364 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.209 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.553 hours
Flow (Peak, Computed)	0.02 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.550 hours
Flow (Peak Interpolated Output)	0.02 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	184.138 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	184.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.209 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.32 ft³/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	1.225 hours
Total unit time, Tb	1.364 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.209 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.028 hours
Time to Peak (Computed)	12.219 hours
Flow (Peak, Computed)	0.21 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.21 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.2 in
Runoff Volume (Pervious)	1,176.340 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,176.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.209 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	0.32 ft³/s
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	1.225 hours
Total unit time, Tb	1.364 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.106 hours
Flow (Peak, Computed)	2.10 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.08 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	6,937.546 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,938,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.16 ft³/s
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.327 hours
Total unit time, Tb	0.365 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.106 hours
Flow (Peak, Computed)	3.35 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.32 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	11,272.062 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	11,272.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.16 ft³/s
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.327 hours
Total unit time, Tb	0.365 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.520 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.106 hours
Flow (Peak, Computed)	6.52 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.46 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.520 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	11.8 in
Runoff Volume (Pervious)	22,289,748 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	22,290,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	6.16 ft³/s
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.327 hours
Total unit time, Tb	0.365 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	1.100 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.967 hours
Flow (Peak, Computed)	0.05 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.950 hours
Flow (Peak Interpolated Output)	0.05 ft³/s

Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	1.100 acres
Maximum Retention (Pervious)	11.3 in
Maximum Retention (Pervious, 20 percent)	2.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.2 in
Runoff Volume (Pervious)	845.447 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	845.000 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

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.60 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.639 hours
Total unit time, Tb	1.826 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Storm Event	10
Return Event	10 years
Duration	26,000 hours
Depth	6.2 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	1.100 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.333 hours
Flow (Peak, Computed)	0.50 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.350 hours
Flow (Peak Interpolated Output)	0.50 ft³/s

Drainage Area	
SCS CN (Composite)	47,000
Area (User Defined)	1.100 acres
Maximum Retention (Pervious)	11.3 in
Maximum Retention (Pervious, 20 percent)	2.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	4,100.019 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,100,000 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

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.60 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.639 hours
Total unit time, Tb	1.826 hours

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Storm Event	100
Return Event	100 years
Duration	26,000 hours
Depth	12.1 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	1.100 acres

Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.259 hours
Flow (Peak, Computed)	3.07 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	3.06 ft³/s

Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	1.100 acres
Maximum Retention (Pervious)	11.3 in
Maximum Retention (Pervious, 20 percent)	2.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.6 in
Runoff Volume (Pervious)	18,179,797 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	18,179,000 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

Post Dev Projected Rainfall

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

SCS Unit Hydrograph Parameters	
Unit peak, qp	2.60 ft³/s
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.639 hours
Total unit time, Tb	1.826 hours

Appendix C:
Basin Routings 2-, 10, & 100-year Storm
Current and Projected Rainfall





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Outlet Control Structure

Subsection: Outlet Input Data

Label: O-1

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Requested Pond Water Surface Elevations

Minimum (Headwater)	118.03 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	121.50 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Culvert-Circular	Culvert - 1	Forward	TW	118.03	121.50
Irregular Weir	LP road	Forward	TW	120.26	121.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

Outlet Control Structure

Subsection: Outlet Input Data

Label: O-1

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Structure ID: LP road

Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	121.50
85.00	121.00
139.00	120.60
189.00	120.60
249.00	120.26
299.00	120.56
349.00	120.82
399.00	121.20
450.00	121.50

Lowest Elevation 120.26 ft
Weir Coefficient 3.00 (ft^{0.5})/s

Structure ID: Culvert - 1
Structure Type: Culvert-Circular

Number of Barrels	1
Diameter	12.0 in
Length	23.00 ft
Length (Computed Barrel)	23.01 ft
Slope (Computed)	0.025 ft/ft

Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.031
Kr	0.000
Convergence Tolerance	0.00 ft

Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.083
T2 ratio (HW/D)	1.185
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

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

Outlet Control Structure

Subsection: Outlet Input Data

Label: O-1

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

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

T1 Elevation	119.11 ft	T1 Flow	2.75 ft ³ /s
T2 Elevation	119.21 ft	T2 Flow	3.14 ft ³ /s

Outlet Control Structure

Subsection: Outlet Input Data

Label: O-2

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Requested Pond Water Surface Elevations

Minimum (Headwater)	117.46 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	121.15 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir	Weir - 1	Forward	TW	120.46	121.15
Irregular Weir	Weir - 2	Forward	TW	120.90	121.15
Tailwater Settings	Tailwater			(N/A)	(N/A)

Outlet Control Structure

Subsection: Outlet Input Data

Label: O-2

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Structure ID: Weir - 1

Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	121.15
32.00	120.72
130.00	120.62
177.00	120.46
273.00	120.65
320.00	120.65
387.00	121.15

Lowest Elevation 120.46 ft

Weir Coefficient 3.00 (ft^{0.5})/s

Structure ID: Weir - 2

Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	121.15
5.00	120.92
45.00	120.90
85.00	120.93
90.00	121.15

Lowest Elevation 120.90 ft

Weir Coefficient 3.00 (ft^{0.5})/s

Structure ID: TW

Structure Type: TW Setup, DS Channel

Tailwater Type Free Outfall

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Outlet Control Structure

Subsection: Outlet Input Data

Label: O-5

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Requested Pond Water Surface Elevations

Minimum (Headwater)	121.80 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	122.10 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	Weir - 1 Tailwater	Forward	TW	121.80 (N/A)	122.10 (N/A)

Outlet Control Structure

Subsection: Outlet Input Data

Label: O-5

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Structure ID: Weir - 1

Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	122.10
32.00	122.00
53.00	121.90
92.00	121.80
182.00	121.90
304.00	122.10

Lowest Elevation 121.80 ft

Weir Coefficient 3.00 (ft^{0.5})/s

Structure ID: TW

Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall
----------------	--------------

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Outlet Control Structure

Subsection: Outlet Input Data

Label: O-6

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Requested Pond Water Surface Elevations

Minimum (Headwater)	119.80 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	120.80 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	Weir - 1 Tailwater	Forward	TW	120.50 (N/A)	120.80 (N/A)

Outlet Control Structure

Subsection: Outlet Input Data

Label: O-6

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Structure ID: Weir - 1

Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	120.80
162.00	120.50
242.00	120.80

Lowest Elevation 120.50 ft

Weir Coefficient 3.00 (ft^{0.5})/s

Structure ID: TW

Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall
----------------	--------------

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Outlet Control Structure

Subsection: Outlet Input Data

Label: OCS-1

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Requested Pond Water Surface Elevations

Minimum (Headwater)	121.50 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	125.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Irregular Weir Tailwater Settings	Weir - 1 Tailwater	Forward	TW	122.10 (N/A)	125.00 (N/A)

Outlet Control Structure

Subsection: Outlet Input Data

Label: OCS-1

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Structure ID: Weir - 1

Structure Type: Irregular Weir

Station (ft)	Elevation (ft)
0.00	125.00
8.00	122.10
78.00	122.10
94.00	125.00

Lowest Elevation 122.10 ft
Weir Coefficient 3.00 (ft^{0.5})/s

Outlet Control Structure

Subsection: Outlet Input Data

Label: OCS-2

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Requested Pond Water Surface Elevations

Minimum (Headwater)	121.50 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	125.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	orifice - 1	Forward	TW	122.10	125.00
Rectangular Weir	Weir - 2	Forward	TW	123.00	125.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Outlet Control Structure

Subsection: Outlet Input Data

Label: OCS-2

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Structure ID: orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	122.10 ft
Orifice Diameter	8.0 in
Orifice Coefficient	0.600

Structure ID: Weir - 2	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	123.00 ft
Weir Length	2.00 ft
Weir Coefficient	3.00 (ft ^{0.5})/s

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall

Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Outlet Control Structure

Subsection: Outlet Input Data

Label: OCS-3

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Requested Pond Water Surface Elevations

Minimum (Headwater)	121.50 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	125.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular Tailwater Settings	Orifice 3 Tailwater	Forward	TW	122.50 (N/A)	125.00 (N/A)

Outlet Control Structure

Subsection: Outlet Input Data

Label: OCS-3

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Structure ID: Orifice 3	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	122.50 ft
Orifice Diameter	10.0 in
Orifice Coefficient	0.600
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Downstream Channel
Catalog Conduit	15 inch
Channel Slope	0.005 ft/ft
Channel Invert Elevation	121.50 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
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Outlet Control Structure

Subsection: Outlet Input Data

Label: OCS-4

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Requested Pond Water Surface Elevations

Minimum (Headwater)	122.80 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	127.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	orifice 1	Forward	TW	123.80	127.00
Rectangular Weir	Weir 2	Forward	TW	124.00	127.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Outlet Control Structure

Subsection: Outlet Input Data

Label: OCS-4

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Structure ID: orifice 1	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	123.80 ft
Orifice Diameter	3.0 in
Orifice Coefficient	0.600
Structure ID: Weir 2	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	124.00 ft
Weir Length	2.75 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Pond Volumes

Subsection: Elevation-Area Volume Curve

Return Event: 2 years

Label: BIO1

Storm Event: 2

Scenario: 2 year

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft ³)	Volume (Total) (ft ³)
121.50	0.0	0.000	0.000	0.000	0.000
122.00	0.0	0.260	0.260	1,888.000	1,888.000
123.00	0.0	0.290	0.825	11,973.000	13,861.000
124.00	0.0	0.330	0.929	13,494.000	27,355.000
125.00	0.0	0.360	1.035	15,023.000	42,378.000

Pond Volumes

Subsection: Elevation-Area Volume Curve

Return Event: 2 years

Label: BIO2

Storm Event: 2

Scenario: 2 year

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft ³)	Volume (Total) (ft ³)
121.50	0.0	0.000	0.000	0.000	0.000
122.00	0.0	0.520	0.520	3,775.000	3,775.000
123.00	0.0	0.560	1.620	23,517.000	27,292.000
124.00	0.0	0.610	1.754	25,475.000	52,767.000
125.00	0.0	0.660	1.905	27,653.000	80,421.000

Pond Volumes

Subsection: Elevation-Area Volume Curve

Return Event: 2 years

Label: BIO3

Storm Event: 2

Scenario: 2 year

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft ³)	Volume (Total) (ft ³)
121.50	0.0	0.000	0.000	0.000	0.000
122.00	0.0	0.350	0.350	2,541.000	2,541.000
123.00	0.0	0.390	1.109	16,109.000	18,650.000
124.00	0.0	0.440	1.244	18,066.000	36,717.000
125.00	0.0	0.490	1.394	20,246.000	56,962.000

Pond Volumes

Subsection: Elevation-Area Volume Curve

Return Event: 2 years

Label: BIO4

Storm Event: 2

Scenario: 2 year

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft ³)	Volume (Total) (ft ³)
122.80	0.0	0.430	0.000	0.000	0.000
124.00	0.0	0.470	1.350	23,515.000	23,515.000
125.00	0.0	0.520	1.484	21,553.000	45,068.000
126.00	0.0	0.560	1.620	23,517.000	68,585.000
127.00	0.0	0.600	1.740	25,260.000	93,844.000

Pond Volumes

Subsection: Elevation-Area Volume Curve

Return Event: 2 years

Label: Pond 1

Storm Event: 2

Scenario: 2 year

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft ³)	Volume (Total) (ft ³)
118.03	0.0	0.000	0.000	0.000	0.000
119.00	0.0	0.760	0.769	10,828.000	10,828.000
120.00	0.0	1.250	2.985	43,338.000	54,166.000
120.65	0.0	1.300	3.825	36,098.000	90,264.000
121.00	0.0	2.020	4.940	25,108.000	115,372.000
121.50	0.0	2.600	6.912	50,179.000	165,551.000

Pond Volumes

Subsection: Elevation-Area Volume Curve

Return Event: 2 years

Label: Pond 2

Storm Event: 2

Scenario: 2 year

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft ³)	Volume (Total) (ft ³)
117.46	0.0	0.000	0.000	0.000	0.000
118.59	0.0	0.010	0.010	164.000	164.000
118.60	0.0	2.550	2.720	395.000	559.000
119.00	0.0	5.320	11.553	67,101.000	67,660.000
119.20	0.0	5.790	16.660	48,381.000	116,041.000
120.00	0.0	16.980	32.685	379,673.000	495,714.000
120.65	0.0	17.770	52.121	491,913.000	987,627.000
121.00	0.0	23.290	61.404	312,053.000	1,299,680.000
121.15	0.0	23.500	70.185	152,862.000	1,452,543.000

Pond Volumes

Subsection: Elevation-Area Volume Curve

Return Event: 2 years

Label: Pond 5

Storm Event: 2

Scenario: 2 year

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft ³)	Volume (Total) (ft ³)
121.80	0.0	0.000	0.000	0.000	0.000
122.00	0.0	0.620	0.620	1,800.000	1,800.000
122.10	0.0	0.630	1.875	2,722.000	4,523.000

Pond Volumes

Subsection: Elevation-Area Volume Curve

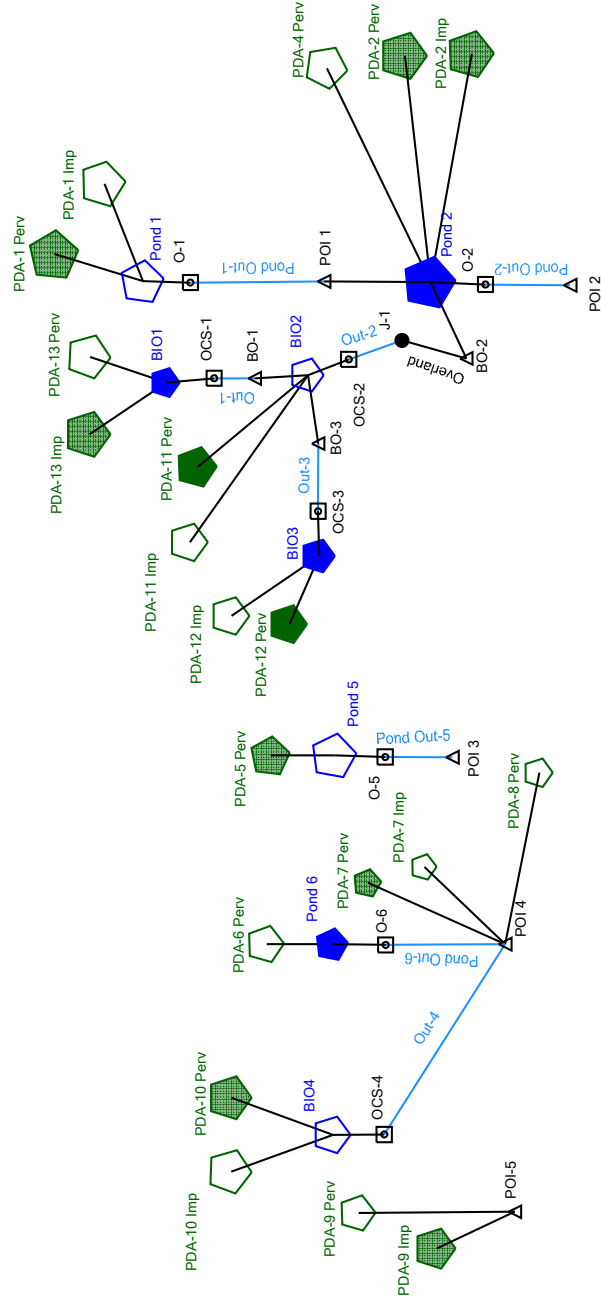
Return Event: 2 years

Label: Pond 6

Storm Event: 2

Scenario: 2 year

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ft ³)	Volume (Total) (ft ³)
119.80	0.0	0.000	0.000	0.000	0.000
120.00	0.0	0.640	0.640	1,859.000	1,859.000
120.80	0.0	0.660	1.950	22,650.000	24,509.000



BASIN ROUTINGS CURRENT RAINFALL

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Basin Routings Current Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-1 Perv	2 year	2	8,000	24.000	0.00
PDA-1 Perv	10 year	10	231,000	12.500	0.02
PDA-1 Perv	100 year	100	1,396,000	12.100	0.34
PDA-1 Imp	2 year	2	1,391,000	12.100	0.52
PDA-1 Imp	10 year	10	2,284,000	12.100	0.83
PDA-1 Imp	100 year	100	4,145,000	12.100	1.45
PDA-2 Perv	2 year	2	3,366,000	12.650	0.26
PDA-2 Perv	10 year	10	10,628,000	12.450	1.20
PDA-2 Perv	100 year	100	31,975,000	12.350	4.28
PDA-4 Perv	2 year	2	353,000	12.100	0.09
PDA-4 Perv	10 year	10	958,000	12.100	0.32
PDA-4 Perv	100 year	100	2,606,000	12.100	0.91
PDA-5 Perv	2 year	2	1,060,000	12.200	0.18
PDA-5 Perv	10 year	10	2,874,000	12.150	0.62
PDA-5 Perv	100 year	100	7,820,000	12.150	1.86
PDA-6 Perv	2 year	2	18,000	24.000	0.00
PDA-6 Perv	10 year	10	557,000	12.550	0.03
PDA-6 Perv	100 year	100	3,374,000	12.200	0.62
PDA-7 Perv	2 year	2	27,000	24.050	0.00
PDA-7 Perv	10 year	10	836,000	13.000	0.04
PDA-7 Perv	100 year	100	5,061,000	12.350	0.63
PDA-8 Perv	2 year	2	3,000	24.050	0.00
PDA-8 Perv	10 year	10	96,000	12.900	0.01
PDA-8 Perv	100 year	100	582,000	12.250	0.09
PDA-2 Imp	2 year	2	10,134,000	12.100	3.88
PDA-2 Imp	10 year	10	17,244,000	12.100	6.37
PDA-2 Imp	100 year	100	32,246,000	12.100	11.40
PDA-9 Perv	2 year	2	494,000	13.350	0.02
PDA-9 Perv	10 year	10	2,585,000	12.500	0.25
PDA-9 Perv	100 year	100	10,079,000	12.300	1.53
PDA-9 Imp	2 year	2	6,166,000	12.100	1.86
PDA-9 Imp	10 year	10	9,556,000	12.100	2.83
PDA-9 Imp	100 year	100	16,535,000	12.100	4.82
PDA-10 Imp	2 year	2	18,022,000	12.100	5.60
PDA-10 Imp	10 year	10	27,933,000	12.100	8.52
PDA-10 Imp	100 year	100	48,330,000	12.100	14.52
PDA-10 Perv	2 year	2	51,000	24.050	0.00
PDA-10 Perv	10 year	10	1,576,000	13.000	0.08
PDA-10 Perv	100 year	100	9,541,000	12.350	1.21
PDA-7 Imp	2 year	2	1,186,000	12.150	0.27
PDA-7 Imp	10 year	10	1,838,000	12.150	0.41
PDA-7 Imp	100 year	100	3,180,000	12.150	0.69
PDA-13 Imp	2 year	2	21,243,000	12.100	6.51

Basin Routings Current Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-13 Imp	10 year	10	33,079,000	12.100	9.92
PDA-13 Imp	100 year	100	57,234,000	12.100	16.90
PDA-13 Perv	2 year	2	2,690,000	12.300	0.31
PDA-13 Perv	10 year	10	8,493,000	12.200	1.66
PDA-13 Perv	100 year	100	25,553,000	12.150	5.81
PDA-11 Imp	2 year	2	20,275,000	12.100	5.62
PDA-11 Imp	10 year	10	31,425,000	12.100	8.56
PDA-11 Imp	100 year	100	54,372,000	12.100	14.59
PDA-11 Perv	2 year	2	21,000	24.050	0.00
PDA-11 Perv	10 year	10	644,000	12.950	0.04
PDA-11 Perv	100 year	100	3,898,000	12.300	0.54
PDA-12 Imp	2 year	2	22,649,000	12.100	7.70
PDA-12 Imp	10 year	10	35,103,000	12.100	11.73
PDA-12 Imp	100 year	100	60,736,000	12.100	19.97
PDA-12 Perv	2 year	2	35,000	24.050	0.00
PDA-12 Perv	10 year	10	1,067,000	12.950	0.06
PDA-12 Perv	100 year	100	6,457,000	12.300	0.89

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
POI 2	2 year	2	0.000	0.000	0.00
POI 2	10 year	10	0.000	0.000	0.00
POI 2	100 year	100	0.000	0.000	0.00
POI 3	2 year	2	1,060,000	12.250	0.17
POI 3	10 year	10	2,874,000	12.200	0.62
POI 3	100 year	100	7,820,000	12.200	1.82
POI 4	2 year	2	1,216,000	12.150	0.27
POI 4	10 year	10	8,838,000	12.150	0.41
POI 4	100 year	100	42,901,000	12.550	3.40
POI-5	2 year	2	6,660,000	12.100	1.86
POI-5	10 year	10	12,141,000	12.100	2.88
POI-5	100 year	100	26,614,000	12.100	5.67
J-1	2 year	2	26,543,000	13.900	0.64
J-1	10 year	10	50,393,000	13.800	1.51
J-1	100 year	100	110,990,000	12.650	5.36

Pond Summary

Basin Routings Current Rainfall

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
Pond 1 (IN)	2 year	2	1,399,000	12.100	0.52	(N/A)	(N/A)
Pond 1 (OUT)	2 year	2	287,000	12.100	0.31	118.69	7,370,000
Pond 1 (Reverse)	2 year	2	-2,000	13.700	-0.01	(N/A)	(N/A)
Pond 1 (IN)	10 year	10	2,515,000	12.100	0.83	(N/A)	(N/A)
Pond 1 (OUT)	10 year	10	283,000	11.950	0.33	118.77	8,305,000
Pond 1 (Reverse)	10 year	10	0,000	13.500	0.00	(N/A)	(N/A)
Pond 1 (IN)	100 year	100	5,542,000	12.100	1.79	(N/A)	(N/A)
Pond 1 (OUT)	100 year	100	552,000	12.100	0.50	119.00	11,028,000
Pond 2 (IN)	2 year	2	40,688,000	12.100	4.51	(N/A)	(N/A)
Pond 2 (OUT)	2 year	2	0,000	0.000	0.00	118.84	41,240,000
Pond 2 (IN)	10 year	10	79,512,000	12.100	7.95	(N/A)	(N/A)
Pond 2 (OUT)	10 year	10	0,000	0.000	0.00	119.05	80,049,000
Pond 2 (IN)	100 year	100	178,382,000	12.100	16.91	(N/A)	(N/A)
Pond 2 (OUT)	100 year	100	0,000	0.000	0.00	119.33	178,929,000
Pond 5 (IN)	2 year	2	1,060,000	12.200	0.18	(N/A)	(N/A)
Pond 5 (OUT)	2 year	2	1,060,000	12.250	0.17	121.80	0,000
Pond 5 (IN)	10 year	10	2,874,000	12.150	0.62	(N/A)	(N/A)
Pond 5 (OUT)	10 year	10	2,874,000	12.200	0.62	121.81	1,000
Pond 5 (IN)	100 year	100	7,820,000	12.150	1.86	(N/A)	(N/A)
Pond 5 (OUT)	100 year	100	7,820,000	12.200	1.82	121.84	17,000
Pond 6 (IN)	2 year	2	18,000	24.000	0.00	(N/A)	(N/A)
Pond 6 (OUT)	2 year	2	0,000	0.000	0.00	119.81	0,000
Pond 6 (IN)	10 year	10	557,000	12.550	0.03	(N/A)	(N/A)
Pond 6 (OUT)	10 year	10	0,000	0.000	0.00	119.92	401,000
Pond 6 (IN)	100 year	100	3,374,000	12.200	0.62	(N/A)	(N/A)
Pond 6 (OUT)	100 year	100	0,000	0.000	0.00	120.05	3,373,000
BI04 (IN)	2 year	2	18,074,000	12.100	5.60	(N/A)	(N/A)
BI04 (OUT)	2 year	2	0,000	0.000	0.00	123.73	18,072,000
BI04 (IN)	10 year	10	29,509,000	12.100	8.52	(N/A)	(N/A)

Basin Routings Current Rainfall

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
BI04 (OUT)	10 year	10	6,068,000	17.350	0.19	124.04	24,425,000
BI04 (IN)	100 year	100	57,871,000	12.100	15.02	(N/A)	(N/A)
BI04 (OUT)	100 year	100	34,078,000	12.750	2.60	124.44	32,763,000
BI01 (IN)	2 year	2	24,033,000	12.100	6.63	(N/A)	(N/A)
BI01 (OUT)	2 year	2	9,377,000	12.050	2.19	122.63	9,440,000
BI01 (IN)	10 year	10	41,573,000	12.100	11.16	(N/A)	(N/A)
BI01 (OUT)	10 year	10	10,587,000	12.100	3.04	123.08	14,961,000
BI01 (IN)	100 year	100	82,787,000	12.100	21.74	(N/A)	(N/A)
BI01 (OUT)	100 year	100	21,590,000	12.100	15.71	123.69	23,229,000
BI02 (IN)	2 year	2	39,556,000	12.050	6.69	(N/A)	(N/A)
BI02 (OUT)	2 year	2	26,543,000	13.900	0.64	122.63	18,610,000
BI02 (IN)	10 year	10	65,495,000	12.100	12.24	(N/A)	(N/A)
BI02 (OUT)	10 year	10	50,393,000	13.800	1.51	123.08	29,369,000
BI02 (IN)	100 year	100	132,925,000	12.100	32.81	(N/A)	(N/A)
BI02 (OUT)	100 year	100	110,990,000	12.650	5.36	123.69	44,977,000
BI03 (IN)	2 year	2	22,684,000	12.100	7.70	(N/A)	(N/A)
BI03 (OUT)	2 year	2	9,882,000	13.500	0.37	122.85	16,204,000
BI03 (IN)	10 year	10	36,170,000	12.100	11.73	(N/A)	(N/A)
BI03 (OUT)	10 year	10	22,838,000	12.700	1.28	123.22	22,413,000
BI03 (IN)	100 year	100	67,193,000	12.100	20.40	(N/A)	(N/A)
BI03 (OUT)	100 year	100	53,065,000	12.700	2.76	124.02	37,080,000

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak		Maximum Storage	
Peak (hours)		Elevation (ft)	
13.900		122.63	
13.900		9,440.000	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)		Time to Peak (hours)	
Flow (Peak) (ft ³ /s)		Flow (Peak) (ft ³ /s)	
12.100		6.63	
12.050		2.19	

Total Volume In		Total Volume Out	
Volume (ft ³)		Volume (ft ³)	
Direction		Direction	
Forward		Reverse	
24,033.000		0.000	
0.000		9,377.000	

Pond Inflow....		Pond Inflow....	
Pond Outflow...		Pond Outflow...	
Mass Balance (ft ³)		Mass Balance (ft ³)	
Volume (Initial ICPM)		Volume (Initial ICPM)	
Volume (Total In ICPM)		Volume (Total In ICPM)	
Volume (Total Out ICPM)		Volume (Total Out ICPM)	
Volume (Ending)		Volume (Ending)	
Elevation (Ending)		Elevation (Ending)	
Difference		Difference	
Percent of Inflow Volume (Interconnected Pond Mass Balance)		Percent of Inflow Volume (Interconnected Pond Mass Balance)	

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 10 year

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak		Maximum Storage	
Peak (hours)		Elevation (ft)	
13.800		123.08	
13.800		14,961.000	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)		Time to Peak (hours)	
Flow (Peak) (ft ³ /s)		Flow (Peak) (ft ³ /s)	
12.100		11.16	
12.100		3.04	

Total Volume In		Total Volume Out	
Volume (ft ³)		Volume (ft ³)	
Direction		Direction	
Forward		Reverse	
41,573.000		0.000	
0.000		10,587.000	

Pond Inflow....		Pond Inflow....	
Pond Outflow...		Pond Outflow...	
Mass Balance (ft ³)		Mass Balance (ft ³)	
Volume (Initial ICPM)		Volume (Initial ICPM)	
Volume (Total In ICPM)		Volume (Total In ICPM)	
Volume (Total Out ICPM)		Volume (Total Out ICPM)	
Volume (Ending)		Volume (Ending)	
Elevation (Ending)		Elevation (Ending)	
Difference		Difference	
Percent of Inflow Volume (Interconnected Pond Mass Balance)		Percent of Inflow Volume (Interconnected Pond Mass Balance)	

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak (hours)	
Maximum Storage Elevation (ft)	123.69
Volume (ft ³)	23,229,000

Forward Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100 21.74
Pond Outflow...	12.100 15.71

Total Volume In	
Volume (ft ³)	Direction
Pond Inflow....	82,787,000 Forward
Pond Outflow...	0.000 Reverse

Total Volume Out	
Volume (ft ³)	Direction
Mass Balance (ft ³)	Reverse Forward
Volume (Initial ICPM)	0.000 ft ³
Volume (Total In ICPM)	82,787,000 ft ³
Volume (Total Out ICPM)	21,590,000 ft ³
Volume (Ending)	9,441,000 ft ³
Elevation (Ending)	122.63 ft
Difference	51,756,000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	62.5 %

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak (hours)	
Maximum Storage Elevation (ft)	122.63
Volume (ft ³)	18,610,000

Forward Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.050 6.69
Pond Outflow...	13.900 0.64

Total Volume In	
Volume (ft ³)	Direction
Pond Inflow....	39,556,000 Forward
Pond Outflow...	0.000 Reverse

Total Volume Out	
Volume (ft ³)	Direction
Mass Balance (ft ³)	Reverse Forward
Volume (Initial ICPM)	0.000 ft ³
Volume (Total In ICPM)	39,556,000 ft ³
Volume (Total Out ICPM)	26,543,000 ft ³
Volume (Ending)	13,921,000 ft ³
Elevation (Ending)	122.43 ft
Difference	-908,000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	2.3 %

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 10 year
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak (hours)		Maximum Storage Elevation (ft)		Volume (ft ³)	
13.800		123.08		29,369.000	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100 12.24	0.000 0.000	0.00 0.00
Pond Outflow...	13.800 1.51	0.000 0.000	0.00 0.00

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	65,495.000 Forward	0.000 Reverse	0.000 Forward
Pond Outflow...	0.000 Reverse	50,393.000 Forward	
Mass Balance (ft ³)			
Volume (Initial ICPM)	0.000 ft ³		
Volume (Total In ICPM)	65,495.000 ft ³		
Volume (Total Out ICPM)	50,393.000 ft ³		
Volume (Ending)	16,248.000 ft ³		
Elevation (Ending)	122.53 ft		
Difference	-1,146.000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	1.7 %		

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak (hours)		Maximum Storage Elevation (ft)		Volume (ft ³)	
12.650		123.69		44,977.000	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100 32.81	0.000 0.000	0.00 0.00
Pond Outflow...	12.650 5.36	0.000 0.000	0.00 0.00

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	132,925.000 Forward	0.000 Reverse	0.000 Reverse
Pond Outflow...	0.000 Reverse	110,990.000 Forward	
Mass Balance (ft ³)			
Volume (Initial ICPM)	0.000 ft ³		
Volume (Total In ICPM)	132,925.000 ft ³		
Volume (Total Out ICPM)	110,990.000 ft ³		
Volume (Ending)	18,577.000 ft ³		
Elevation (Ending)	122.63 ft		
Difference	3,359.000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	2.5 %		

Basin Routings Current Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO3
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
121.50	0.00	0.000	0.000	0.000	0.00	0.00
121.60	0.00	20.328	0.014	0.00	0.00	0.23
121.70	0.00	162.624	0.056	0.00	0.00	1.81
121.80	0.00	548.856	0.126	0.00	0.00	6.10
121.90	0.00	1,300.992	0.224	0.00	0.00	14.46
122.00	0.00	2,541.000	0.350	0.00	0.00	28.23
122.10	0.00	4,074.092	0.354	0.00	0.00	45.27
122.20	0.00	5,624.231	0.358	0.00	0.00	62.49
122.30	0.00	7,191.511	0.362	0.00	0.00	79.91
122.40	0.00	8,776.027	0.366	0.00	0.00	97.51
122.50	0.00	10,377.873	0.370	0.00	0.00	115.31
122.60	0.03	11,997.142	0.374	0.00	0.03	133.33
122.70	0.12	13,633.930	0.378	0.00	0.12	151.61
122.80	0.26	15,288.330	0.382	0.00	0.26	170.13
122.90	0.45	16,960.438	0.386	0.00	0.45	188.90
123.00	0.68	18,650.346	0.390	0.00	0.68	207.90
123.10	0.94	20,359.769	0.395	0.00	0.94	227.16
123.20	1.22	22,090.447	0.400	0.00	1.22	246.67
123.30	1.53	23,842.512	0.405	0.00	1.53	266.45
123.40	1.83	25,616.093	0.410	0.00	1.83	286.45
123.50	2.00	27,411.324	0.415	0.00	2.00	306.58
123.60	2.17	29,228.334	0.420	0.00	2.17	326.93
123.70	2.32	31,067.256	0.425	0.00	2.32	347.52
123.80	2.47	32,928.220	0.430	0.00	2.47	368.34
123.90	2.60	34,811.358	0.435	0.00	2.60	389.40
124.00	2.73	36,716.802	0.440	0.00	2.73	410.70
124.10	2.86	38,644.059	0.445	0.00	2.86	432.23
124.20	2.97	40,592.626	0.450	0.00	2.97	454.00
124.30	3.09	42,562.623	0.455	0.00	3.09	476.01

Basin Routings Current Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO3
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
124.40	3.20	44,554.165	0.460	0.00	3.20	498.24
124.50	3.30	46,567.369	0.465	0.00	3.30	520.72
124.60	3.41	48,602.354	0.470	0.00	3.41	543.43
124.70	3.51	50,659.236	0.475	0.00	3.51	566.39
124.80	3.60	52,738.132	0.480	0.00	3.60	589.58
124.90	3.70	54,839.160	0.485	0.00	3.70	613.02
125.00	3.79	56,962.437	0.490	0.00	3.79	636.70

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO3 (IN)
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	7.70 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	0.37 ft³/s	Time to Peak (Flow, Outlet)	13.500 hours

Elevation (Water Surface, Peak)	122.85 ft
Volume (Peak)	16,204.236 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	22,684.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	9,882.000 ft³
Volume (Retained)	12,786.000 ft³
Volume (Unrouted)	-16.000 ft³
Error (Mass Balance)	0.1 %

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO3 (IN)
Scenario: 10 year
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	11.73 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	1.28 ft³/s	Time to Peak (Flow, Outlet)	12.700 hours

Elevation (Water Surface, Peak)	123.22 ft
Volume (Peak)	22,412.821 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	36,170.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	22,838.000 ft³
Volume (Retained)	13,312.000 ft³
Volume (Unrouted)	-20.000 ft³
Error (Mass Balance)	0.1 %

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO3 (IN)
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	20.40 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	2.76 ft³/s	Time to Peak (Flow, Outlet)	12.700 hours
Elevation (Water Surface, Peak)			
Volume (Peak)	37,080.468 ft³		
Mass Balance (ft³)			
Volume (Initial)	0.000 ft³		
Volume (Total Inflow)	67,193.000 ft³		
Volume (Total Infiltration)	0.000 ft³		
Volume (Total Outlet Outflow)	53,065.000 ft³		
Volume (Retained)	14,097.000 ft³		
Volume (Unrouted)	-31.000 ft³		
Error (Mass Balance)	0.0 %		

Basin Routings Current Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO4
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	122.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	ZS(+ O) (ft²/s)
122.80	0.00	0.000	0.430	0.00	0.00	0.00
122.90	0.00	1,880.188	0.433	0.00	0.00	20.89
123.00	0.00	3,774.626	0.437	0.00	0.00	41.94
123.10	0.00	5,683.369	0.440	0.00	0.00	63.15
123.20	0.00	7,606.471	0.443	0.00	0.00	84.52
123.30	0.00	9,543.986	0.446	0.00	0.00	106.04
123.40	0.00	11,495.966	0.450	0.00	0.00	127.73
123.50	0.00	13,462.467	0.453	0.00	0.00	149.58
123.60	0.00	15,443.541	0.456	0.00	0.00	171.59
123.70	0.00	17,439.243	0.460	0.00	0.00	193.77
123.80	0.00	19,449.626	0.463	0.00	0.00	216.11
123.90	0.02	21,474.745	0.467	0.00	0.02	238.62
124.00	0.06	23,514.652	0.470	0.00	0.06	261.33
124.10	0.36	25,572.605	0.475	0.00	0.36	284.50
124.20	0.86	27,651.898	0.480	0.00	0.86	308.11
124.30	1.50	29,752.641	0.485	0.00	1.50	332.09
124.40	2.25	31,874.943	0.490	0.00	2.25	356.42
124.50	3.10	34,018.916	0.495	0.00	3.10	381.08
124.60	4.03	36,184.668	0.500	0.00	4.03	406.08
124.70	5.04	38,372.311	0.505	0.00	5.04	431.40
124.80	6.12	40,581.954	0.510	0.00	6.12	457.03
124.90	7.28	42,813.706	0.515	0.00	7.28	482.99
125.00	8.49	45,067.680	0.520	0.00	8.49	509.25
125.10	9.77	47,341.361	0.524	0.00	9.77	535.79
125.20	11.11	49,632.208	0.528	0.00	11.11	562.58
125.30	12.51	51,940.286	0.532	0.00	12.51	589.62
125.40	13.95	54,265.658	0.536	0.00	13.95	616.90
125.50	15.45	56,608.390	0.540	0.00	15.45	644.43
125.60	17.00	58,968.546	0.544	0.00	17.00	672.21

Basin Routings Current Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO4
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	25t + O (ft ³ /s)
125.70	18.60	61,346,190	0.548	0.00	18.60	700.23
125.80	20.25	63,741,388	0.552	0.00	20.25	728.48
125.90	21.94	66,154,203	0.556	0.00	21.94	756.99
126.00	23.67	68,584,700	0.560	0.00	23.67	785.73
126.10	25.45	71,032,632	0.564	0.00	25.45	814.71
126.20	27.28	73,497,747	0.568	0.00	27.28	843.92
126.30	29.14	75,980,106	0.572	0.00	29.14	873.36
126.40	31.05	78,475,769	0.576	0.00	31.05	903.04
126.50	32.99	80,996,796	0.580	0.00	32.99	932.95
126.60	34.97	83,531,247	0.584	0.00	34.97	963.10
126.70	37.00	86,083,181	0.588	0.00	37.00	993.47
126.80	39.05	88,652,661	0.592	0.00	39.05	1,024.08
126.90	41.15	91,239,744	0.596	0.00	41.15	1,054.93
127.00	43.28	93,844,492	0.600	0.00	43.28	1,086.00

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO4 (IN)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	122.80 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours
Inflow/Outflow Hydrograph Summary	
Flow (Peak In)	5.60 ft ³ /s
Flow (Peak Outlet)	0.00 ft ³ /s
Time to Peak (Flow, In) Time to Peak (Flow, Outlet)	
12.100 hours 0.000 hours	
Elevation (Water Surface, Peak)	
123.73 ft	
Volume (Peak)	
18,071.987 ft ³	
Mass Balance (ft ³)	
Volume (Initial)	
0.000 ft ³	
Volume (Total Inflow)	
18,074.000 ft ³	
Volume (Total Infiltration)	
0.000 ft ³	
Volume (Total Outlet Outflow)	
0.000 ft ³	
Volume (Retained)	
18,072.000 ft ³	
Volume (Unrouted)	
-2,000 ft ³	
Error (Mass Balance)	
0.0 %	

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO4 (IN)
Scenario: 10 year
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	122.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	8.52 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	0.19 ft³/s	Time to Peak (Flow, Outlet)	17.350 hours

Elevation (Water Surface, Peak)	124.04 ft
Volume (Peak)	24,424.634 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	29,509.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	6,068.000 ft³
Volume (Retained)	23,431.000 ft³
Volume (Unrouted)	-10.000 ft³
Error (Mass Balance)	0.0 %

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO4 (IN)
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	122.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	15.02 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	2.60 ft³/s	Time to Peak (Flow, Outlet)	12.750 hours

Elevation (Water Surface, Peak)	124.44 ft
Volume (Peak)	32,763.015 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	57,871.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	34,078.000 ft³
Volume (Retained)	23,775.000 ft³
Volume (Unrouted)	-18.000 ft³
Error (Mass Balance)	0.0 %

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary

Label: Pond 1

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363,000 ft ³
Outflow (Starting)	0.13 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Pond Inflow.... Pond Outflow....	Time to Peak		Maximum Storage	
	Peak (hours)		Elevation (ft)	
	24.100		118.69	
	24.100		7,370.000	
	Forward Flow Peaks			
	Time to Peak		Flow (Peak)	
	(hours)		(ft³/s)	
	12.100		0.52	
	12.100		0.31	
	Reverse Flow Peaks			
Time to Peak		Flow (Peak)		
(hours)		(ft³/s)		
0.000		0.00		
13.700		-0.01		

Total Volume In		Total Volume Out	
Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	1,399,000	Forward	0.000
Pond Outflow....	2,000	Reverse	287,000
Mass Balance (ft³)			
Volume (Initial ICPM)		6,363,000 ft³	
Volume (Total In ICPM)		1,401,000 ft³	
Volume (Total Out ICPM)		287,000 ft³	
Volume (Ending)		7,370,000 ft³	
Elevation (Ending)		118.69 ft	
Difference		107,000 ft³	
Percent of Inflow Volume (Interconnected Pond Mass Balance)		7.6 %	

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary

Label: Pond 1

Scenario: 10 year

Return Event: 10 years

Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363,000 ft ³
Outflow (Starting)	0.13 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Pond Inflow.... Pond Outflow....	Time to Peak		Maximum Storage	
	Peak (hours)		Elevation (ft)	
	24.300		118.77	
	24.300		8,305,000	
	Forward Flow Peaks			
	Time to Peak		Reverse Flow Peaks	
	Flow (Peak)		Flow (Peak)	
	(ft³/s)		(ft³/s)	
	12.100		0.83	
	11.950		0.33	
12.100		0.00		
11.950		0.00		

Total Volume In		Total Volume Out	
Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	2,515,000	Forward	0.000
Pond Outflow....	0.000	Reverse	283,000
Mass Balance (ft³)			
Volume (Initial ICPM)		6,363,000	ft³
Volume (Total In ICPM)		2,516,000	ft³
Volume (Total Out ICPM)		283,000	ft³
Volume (Ending)		8,305,000	ft³
Elevation (Ending)		118.77	ft
Difference		290,000	ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)		11.5	%

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363,000 ft ³
Outflow (Starting)	0.13 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	hours

Time to Peak		Maximum Storage	
Time to Peak (hours)	24,250	Elevation (ft)	119.00
		Volume (ft ³)	11,028,000

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100	1.79	0.000
Pond Outflow...	12.100	0.50	0.000

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	5,542,000	Forward	0.000
Pond Outflow...	0.000	Reverse	552,000
Mass Balance (ft ³)			
Volume (Initial ICPM)	6,363,000 ft ³		
Volume (Total In ICPM)	5,542,000 ft ³		
Volume (Total Out ICPM)	552,000 ft ³		
Volume (Ending)	11,028,000 ft ³		
Elevation (Ending)	119.00 ft		
Difference	325,000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	5.9 %		

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 2 year
Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	hours

Time to Peak		Maximum Storage	
Time to Peak (hours)	26,000	Elevation (ft)	118.84
		Volume (ft ³)	41,240,000

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100	4.51	0.004
Pond Outflow...	0.000	0.00	0.000

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	40,688,000	Forward	0.000
Pond Outflow...	0.000	Reverse	0.000
Mass Balance (ft ³)			
Volume (Initial ICPM)	559,000 ft ³		
Volume (Total In ICPM)	40,688,000 ft ³		
Volume (Total Out ICPM)	0.000 ft ³		
Volume (Ending)	41,240,000 ft ³		
Elevation (Ending)	118.84 ft		
Difference	6,000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %		

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 10 year
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	hours

	Time to Peak (hours)	Elevation (ft)	Maximum Storage Volume (ft³)
	26.000	119.05	80,049,000
	Forward Flow Peaks		
	Time to Peak (hours)	Flow (Peak) (ft³/s)	
Pond Inflow....	12.100	7.95	0.004
Pond Outflow....	0.000	0.00	0.000
			Reverse Flow Peaks
		Time to Peak (hours)	Flow (Peak) (ft³/s)
			0.00
			0.00

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	79,512.000	Forward	Reverse
Pond Outflow...	0.000	Reverse	Forward
Mass Balance (ft ³)			
Volume (Initial ICPM)	559,000 ft ³		
Volume (Total In ICPM)	79,512.000 ft ³		
Volume (Total Out ICPM)	0.000 ft ³		
Volume (Ending)	80,049.000 ft ³		
Elevation (Ending)	119.05 ft		
Difference	22.000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %		

Basin Routings Current Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
hours	hours

Pond Inflow....	Forward Flow Peaks		Reverse Flow Peaks		
	Time to Peak	Flow (Peak)	Time to Peak	Flow (Peak)	
	(hours)	(ft³/s)	(hours)	(ft³/s)	
	12.100	16.91	0.000	0.00	
Maximum Storage					
Time to Peak	Elevation	Volume			
(hours)	(ft)	(ft³)			
26.000	119.33	178,929.00			
		0			

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	178,382.000	Forward	Reverse
Pond Outflow...	0.000	Reverse	Forward
Mass Balance (ft ³)			
Volume (Initial ICPM)	559,000 ft ³		
Volume (Total In ICPM)	178,382.000 ft ³		
Volume (Total Out ICPM)	0.000 ft ³		
Volume (Ending)	178,929.000 ft ³		
Elevation (Ending)	119.33 ft		
Difference	12.000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %		

Basin Routings Current Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 5
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
121.80	0.00	0.000	0.000	0.00	0.00	0.00
121.90	4.33	225.060	0.155	0.00	4.33	6.83
122.00	25.23	1,800.480	0.620	0.00	25.23	45.24
122.10	64.68	4,522.951	0.630	0.00	64.68	114.94

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (1N)
Scenario: 2 year

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.18 ft³/s	Time to Peak (Flow, In)	12.200 hours
Flow (Peak Outlet)	0.17 ft³/s	Time to Peak (Flow, Outlet)	12.250 hours

Elevation (Water Surface, Peak)	121.80 ft
Volume (Peak)	0.015 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,060.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	1,060.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: 10 year
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.62 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	0.62 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.81 ft
Volume (Peak)	0.662 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	2,874.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	2,874.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	1.86 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	1.82 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.84 ft
Volume (Peak)	16.819 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	7,820.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	7,820.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Basin Routings Current Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)

Label: Pond 6

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
119.80	0.00	0.000	0.000	0.00	0.00	0.00
119.90	0.00	232.320	0.160	0.00	0.00	2.58
120.00	0.00	1,898.560	0.640	0.00	0.00	20.65
120.10	0.00	4,651.807	0.642	0.00	0.00	51.69
120.20	0.00	7,455.880	0.645	0.00	0.00	82.84
120.30	0.00	10,270.802	0.647	0.00	0.00	114.12
120.40	0.00	13,096.593	0.650	0.00	0.00	145.52
120.50	0.00	15,933.274	0.652	0.00	0.00	177.04
120.60	2.71	18,780.866	0.655	0.00	2.71	211.38
120.70	15.31	21,638.390	0.657	0.00	15.31	255.74
120.80	42.18	24,508.866	0.660	0.00	42.18	314.50

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary

Label: Pond 6 (1N)

Scenario: 2 year

Return Event: 2 years

Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.00 ft³/s	Time to Peak (Flow, In)	24.000 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours
Elevation (Water Surface, Peak)	119.81 ft		
Volume (Peak)	0.111 ft³		
Mass Balance (ft³)			
Volume (Initial)	0.000 ft³		
Volume (Total Inflow)	18.000 ft³		
Volume (Total Infiltration)	0.000 ft³		
Volume (Total Outlet Outflow)	0.000 ft³		
Volume (Retained)	0.000 ft³		
Volume (Unrouted)	-18.000 ft³		
Error (Mass Balance)	99.4 %		

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 10 year
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.03 ft³/s	Time to Peak (Flow, In)	12.550 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	119.92 ft
Volume (Peak)	401.402 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	557.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	401.000 ft³
Volume (Unrouted)	-156.000 ft³
Error (Mass Balance)	28.0 %

Basin Routings Current Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 100 year
Return Event: 100 years
Storm Event: 100

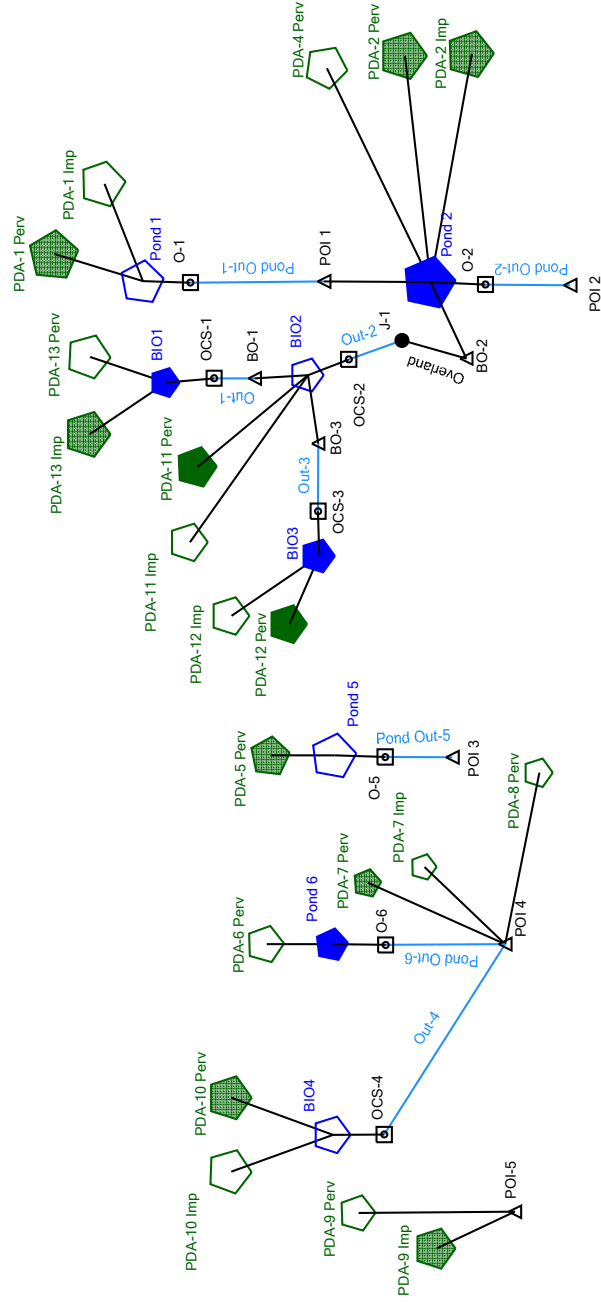
Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.62 ft³/s	Time to Peak (Flow, In)	12.200 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	120.05 ft
Volume (Peak)	3,372.586 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	3,374.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	3,373.000 ft³
Volume (Unrouted)	-1.000 ft³
Error (Mass Balance)	0.0 %



BASIN ROUTINGS PROJECTED RAINFALL

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Pond 5			

Basin Routing Projected Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-1 Perv	2yr projected	2	32,000	24.00	0.00
PDA-1 Perv	10yr projected	10	442,000	12.200	0.05
PDA-1 Perv	100yr projected	100	2,822,000	12.100	0.86
PDA-1 Imp	2yr projected	2	1,593,000	12.100	0.59
PDA-1 Imp	10yr projected	10	2,740,000	12.100	0.98
PDA-1 Imp	100yr projected	100	5,688,000	12.100	1.95
PDA-2 Perv	2yr projected	2	4,751,000	12.600	0.43
PDA-2 Perv	10yr projected	10	15,252,000	12.400	1.88
PDA-2 Perv	100yr projected	100	53,045,000	12.350	7.44
PDA-4 Perv	2yr projected	2	473,000	12.100	0.14
PDA-4 Perv	10yr projected	10	1,325,000	12.100	0.46
PDA-4 Perv	100yr projected	100	4,171,000	12.100	1.46
PDA-5 Perv	2yr projected	2	1,420,000	12.200	0.27
PDA-5 Perv	10yr projected	10	3,975,000	12.150	0.92
PDA-5 Perv	100yr projected	100	12,513,000	12.150	3.06
PDA-6 Perv	2yr projected	2	78,000	20.600	0.00
PDA-6 Perv	10yr projected	10	1,068,000	12.350	0.10
PDA-6 Perv	100yr projected	100	6,822,000	12.150	1.54
PDA-7 Perv	2yr projected	2	118,000	20.650	0.00
PDA-7 Perv	10yr projected	10	1,602,000	12.600	0.12
PDA-7 Perv	100yr projected	100	10,234,000	12.300	1.57
PDA-8 Perv	2yr projected	2	14,000	20.650	0.00
PDA-8 Perv	10yr projected	10	184,000	12.550	0.02
PDA-8 Perv	100yr projected	100	1,176,000	12.200	0.21
PDA-2 Imp	2yr projected	2	11,732,000	12.100	4.47
PDA-2 Imp	10yr projected	10	20,905,000	12.100	7.66
PDA-2 Imp	100yr projected	100	44,747,000	12.100	15.57
PDA-9 Perv	2yr projected	2	845,000	12.950	0.05
PDA-9 Perv	10yr projected	10	4,100,000	12.350	0.50
PDA-9 Perv	100yr projected	100	18,179,000	12.250	3.06
PDA-9 Imp	2yr projected	2	6,938,000	12.100	2.08
PDA-9 Imp	10yr projected	10	11,272,000	12.100	3.32
PDA-9 Imp	100yr projected	100	22,290,000	12.100	6.46
PDA-10 Imp	2yr projected	2	20,279,000	12.100	6.28
PDA-10 Imp	10yr projected	10	32,950,000	12.100	10.02
PDA-10 Imp	100yr projected	100	65,156,000	12.100	19.50
PDA-10 Perv	2yr projected	2	222,000	20.650	0.01
PDA-10 Perv	10yr projected	10	3,020,000	12.600	0.24
PDA-10 Perv	100yr projected	100	19,292,000	12.250	3.04
PDA-7 Imp	2yr projected	2	1,334,000	12.150	0.30
PDA-7 Imp	10yr projected	10	2,168,000	12.150	0.48
PDA-7 Imp	100yr projected	100	4,287,000	12.150	0.93
PDA-13 Imp	2yr projected	2	24,014,000	12.100	7.34

Basin Routing Projected Rainfall

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
PDA-13 Imp	10yr projected	10	39,017,000	12.100	11.72
PDA-13 Imp	100yr projected	100	77,154,000	12.100	22.80
PDA-13 Perv	2yr projected	2	3,797,000	12.250	0.55
PDA-13 Perv	10yr projected	10	12,188,000	12.150	2.61
PDA-13 Perv	100yr projected	100	42,388,000	12.150	10.15
PDA-11 Imp	2yr projected	2	22,813,000	12.100	6.29
PDA-11 Imp	10yr projected	10	37,067,000	12.100	10.05
PDA-11 Imp	100yr projected	100	73,298,000	12.100	19.56
PDA-11 Perv	2yr projected	2	91,000	20.650	0.00
PDA-11 Perv	10yr projected	10	1,234,000	12.550	0.10
PDA-11 Perv	100yr projected	100	7,882,000	12.250	1.34
PDA-12 Imp	2yr projected	2	25,485,000	12.100	8.64
PDA-12 Imp	10yr projected	10	41,406,000	12.100	13.79
PDA-12 Imp	100yr projected	100	81,876,000	12.100	26.82
PDA-12 Perv	2yr projected	2	150,000	20.650	0.00
PDA-12 Perv	10yr projected	10	2,044,000	12.550	0.17
PDA-12 Perv	100yr projected	100	13,057,000	12.250	2.24

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft³)	Time to Peak (hours)	Peak Flow (ft³/s)
POI 2	2yr projected	2	0.000	0.000	0.00
POI 2	10yr projected	10	0.000	0.000	0.00
POI 2	100yr projected	100	0.000	0.000	0.00
POI 3	2yr projected	2	1,420,000	12.200	0.27
POI 3	10yr projected	10	3,975,000	12.200	0.91
POI 3	100yr projected	100	12,513,000	12.200	2.98
POI 4	2yr projected	2	1,571,000	12.150	0.30
POI 4	10yr projected	10	16,393,000	14.100	0.57
POI 4	100yr projected	100	76,090,000	12.350	8.33
POI 5	2yr projected	2	7,783,000	12.100	2.08
POI 5	10yr projected	10	15,372,000	12.100	3.51
POI 5	100yr projected	100	40,469,000	12.100	8.42
J-1	2yr projected	2	33,175,000	13.850	0.82
J-1	10yr projected	10	64,183,000	13.350	2.41
J-1	100yr projected	100	169,629,000	12.500	9.47

Pond Summary

Basin Routing Projected Rainfall

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
Pond 1 (IN)	2yr projected	2	1,626,000	12.100	0.59	(N/A)	(N/A)
Pond 1 (OUT)	2yr projected	2	348,000	12.100	0.34	118.71	7,556,000
Pond 1 (Reverse)	2yr projected	2	0.000	12.850	0.00	(N/A)	(N/A)
Pond 1 (IN)	10yr projected	10	3,183,000	12.100	1.01	(N/A)	(N/A)
Pond 1 (OUT)	10yr projected	10	266,000	12.150	0.27	118.83	8,887,000
Pond 1 (IN)	100yr projected	100	8,512,000	12.100	2.81	(N/A)	(N/A)
Pond 1 (OUT)	projected	100	785,000	12.100	0.71	119.07	13,782,000
Pond 2 (IN)	2yr projected	2	50,485,000	12.100	5.29	(N/A)	(N/A)
Pond 2 (OUT)	2yr projected	2	0.000	0.000	0.00	118.90	51,061,000
Pond 2 (IN)	10yr projected	10	101,941,000	12.100	10.11	(N/A)	(N/A)
Pond 2 (OUT)	10yr projected	10	0.000	0.000	0.00	119.14	102,506,000
Pond 2 (IN)	100yr projected	100	272,359,000	12.100	26.28	(N/A)	(N/A)
Pond 2 (OUT)	projected	100	0.000	0.000	0.00	119.53	272,913,000
Pond 5 (IN)	2yr projected	2	1,420,000	12.200	0.27	(N/A)	(N/A)
Pond 5 (OUT)	2yr projected	2	1,420,000	12.200	0.27	121.81	0.000
Pond 5 (IN)	10yr projected	10	3,975,000	12.150	0.92	(N/A)	(N/A)
Pond 5 (OUT)	10yr projected	10	3,975,000	12.200	0.91	121.82	2,000
Pond 5 (IN)	100yr projected	100	12,513,000	12.150	3.06	(N/A)	(N/A)
Pond 5 (OUT)	projected	100	12,513,000	12.200	2.98	121.87	73,000
Pond 6 (IN)	2yr projected	2	78,000	20.600	0.00	(N/A)	(N/A)
Pond 6 (OUT)	2yr projected	2	0.000	0.000	0.00	119.83	9,000
Pond 6 (IN)	10yr projected	10	1,068,000	12.350	0.10	(N/A)	(N/A)
Pond 6 (OUT)	10yr projected	10	0.000	0.000	0.00	119.95	806,000
Pond 6 (IN)	100yr projected	100	6,822,000	12.150	1.54	(N/A)	(N/A)
Pond 6 (OUT)	projected	100	0.000	0.000	0.00	120.18	6,821,000
BIO4 (IN)	2yr projected	2	20,501,000	12.100	6.28	(N/A)	(N/A)

Basin Routing Projected Rainfall

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
BIO4 (OUT)	2yr projected	2	106,000	24.200	0.01	123.85	20,437,000
BIO4 (IN)	10yr projected	10	35,969,000	12.100	10.04	(N/A)	(N/A)
BIO4 (OUT)	10yr projected	10	12,439,000	14.250	0.48	124.12	26,083,000
BIO4 (IN)	100yr projected	100	84,448,000	12.100	21.28	(N/A)	(N/A)
BIO4 (OUT)	projected	100	60,393,000	12.500	6.27	124.81	40,861,000
BIO1 (IN)	2yr projected	2	27,810,000	12.100	7.66	(N/A)	(N/A)
BIO1 (OUT)	2yr projected	2	11,578,000	12.100	2.01	122.72	10,453,000
BIO1 (IN)	10yr projected	10	51,205,000	12.100	13.81	(N/A)	(N/A)
BIO1 (OUT)	10yr projected	10	12,246,000	12.100	10.08	123.27	17,554,000
BIO1 (IN)	100yr projected	100	119,540,000	12.100	31.47	(N/A)	(N/A)
BIO1 (OUT)	projected	100	33,450,000	12.100	23.66	124.13	29,377,000
BIO2 (IN)	2yr projected	2	47,174,000	12.100	8.41	(N/A)	(N/A)
BIO2 (OUT)	2yr projected	2	33,175,000	13.850	0.82	122.72	20,600,000
BIO2 (IN)	10yr projected	10	80,446,000	12.100	21.28	(N/A)	(N/A)
BIO2 (OUT)	10yr projected	10	64,183,000	13.350	2.41	123.27	34,265,000
BIO2 (IN)	100yr projected	100	194,878,000	12.100	46.96	(N/A)	(N/A)
BIO2 (OUT)	projected	100	169,629,000	12.500	9.47	124.14	56,552,000
BIO3 (IN)	2yr projected	2	25,635,000	12.100	8.64	(N/A)	(N/A)
BIO3 (OUT)	2yr projected	2	12,693,000	13.200	0.54	122.94	17,599,000
BIO3 (IN)	10yr projected	10	43,450,000	12.100	13.80	(N/A)	(N/A)
BIO3 (OUT)	10yr projected	10	29,900,000	12.550	1.83	123.41	25,713,000
BIO3 (IN)	100yr projected	100	94,934,000	12.100	28.26	(N/A)	(N/A)
BIO3 (OUT)	projected	100	80,249,000	12.850	3.50	124.70	50,571,000

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary

Label: BIO1

Scenario: 2yr projected

Infiltration

Infiltration Method
(Computed)

No Infiltration

Initial Conditions

Calculation Tolerances

Elevation (Starting Water Surface Computed)

121.50

ft

Flow Tolerance (Minimum)

0.000

ft³/s

Volume (Starting)

0.000

ft³

Maximum Iterations

35

Outflow (Starting)

0.00

ft³/s

ICPM Time Step

0.020

hours

Initial Conditions

Calculation Tolerances

Elevation (Starting Water Surface Computed)

121.50

ft

Flow Tolerance (Minimum)

0.000

ft³/s

Volume (Starting)

0.000

ft³

Maximum Iterations

35

Outflow (Starting)

0.00

ft³/s

ICPM Time Step

0.020

hours

Return Event: 2 years

Storm Event: 2

Infiltration	
Infiltration Method (Computed)	
No Infiltration	
Initial Conditions	
Calculation Tolerances	
Elevation (Starting Water Surface Computed)	121.50 ft
Flow Tolerance (Minimum)	0.000 ft³/s
Volume (Starting)	0.000 ft³
Maximum Iterations	35
Outflow (Starting)	0.00 ft³/s
ICPM Time Step	0.020 hours

Time to Peak (hours)		Maximum Storage Elevation (ft)		Volume (ft³)	
13.850		122.72		10,453,000	

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 7.66	0.000	0.00
Pond Outflow...	12.100 2.01	0.000	0.00

Total Volume In		Total Volume Out	
Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	27,810,000 Forward	0.000	Reverse
Pond Outflow...	0.000 Reverse	11,578,000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	27,810,000 ft³
Volume (Total Out ICPM)	11,578,000 ft³
Volume (Ending)	7,566,000 ft³
Elevation (Ending)	122.47 ft
Difference	8,666,000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	31.2 %

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary

Label: BIO1

Scenario: 10yr projected

Infiltration

Infiltration Method
(Computed)

No Infiltration

Initial Conditions

Calculation Tolerances

Elevation (Starting Water Surface Computed)

121.50

ft

Flow Tolerance (Minimum)

0.000

ft³/s

Volume (Starting)

0.000

ft³

Maximum Iterations

35

Outflow (Starting)

0.00

ft³/s

ICPM Time Step

0.020

hours

Initial Conditions

Calculation Tolerances

Elevation (Starting Water Surface Computed)

121.50

ft

Flow Tolerance (Minimum)

0.000

ft³/s

Volume (Starting)

0.000

ft³

Maximum Iterations

35

Outflow (Starting)

0.00

ft³/s

ICPM Time Step

0.020

hours

Return Event: 10 years

Storm Event: 10

Infiltration	
Infiltration Method (Computed)	
No Infiltration	
Initial Conditions	
Calculation Tolerances	
Elevation (Starting Water Surface Computed)	121.50 ft
Flow Tolerance (Minimum)	0.000 ft³/s
Volume (Starting)	0.000 ft³
Maximum Iterations	35
Outflow (Starting)	0.00 ft³/s
ICPM Time Step	0.020 hours

Time to Peak (hours)		Maximum Storage Elevation (ft)		Volume (ft³)	
13.350		123.27		17,554,000	

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 13.81	0.000	0.00
Pond Outflow...	12.100 10.08	0.000	0.00

Total Volume In		Total Volume Out	
Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	51,205,000 Forward	0.000	Reverse
Pond Outflow...	0.000 Reverse	12,246,000	Forward

Mass Balance (ft³)	
Volume (Initial ICPM)	0.000 ft³
Volume (Total In ICPM)	51,205,000 ft³
Volume (Total Out ICPM)	12,246,000 ft³
Volume (Ending)	8,598,000 ft³
Elevation (Ending)	122.56 ft
Difference	30,361,000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	59.3 %

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO1
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak		Maximum Storage	
Peak (hours)		Elevation (ft)	
12.550		124.13	
		29,377,000	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)		Time to Peak (hours)	
Flow (Peak) (ft ³ /s)		Flow (Peak) (ft ³ /s)	
12.100		31.47	
12.100		0.000	
Pond Inflow....		0.000	
Pond Outflow...		0.000	

Total Volume In		Total Volume Out	
Volume (ft ³)		Volume (ft ³)	
Direction		Direction	
Forward		Reverse	
119,540,000		0.000	
Pond Inflow....		33,450,000	
Pond Outflow...		Forward	

Mass Balance (ft ³)	
Volume (Initial ICPM)	0.000 ft ³
Volume (Total In ICPM)	119,540,000 ft ³
Volume (Total Out ICPM)	33,450,000 ft ³
Volume (Ending)	11,082,000 ft ³
Elevation (Ending)	122.77 ft
Difference	75,009,000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	62.7 %

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak		Maximum Storage	
Peak (hours)		Elevation (ft)	
13.850		122.72	
		20,600,000	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)		Time to Peak (hours)	
Flow (Peak) (ft ³ /s)		Flow (Peak) (ft ³ /s)	
12.100		8.41	
13.850		0.000	
Pond Inflow....		0.000	
Pond Outflow...		0.000	

Total Volume In		Total Volume Out	
Volume (ft ³)		Volume (ft ³)	
Direction		Direction	
Forward		Reverse	
47,174,000		0.000	
Pond Inflow....		33,175,000	
Pond Outflow...		Forward	

Mass Balance (ft ³)	
Volume (Initial ICPM)	0.000 ft ³
Volume (Total In ICPM)	47,174,000 ft ³
Volume (Total Out ICPM)	33,175,000 ft ³
Volume (Ending)	14,911,000 ft ³
Elevation (Ending)	122.47 ft
Difference	-911,000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	1.9 %

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

	Time to Peak (hours)	Elevation (ft)	Maximum Storage Volume (ft³)
	13.350	123.27	34,265.000
	Forward Flow Peaks		
	Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)
Pond Inflow....	12.100	21.28	0.000
Pond Outflow....	13.350	2.41	0.000
			Flow (Peak) (ft³/s)
			0.00
			0.00

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	80,446.000	Forward	0.000
Pond Outflow...	0.000	Reverse	64,183.000
Mass Balance (ft ³)			
Volume (Initial ICPM)	0.000 ft ³		
Volume (Total In ICPM)	80,446.000 ft ³		
Volume (Total Out ICPM)	64,183.000 ft ³		
Volume (Ending)	16,928.000 ft ³		
Elevation (Ending)	122.56 ft		
Difference	-665.000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.8 %		

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: BIO2
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	121.50 ft
Volume (Starting)	0.000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Volume (ft ³)
	12.500	124.14	56,552.000
	Forward Flow Peaks		
	Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)
Pond Inflow....	12.100	46.96	0.000
Pond Outflow....	12.500	9.47	0.000
			Flow (Peak) (ft ³ /s)
			0.00
			0.00

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	194,878.000	Forward	0.000
Pond Outflow...	0.000	Reverse	169,629.000
Mass Balance (ft ³)			
Volume (Initial ICPM)	0.000 ft ³		
Volume (Total In ICPM)	194,878.000 ft ³		
Volume (Total Out ICPM)	169,629.000 ft ³		
Volume (Ending)	21,781.000 ft ³		
Elevation (Ending)	122.77 ft		
Difference	3,468.000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	1.8 %		

Basin Routing Projected Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO3
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
121.50	0.00	0.000	0.000	0.000	0.00	0.00
121.60	0.00	20.328	0.014	0.00	0.00	0.23
121.70	0.00	162.624	0.056	0.00	0.00	1.81
121.80	0.00	548.856	0.126	0.00	0.00	6.10
121.90	0.00	1,300.992	0.224	0.00	0.00	14.46
122.00	0.00	2,541.000	0.350	0.00	0.00	28.23
122.10	0.00	4,074.092	0.354	0.00	0.00	45.27
122.20	0.00	5,624.231	0.358	0.00	0.00	62.49
122.30	0.00	7,191.511	0.362	0.00	0.00	79.91
122.40	0.00	8,776.027	0.366	0.00	0.00	97.51
122.50	0.00	10,377.873	0.370	0.00	0.00	115.31
122.60	0.03	11,997.142	0.374	0.00	0.03	133.33
122.70	0.12	13,633.930	0.378	0.00	0.12	151.61
122.80	0.26	15,288.330	0.382	0.00	0.26	170.13
122.90	0.45	16,960.438	0.386	0.00	0.45	188.90
123.00	0.68	18,650.346	0.390	0.00	0.68	207.90
123.10	0.94	20,359.769	0.395	0.00	0.94	227.16
123.20	1.22	22,090.447	0.400	0.00	1.22	246.67
123.30	1.53	23,842.512	0.405	0.00	1.53	266.45
123.40	1.83	25,616.093	0.410	0.00	1.83	286.45
123.50	2.00	27,411.324	0.415	0.00	2.00	306.58
123.60	2.17	29,228.334	0.420	0.00	2.17	326.93
123.70	2.32	31,067.256	0.425	0.00	2.32	347.52
123.80	2.47	32,928.220	0.430	0.00	2.47	368.34
123.90	2.60	34,811.358	0.435	0.00	2.60	389.40
124.00	2.73	36,716.802	0.440	0.00	2.73	410.70
124.10	2.86	38,644.059	0.445	0.00	2.86	432.23
124.20	2.97	40,592.626	0.450	0.00	2.97	454.00
124.30	3.09	42,562.623	0.455	0.00	3.09	476.01

Basin Routing Projected Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO3
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
124.40	3.20	44,554.165	0.460	0.00	3.20	498.24
124.50	3.30	46,567.369	0.465	0.00	3.30	520.72
124.60	3.41	48,602.354	0.470	0.00	3.41	543.43
124.70	3.51	50,659.236	0.475	0.00	3.51	566.39
124.80	3.60	52,738.132	0.480	0.00	3.60	589.58
124.90	3.70	54,839.160	0.485	0.00	3.70	613.02
125.00	3.79	56,962.437	0.490	0.00	3.79	636.70

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO3 (IN)
Scenario: 2yr projected
Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	8.64 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	0.54 ft³/s	Time to Peak (Flow, Outlet)	13.200 hours

Elevation (Water Surface, Peak)	122.94 ft
Volume (Peak)	17,599.216 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	25,635.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	12,693.000 ft³
Volume (Retained)	12,925.000 ft³
Volume (Unrouted)	-17.000 ft³
Error (Mass Balance)	0.1 %

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO3 (IN)
Scenario: 10yr projected
Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	13.80 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	1.83 ft³/s	Time to Peak (Flow, Outlet)	12.550 hours

Elevation (Water Surface, Peak)	123.41 ft
Volume (Peak)	25,712.940 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	43,450.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	29,900.000 ft³
Volume (Retained)	13,529.000 ft³
Volume (Unrouted)	-21.000 ft³
Error (Mass Balance)	0.0 %

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO3 (IN)
Scenario: 100yr projected
Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	28.26 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	3.50 ft³/s	Time to Peak (Flow, Outlet)	12.850 hours
Elevation (Water Surface, Peak)			
Volume (Peak)	50,571.460 ft³	124.70 ft	
Mass Balance (ft³)			
Volume (Initial)	0.000 ft³		
Volume (Total Inflow)	94,934.000 ft³		
Volume (Total Infiltration)	0.000 ft³		
Volume (Total Outlet Outflow)	80,249.000 ft³		
Volume (Retained)	14,645.000 ft³		
Volume (Unrouted)	-40.000 ft³		
Error (Mass Balance)	0.0 %		

Basin Routing Projected Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO4
Scenario: 2yr projected
Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	122.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	ZS/ + O (ft²/s)
122.80	0.00	0.000	0.430	0.00	0.00	0.00
122.90	0.00	1,880.188	0.433	0.00	0.00	20.89
123.00	0.00	3,774.626	0.437	0.00	0.00	41.94
123.10	0.00	5,683.369	0.440	0.00	0.00	63.15
123.20	0.00	7,606.471	0.443	0.00	0.00	84.52
123.30	0.00	9,543.986	0.446	0.00	0.00	106.04
123.40	0.00	11,495.966	0.450	0.00	0.00	127.73
123.50	0.00	13,462.467	0.453	0.00	0.00	149.58
123.60	0.00	15,443.541	0.456	0.00	0.00	171.59
123.70	0.00	17,439.243	0.460	0.00	0.00	193.77
123.80	0.00	19,449.626	0.463	0.00	0.00	216.11
123.90	0.02	21,474.745	0.467	0.00	0.02	238.62
124.00	0.06	23,514.652	0.470	0.00	0.06	261.33
124.10	0.36	25,572.605	0.475	0.00	0.36	284.50
124.20	0.86	27,651.898	0.480	0.00	0.86	308.11
124.30	1.50	29,752.641	0.485	0.00	1.50	332.09
124.40	2.25	31,874.943	0.490	0.00	2.25	356.42
124.50	3.10	34,018.916	0.495	0.00	3.10	381.08
124.60	4.03	36,184.668	0.500	0.00	4.03	406.08
124.70	5.04	38,372.311	0.505	0.00	5.04	431.40
124.80	6.12	40,581.954	0.510	0.00	6.12	457.03
124.90	7.28	42,813.706	0.515	0.00	7.28	482.99
125.00	8.49	45,067.680	0.520	0.00	8.49	509.25
125.10	9.77	47,341.361	0.524	0.00	9.77	535.79
125.20	11.11	49,632.208	0.528	0.00	11.11	562.58
125.30	12.51	51,940.286	0.532	0.00	12.51	589.62
125.40	13.95	54,265.658	0.536	0.00	13.95	616.90
125.50	15.45	56,608.390	0.540	0.00	15.45	644.43
125.60	17.00	58,968.546	0.544	0.00	17.00	672.21

Basin Routing Projected Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO4
Scenario: 2yr projected
Return Event: 2 years
Storm Event: 2

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	25t + O (ft³/s)
125.70	18.60	61,346.190	0.548	0.00	18.60	700.23
125.80	20.25	63,741.388	0.552	0.00	20.25	728.48
125.90	21.94	66,154.203	0.556	0.00	21.94	756.99
126.00	23.67	68,584.700	0.560	0.00	23.67	785.73
126.10	25.45	71,032.632	0.564	0.00	25.45	814.71
126.20	27.28	73,497.747	0.568	0.00	27.28	843.92
126.30	29.14	75,980.106	0.572	0.00	29.14	873.36
126.40	31.05	78,479.769	0.576	0.00	31.05	903.04
126.50	32.99	80,996.796	0.580	0.00	32.99	932.95
126.60	34.97	83,531.247	0.584	0.00	34.97	963.10
126.70	37.00	86,083.181	0.588	0.00	37.00	993.47
126.80	39.05	88,652.661	0.592	0.00	39.05	1,024.08
126.90	41.15	91,239.744	0.596	0.00	41.15	1,054.93
127.00	43.28	93,844.492	0.600	0.00	43.28	1,086.00

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO4 (IN)
Scenario: 2yr projected
Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	122.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours
Inflow/Outflow Hydrograph Summary	
Flow (Peak In)	6.28 ft³/s
Flow (Peak Outlet)	0.01 ft³/s
Time to Peak (Flow, In) Time to Peak (Flow, Outlet)	
12.100 hours 24.200 hours	
Elevation (Water Surface, Peak)	
123.85 ft	
Volume (Peak)	
20,436.529 ft³	
Mass Balance (ft³)	
Volume (Initial)	
0.000 ft³	
Volume (Total Inflow)	
20,501.000 ft³	
Volume (Total Infiltration)	
0.000 ft³	
Volume (Total Outlet Outflow)	
106.000 ft³	
Volume (Retained)	
20,392.000 ft³	
Volume (Unrouted)	
-3.000 ft³	
Error (Mass Balance)	
0.0 %	

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO4 (IN)
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	122.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	10.04 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	0.48 ft³/s	Time to Peak (Flow, Outlet)	14.250 hours

Elevation (Water Surface, Peak)	124.12 ft
Volume (Peak)	26,083.414 ft³
Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	35,969.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	12,439.000 ft³
Volume (Retained)	23,520.000 ft³
Volume (Unrouted)	-10.000 ft³
Error (Mass Balance)	0.0 %

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: BIO4 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	122.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	21.28 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	6.27 ft³/s	Time to Peak (Flow, Outlet)	12.500 hours

Elevation (Water Surface, Peak)	124.81 ft
Volume (Peak)	40,861.055 ft³
Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	84,448.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	60,393.000 ft³
Volume (Retained)	24,029.000 ft³
Volume (Unrouted)	-26.000 ft³
Error (Mass Balance)	0.0 %

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary

Label: Pond 1

Scenario: 2yr projected

Infiltration

Infiltration Method (Computed)

No Infiltration

Initial Conditions

Elevation (Starting Water Surface Computed)

118.60

ft

Flow Tolerance (Minimum)

0.000

ft³/s

Volume (Starting)

6,363.000

ft³

Maximum Iterations

35

Outflow (Starting)

0.13

ft³/s

ICPM Time Step

0.020

hours

Initial Conditions

Calculation Tolerances

Elevation (Starting Water Surface Computed)

118.60

ft

Flow Tolerance (Minimum)

0.000

ft³/s

Volume (Starting)

6,363.000

ft³

Maximum Iterations

35

Outflow (Starting)

0.13

ft³/s

ICPM Time Step

0.020

hours

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363.000 ft³
Outflow (Starting)	0.13 ft³/s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000 ft³/s
Maximum Iterations	35
ICPM Time Step	0.020 hours

Pond Inflow.... Pond Outflow....	Time to Peak		Maximum Storage	
	Peak (hours)		Elevation (ft)	
	24.150		118.71	
	Volume (ft³)		7,556,000	
	Forward Flow Peaks			
	Time to Peak		Reverse Flow Peaks	
	Flow (Peak)		Flow (Peak)	
	(ft³/s)		(ft³/s)	
	12.100		0.59	
	12.100		0.34	

Pond Inflow....		Pond Outflow....	
1,626.000		0.000	
Volume (ft³)		Direction	
Forward		Reverse	
0.000		348.000	
Total Volume In		Total Volume Out	
Volume (ft³)		Volume (ft³)	
Forward		Reverse	
0.000		348.000	
Mass Balance (ft³)			
Volume (Initial ICPM)		6,363.000 ft³	
Volume (Total In ICPM)		1,626.000 ft³	
Volume (Total Out ICPM)		348.000 ft³	
Volume (Ending)		7,556.000 ft³	
Elevation (Ending)		118.71 ft	
Difference		85.000 ft³	
Percent of Inflow Volume (Interconnected Pond Mass Balance)		5.3 %	

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary

Label: Pond 1

Scenario: 10yr projected

Infiltration

Infiltration Method (Computed)

No Infiltration

Initial Conditions

Elevation (Starting Water Surface Computed)

118.60

ft

Flow Tolerance (Minimum)

0.000

ft³/s

Volume (Starting)

6,363.000

ft³

Maximum Iterations

35

Outflow (Starting)

0.13

ft³/s

ICPM Time Step

0.020

hours

Initial Conditions

Calculation Tolerances

Elevation (Starting Water Surface Computed)

118.60

ft

Flow Tolerance (Minimum)

0.000

ft³/s

Volume (Starting)

6,363.000

ft³

Maximum Iterations

35

Outflow (Starting)

0.13

ft³/s

ICPM Time Step

0.020

hours

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363.000 ft³
Outflow (Starting)	0.13 ft³/s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000 ft³/s
Maximum Iterations	35
ICPM Time Step	0.020 hours

Pond Inflow.... Pond Outflow....	Time to Peak		Maximum Storage	
	Peak (hours)		Elevation (ft)	
	24.250		118.83	
	Volume (ft³)		8,887.000	
	Forward Flow Peaks			
	Time to Peak		Flow (Peak)	
	(hours)		(ft³/s)	
	12.100		1.01	
	12.150		0.27	
	Reverse Flow Peaks			
Time to Peak		Flow (Peak)		
(hours)		(ft³/s)		
0.000		0.000		
0.000		0.000		

Pond Inflow....		Pond Outflow....	
12.100		12.150	
12.150		0.27	
Total Volume In			
Volume (ft³)		Direction	
3,183.000		Forward	
0.000		Reverse	
Total Volume Out			
Volume (ft³)		Direction	
0.000		Reverse	
266.000		Forward	
Mass Balance (ft³)			
Volume (Initial ICPM)		6,363.000 ft³	
Volume (Total In ICPM)		3,183.000 ft³	
Volume (Total Out ICPM)		266.000 ft³	
Volume (Ending)		8,887.000 ft³	
Elevation (Ending)		118.83 ft	
Difference		392.000 ft³	
Percent of Inflow Volume (Interconnected Pond Mass Balance)		12.3 %	

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	6,363,000 ft ³
Outflow (Starting)	0.13 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Volume (ft ³)
	24,250	119.07	13,782,000

	Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Reverse Flow Peaks Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100	2.81	0.000	0.00
Pond Outflow...	12.100	0.71	0.000	0.00

	Volume (ft ³)	Total Volume In Direction	Volume (ft ³)	Total Volume Out Direction
Pond Inflow....	8,512,000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	765,000	Forward

Mass Balance (ft ³)	
Volume (Initial ICPM)	6,363,000 ft ³
Volume (Total In ICPM)	8,512,000 ft ³
Volume (Total Out ICPM)	765,000 ft ³
Volume (Ending)	13,782,000 ft ³
Elevation (Ending)	119.07 ft
Difference	329,000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	3.9 %

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020
	hours

	Time to Peak (hours)	Maximum Storage Elevation (ft)	Volume (ft ³)
	26,000	118.90	51,061,000

	Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Reverse Flow Peaks Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100	5.29	0.004	0.00
Pond Outflow...	0.000	0.00	0.000	0.00

	Volume (ft ³)	Total Volume In Direction	Volume (ft ³)	Total Volume Out Direction
Pond Inflow....	50,485,000	Forward	0.000	Reverse
Pond Outflow...	0.000	Reverse	0.000	Forward

Mass Balance (ft ³)	
Volume (Initial ICPM)	559,000 ft ³
Volume (Total In ICPM)	50,485,000 ft ³
Volume (Total Out ICPM)	0.000 ft ³
Volume (Ending)	51,061,000 ft ³
Elevation (Ending)	118.90 ft
Difference	-17,000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary

Label: Pond 2

Scenario: 10yr projected

Return Event: 10 years

Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak (hours)		Maximum Storage Elevation (ft)		Volume (ft ³)	
26.000		119.14		102,506.00	
				0	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100	10.11	0.000
Pond Outflow...	0.000	0.00	0.000

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	101,941.000	Forward	0.000
Pond Outflow...	0.000	Reverse	0.000
Mass Balance (ft ³)			
Volume (Initial ICPM)	559,000 ft ³		
Volume (Total In ICPM)	101,941.000 ft ³		
Volume (Total Out ICPM)	0.000 ft ³		
Volume (Ending)	102,506.000 ft ³		
Elevation (Ending)	119.14 ft		
Difference	-5,000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %		

Basin Routing Projected Rainfall

Subsection: Interconnected Pond Routing Summary

Label: Pond 2

Scenario: 100yr projected

Return Event: 100 years

Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Starting Water Surface Computed)	118.60 ft
Volume (Starting)	559,000 ft ³
Outflow (Starting)	0.00 ft ³ /s
Calculation Tolerances	
Flow Tolerance (Minimum)	0.000
Maximum Iterations	35
ICPM Time Step	0.020 hours

Time to Peak (hours)		Maximum Storage Elevation (ft)		Volume (ft ³)	
26.000		119.53		272,913.00	
				0	

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow....	12.100	26.28	0.000
Pond Outflow...	0.000	0.00	0.000

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow....	272,359.000	Forward	0.000
Pond Outflow...	0.000	Reverse	0.000
Mass Balance (ft ³)			
Volume (Initial ICPM)	559,000 ft ³		
Volume (Total In ICPM)	272,359.000 ft ³		
Volume (Total Out ICPM)	0.000 ft ³		
Volume (Ending)	272,913.000 ft ³		
Elevation (Ending)	119.53 ft		
Difference	5,000 ft ³		
Percent of Inflow Volume (Interconnected Pond Mass Balance)	0.0 %		

Basin Routing Projected Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 5
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	2S/t + O (ft³/s)
121.80	0.00	0.000	0.000	0.00	0.00	0.00
121.90	4.33	225.060	0.155	0.00	4.33	6.83
122.00	25.23	1,800.480	0.620	0.00	25.23	45.24
122.10	64.68	4,522.951	0.630	0.00	64.68	114.94

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (1N)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.27 ft³/s	Time to Peak (Flow, In)	12.200 hours
Flow (Peak Outlet)	0.27 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.81 ft
Volume (Peak)	0.052 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,420.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	1,420.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.92 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	0.91 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.82 ft
Volume (Peak)	2.068 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	3.975,000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	3.975,000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	3.06 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	2.98 ft³/s	Time to Peak (Flow, Outlet)	12.200 hours

Elevation (Water Surface, Peak)	121.87 ft
Volume (Peak)	73.260 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	12,513,000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	12,513,000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Basin Routing Projected Rainfall

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 6
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
119.80	0.00	0.000	0.000	0.00	0.00	0.00
119.90	0.00	232.320	0.160	0.00	0.00	2.58
120.00	0.00	1,898.560	0.640	0.00	0.00	20.65
120.10	0.00	4,651.807	0.642	0.00	0.00	51.69
120.20	0.00	7,455.880	0.645	0.00	0.00	82.84
120.30	0.00	10,270.802	0.647	0.00	0.00	114.12
120.40	0.00	13,096.593	0.650	0.00	0.00	145.52
120.50	0.00	15,933.274	0.652	0.00	0.00	177.04
120.60	2.71	18,780.866	0.655	0.00	2.71	211.38
120.70	15.31	21,638.390	0.657	0.00	15.31	255.74
120.80	42.18	24,508.866	0.660	0.00	42.18	314.50

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.00 ft³/s	Time to Peak (Flow, In)	20.600 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours
Elevation (Water Surface, Peak)	119.83 ft		
Volume (Peak)	8.914 ft³		
Mass Balance (ft³)			
Volume (Initial)	0.000 ft³		
Volume (Total Inflow)	78.000 ft³		
Volume (Total Infiltration)	0.000 ft³		
Volume (Total Outlet Outflow)	0.000 ft³		
Volume (Retained)	9.000 ft³		
Volume (Unrouted)	-69.000 ft³		
Error (Mass Balance)	88.6 %		

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 10yr projected

Return Event: 10 years
Storm Event: 10

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.10 ft³/s	Time to Peak (Flow, In)	12.350 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	119.95 ft
Volume (Peak)	806.004 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	1,068.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	806.000 ft³
Volume (Unrouted)	-262.000 ft³
Error (Mass Balance)	24.5 %

Basin Routing Projected Rainfall

Subsection: Level Pool Pond Routing Summary
Label: Pond 6 (IN)
Scenario: 100yr projected

Return Event: 100 years
Storm Event: 100

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	1.54 ft³/s	Time to Peak (Flow, In)	12.150 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	120.18 ft
Volume (Peak)	6,821.248 ft³

Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	6,822.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	6,821.000 ft³
Volume (Unrouted)	-1,000 ft³
Error (Mass Balance)	0.0 %

Appendix D: Water Quality Calculations



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Water Quality Routings

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
PDA-1 Imp	Base	1	335,000	1.050	0.30
PDA-10 Imp	Base	1	5,797,000	1.100	4.39
PDA-11 Imp	Base	1	3,830,000	1.100	2.71
PDA-12 Imp	Base	1	4,767,000	1.050	3.81
PDA-13 Imp	Base	1	2,633,000	1.100	1.98
PDA-2 Imp	Base	1	361,000	1.100	0.32
PDA-5 Perv	Base	1	0.000	0.000	0.00
PDA-5 Perv	Base	1	0.000	0.000	0.00
PDA-7 Imp	Base	1	716,000	1.100	0.54
PDA-9 Imp	Base	1	1,918,000	1.100	1.44

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
J-1	Base	1	0.000	0.000	0.00
POI 2	Base	1	0.000	0.000	0.00
POI 3	Base	1	0.000	0.000	0.00
POI 4	Base	1	716,000	1.100	0.54
POI-5	Base	1	1,918,000	1.100	1.44

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
BIO1 (IN)	Base	1	2,633,000	1.100	1.98	(N/A)	(N/A)
BIO1 (OUT)	Base	1	0.000	0.000	0.00	122.07	2,632,000
BIO2 (IN)	Base	1	3,830,000	1.100	2.71	(N/A)	(N/A)
BIO2 (OUT)	Base	1	0.000	0.000	0.00	122.00	3,829,000
BIO3 (IN)	Base	1	4,767,000	1.050	3.81	(N/A)	(N/A)
BIO3 (OUT)	Base	1	0.000	0.000	0.00	122.14	4,767,000
BIO4 (IN)	Base	1	5,797,000	1.100	4.39	(N/A)	(N/A)
BIO4 (OUT)	Base	1	0.000	0.000	0.00	123.31	5,796,000
Pond 1 (IN)	Base	1	334,000	1.050	0.29	(N/A)	(N/A)
Pond 1 (OUT)	Base	1	209,000	1.100	0.33	118.60	6,401,000
Pond 2 (IN)	Base	1	571,000	1.100	0.66	(N/A)	(N/A)
Pond 2 (OUT)	Base	1	0.000	0.000	0.00	118.60	1,123,000
Pond 5 (IN)	Base	1	0.000	0.000	0.00	(N/A)	(N/A)

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Water Quality 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)
Pond 5 (OUT)	Base	1	0.000	0.000	0.00	121.80	0.000
Pond 6 (IN)	Base	1	0.000	0.000	0.00	(N/A)	(N/A)
Pond 6 (OUT)	Base	1	0.000	0.000	0.00	119.80	0.000

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)

Label: BIO1

Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	ZS/t + O (ft³/s)
121.50	0.00	0.000	0.000	0.000	0.00	0.00
121.60	0.00	15.101	0.010	0.00	0.00	0.17
121.70	0.00	120.806	0.042	0.00	0.00	1.34
121.80	0.00	407.722	0.094	0.00	0.00	4.53
121.90	0.00	966.451	0.166	0.00	0.00	10.74
122.00	0.00	1,887.600	0.260	0.00	0.00	20.97
122.10	0.00	3,026.528	0.263	0.00	0.00	33.63
122.20	6.76	4,178.238	0.269	0.00	6.76	53.19
122.30	19.21	5,342.802	0.269	0.00	19.21	78.57
122.40	35.43	6,520.292	0.272	0.00	35.43	107.88
122.50	54.77	7,710.778	0.275	0.00	54.77	140.45
122.60	76.86	8,914.332	0.278	0.00	76.86	175.91
122.70	101.44	10,131.026	0.281	0.00	101.44	214.01
122.80	128.34	11,360.930	0.284	0.00	128.34	254.58
122.90	157.44	12,604.116	0.287	0.00	157.44	297.48
123.00	188.61	13,860.656	0.290	0.00	188.61	342.62
123.10	221.78	15,132.345	0.294	0.00	221.78	389.92
123.20	256.88	16,421.008	0.298	0.00	256.88	439.33
123.30	293.84	17,726.758	0.302	0.00	293.84	490.81
123.40	332.63	19,049.707	0.306	0.00	332.63	544.29
123.50	373.19	20,389.967	0.310	0.00	373.19	599.75
123.60	415.49	21,747.651	0.314	0.00	415.49	657.14
123.70	459.51	23,122.872	0.318	0.00	459.51	716.43
123.80	505.20	24,515.741	0.322	0.00	505.20	777.59
123.90	552.54	25,926.373	0.326	0.00	552.54	840.61
124.00	601.52	27,354.878	0.330	0.00	601.52	905.46
124.10	652.11	28,798.759	0.333	0.00	652.11	972.10
124.20	704.30	30,255.481	0.336	0.00	704.30	1,040.47
124.30	758.06	31,725.101	0.339	0.00	758.06	1,110.56

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO1
Scenario: Base
Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	25t + O (ft³/s)
124.40	813.39	33,207.675	0.342	0.00	813.39	1,182.37
124.50	870.28	34,703.260	0.345	0.00	870.28	1,255.87
124.60	928.70	36,211.912	0.348	0.00	928.70	1,331.06
124.70	988.66	37,733.690	0.351	0.00	988.66	1,407.92
124.80	1,050.13	39,268.650	0.354	0.00	1,050.13	1,486.45
124.90	1,113.12	40,816.848	0.357	0.00	1,113.12	1,566.64
125.00	1,177.62	42,378.341	0.360	0.00	1,177.62	1,648.49

Water Quality Routings

Subsection: Level Pool Pond Routing Summary
Label: BIO1 (IN)
Scenario: Base
Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours
Inflow/Outflow Hydrograph Summary	
Flow (Peak In)	1.98 ft³/s
Flow (Peak Outlet)	0.00 ft³/s
Time to Peak (Flow, In)	1.100 hours
Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	122.07 ft
Volume (Peak)	2,631.553 ft³
Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	2,633.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	2,632.000 ft³
Volume (Unrouted)	-1.000 ft³
Error (Mass Balance)	0.1 %

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO2
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
121.50	0.00	0.000	0.000	0.000	0.00	0.00
121.60	0.00	30.202	0.021	0.00	0.00	0.34
121.70	0.00	241.613	0.083	0.00	0.00	2.68
121.80	0.00	815.443	0.187	0.00	0.00	9.06
121.90	0.00	1,932.902	0.333	0.00	0.00	21.48
122.00	0.00	3,775.200	0.520	0.00	0.00	41.95
122.10	0.00	6,046.881	0.524	0.00	0.00	67.21
122.20	0.09	8,339.729	0.528	0.00	0.09	92.76
122.30	0.27	10,647.806	0.532	0.00	0.27	118.58
122.40	0.49	12,973.178	0.536	0.00	0.49	144.64
122.50	0.76	15,315.910	0.540	0.00	0.76	170.94
122.60	1.06	17,676.066	0.544	0.00	1.06	197.46
122.70	1.39	20,053.710	0.548	0.00	1.39	224.21
122.80	1.76	22,448.908	0.552	0.00	1.76	251.19
122.90	2.15	24,861.723	0.556	0.00	2.15	278.39
123.00	2.56	27,292.220	0.560	0.00	2.56	305.81
123.10	3.00	29,742.253	0.565	0.00	3.00	333.47
123.20	3.46	32,213.693	0.570	0.00	3.46	361.39
123.30	3.94	34,706.634	0.575	0.00	3.94	389.57
123.40	4.45	37,221.169	0.580	0.00	4.45	418.02
123.50	4.97	39,757.390	0.585	0.00	4.97	446.72
123.60	5.51	42,315.392	0.590	0.00	5.51	475.68
123.70	6.07	44,895.267	0.595	0.00	6.07	504.91
123.80	6.65	47,497.107	0.600	0.00	6.65	534.40
123.90	7.24	50,121.008	0.605	0.00	7.24	564.14
124.00	7.86	52,767.060	0.610	0.00	7.86	594.16
124.10	8.49	55,434.910	0.615	0.00	8.49	624.43
124.20	9.13	58,124.197	0.620	0.00	9.13	654.95
124.30	9.79	60,835.006	0.625	0.00	9.79	685.73

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO2
Scenario: Base

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
124.40	10.46	63,567.424	0.630	0.00	10.46	716.77
124.50	11.15	66,321.536	0.635	0.00	11.15	748.06
124.60	11.86	69,097.428	0.640	0.00	11.86	779.61
124.70	12.58	71,895.186	0.645	0.00	12.58	811.41
124.80	13.31	74,714.895	0.650	0.00	13.31	843.48
124.90	14.06	77,556.642	0.655	0.00	14.06	875.80
125.00	14.82	80,420.512	0.660	0.00	14.82	908.38

Water Quality Routings

Subsection: Level Pool Pond Routing Summary
Label: BIO2 (IN)
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	2.71 ft ³ /s	Time to Peak (Flow, In)	1.100 hours
Flow (Peak Outlet)	0.00 ft ³ /s	Time to Peak (Flow, Outlet)	0.000 hours
Elevation (Water Surface, Peak)	122.00 ft		
Volume (Peak)	3,829.472 ft ³		
Mass Balance (ft ³)			
Volume (Initial)	0.000 ft ³		
Volume (Total Inflow)	3,830.000 ft ³		
Volume (Total Infiltration)	0.000 ft ³		
Volume (Total Outlet Outflow)	0.000 ft ³		
Volume (Retained)	3,829.000 ft ³		
Volume (Unrouted)	0.000 ft ³		
Error (Mass Balance)	0.0 %		

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO3
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.50 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	ZS(+ O) (ft ³ /s)
121.50	0.00	0.000	0.000	0.00	0.00	0.00
121.60	0.00	20.328	0.014	0.00	0.00	0.23
121.70	0.00	162.624	0.056	0.00	0.00	1.81
121.80	0.00	548.856	0.126	0.00	0.00	6.10
121.90	0.00	1,300.992	0.224	0.00	0.00	14.46
122.00	0.00	2,541.000	0.350	0.00	0.00	28.23
122.10	0.00	4,074.092	0.354	0.00	0.00	45.27
122.15	0.00	4,847.025	0.356	0.00	0.00	53.86
122.20	0.02	5,624.231	0.358	0.00	0.02	62.51
122.30	0.09	7,191.511	0.362	0.00	0.09	79.99
122.40	0.19	8,776.027	0.366	0.00	0.19	97.70
122.50	0.31	10,377.873	0.370	0.00	0.31	115.62
122.60	0.45	11,997.142	0.374	0.00	0.45	133.75
122.70	0.61	13,633.930	0.378	0.00	0.61	152.10
122.80	0.79	15,288.330	0.382	0.00	0.79	170.66
122.90	0.97	16,960.438	0.386	0.00	0.97	189.42
123.00	1.18	18,650.346	0.390	0.00	1.18	208.40
123.10	1.39	20,359.769	0.395	0.00	1.39	227.61
123.20	1.61	22,090.447	0.400	0.00	1.61	247.06
123.30	1.85	23,842.512	0.405	0.00	1.85	266.77
123.40	2.10	25,616.093	0.410	0.00	2.10	286.72
123.50	2.35	27,411.324	0.415	0.00	2.35	306.92
123.60	2.62	29,228.334	0.420	0.00	2.62	327.38
123.70	2.89	31,067.256	0.425	0.00	2.89	348.09
123.80	3.18	32,928.220	0.430	0.00	3.18	369.05
123.90	3.47	34,811.358	0.435	0.00	3.47	390.27
124.00	3.77	36,716.802	0.440	0.00	3.77	411.74
124.10	4.08	38,644.059	0.445	0.00	4.08	433.46
124.20	4.40	40,592.626	0.450	0.00	4.40	455.43

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO3
Scenario: Base

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
124.30	4.73	42,562.623	0.455	0.00	4.73	477.65
124.40	5.06	44,554.165	0.460	0.00	5.06	500.11
124.50	5.40	46,567.369	0.465	0.00	5.40	522.82
124.60	5.75	48,602.354	0.470	0.00	5.75	545.78
124.70	6.11	50,659.236	0.475	0.00	6.11	568.99
124.80	6.47	52,738.132	0.480	0.00	6.47	592.45
124.90	6.84	54,839.160	0.485	0.00	6.84	616.16
125.00	7.22	56,962.437	0.490	0.00	7.22	640.13

Water Quality Routings

Subsection: Level Pool Pond Routing Summary
Label: BIO3 (IN)
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration	Infiltration Method (Computed)	No Infiltration
Initial Conditions		
Elevation (Water Surface, Initial)		121.50 ft
Volume (Initial)		0.000 ft ³
Flow (Initial Outlet)		0.00 ft ³ /s
Flow (Initial Infiltration)		0.00 ft ³ /s
Flow (Initial, Total)		0.00 ft ³ /s
Time Increment		0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	3.81 ft ³ /s	Time to Peak (Flow, In)	1.050 hours
Flow (Peak Outlet)	0.00 ft ³ /s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	122.14 ft
Volume (Peak)	4,766.871 ft ³

Mass Balance (ft ³)	
Volume (Initial)	0.000 ft ³
Volume (Total Inflow)	4,767.000 ft ³
Volume (Total Infiltration)	0.000 ft ³
Volume (Total Outlet Outflow)	0.000 ft ³
Volume (Retained)	4,767.000 ft ³
Volume (Unrouted)	0.000 ft ³
Error (Mass Balance)	0.0 %

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO4
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	123.00 ft
Volume (Initial)	0.000 ft ³
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
123.00	0.00	0.000	0.430	0.00	0.00	0.00
123.10	0.00	1,881.611	0.434	0.00	0.00	20.91
123.20	0.00	3,780.337	0.438	0.00	0.00	42.00
123.30	0.00	5,696.253	0.442	0.00	0.00	63.29
123.40	0.00	7,629.439	0.446	0.00	0.00	84.77
123.50	0.00	9,579.972	0.450	0.00	0.00	106.44
123.60	0.00	11,547.928	0.454	0.00	0.00	128.31
123.70	0.00	13,533.386	0.458	0.00	0.00	150.37
123.75	0.00	14,532.702	0.460	0.00	0.00	161.47
123.80	0.00	15,536.423	0.462	0.00	0.00	172.63
123.90	0.03	17,557.116	0.466	0.00	0.03	195.11
124.00	0.08	19,595.543	0.470	0.00	0.08	217.81
124.10	0.11	21,653.497	0.475	0.00	0.11	240.71
124.20	0.13	23,732.790	0.480	0.00	0.13	263.83
124.30	0.15	25,833.532	0.485	0.00	0.15	287.19
124.40	0.17	27,955.835	0.490	0.00	0.17	310.79
124.50	0.19	30,099.807	0.495	0.00	0.19	334.63
124.60	0.20	32,265.560	0.500	0.00	0.20	358.71
124.70	0.21	34,453.202	0.505	0.00	0.21	383.03
124.80	0.23	36,662.845	0.510	0.00	0.23	407.59
124.90	0.24	38,894.598	0.515	0.00	0.24	432.40
125.00	0.25	41,148.571	0.520	0.00	0.25	457.46
125.10	0.26	43,422.252	0.524	0.00	0.26	482.73
125.20	0.27	45,713.099	0.528	0.00	0.27	508.20
125.30	0.28	48,021.177	0.532	0.00	0.28	533.85
125.40	0.29	50,346.549	0.536	0.00	0.29	559.70
125.50	0.30	52,689.281	0.540	0.00	0.30	585.74
125.60	0.31	55,049.437	0.544	0.00	0.31	611.97
125.70	0.32	57,427.081	0.548	0.00	0.32	638.40

2025.09.17 WQ Rainfall.ppc
2/28/2025

Bentley Systems, Inc. Haestad Methods Solution
Center
27 Siemon Corporate Drive Suite 200 W
Watertown, CT 06795 USA +1-203-755-1666

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[10.02.00.01]
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Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: BIO4
Scenario: Base

Return Event: 1 years
Storm Event: wq

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
125.80	0.33	59,822.279	0.552	0.00	0.33	665.02
125.90	0.34	62,235.094	0.556	0.00	0.34	691.84
126.00	0.34	64,665.591	0.560	0.00	0.34	718.85
126.10	0.35	67,113.523	0.564	0.00	0.35	746.06
126.20	0.36	69,578.638	0.568	0.00	0.36	773.46
126.30	0.37	72,060.998	0.572	0.00	0.37	801.05
126.40	0.38	74,560.660	0.576	0.00	0.38	828.83
126.50	0.38	77,077.687	0.580	0.00	0.38	856.80
126.60	0.39	79,612.138	0.584	0.00	0.39	884.97
126.70	0.40	82,164.073	0.588	0.00	0.40	913.33
126.80	0.40	84,733.552	0.592	0.00	0.40	941.89
126.90	0.41	87,320.635	0.596	0.00	0.41	970.64
127.00	0.42	89,925.383	0.600	0.00	0.42	999.59

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Water Quality Routings

Subsection: Level Pool Pond Routing Summary
Label: BIO4 (IN)
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	123.00 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	4.39 ft³/s	Time to Peak (Flow, In)	1.100 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours
Elevation (Water Surface, Peak)	123.31 ft		
Volume (Peak)	5,796.225 ft³		
Mass Balance (ft³)			
Volume (Initial)	0.000 ft³		
Volume (Total Inflow)	5,797.000 ft³		
Volume (Total Infiltration)	0.000 ft³		
Volume (Total Outlet Outflow)	0.000 ft³		
Volume (Retained)	5,796.000 ft³		
Volume (Unrouted)	0.000 ft³		
Error (Mass Balance)	0.0 %		

Water Quality Routings

Subsection: Interconnected Pond Routing Summary
Label: Pond 1
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration		
Infiltration Method (Computed)	No Infiltration	
Initial Conditions		C
Elevation (Starting Water Surface Computed)	118.60	Flow
Volume (Starting)	6,363.000	Min
Outflow (Starting)	0.33	ICPM
	ft ³ /s	

Time to Peak (hours)	2.100	Elevation (ft)	118.60	Maximum Storage Volume (ft³)	6,401.000
----------------------	-------	----------------	--------	------------------------------	-----------

Forward Flow Peaks		Reverse Flow Peaks	
Time to Peak (hours)	Flow (Peak) (ft³/s)	Time to Peak (hours)	Flow (Peak) (ft³/s)
Pond Inflow....	1.050	0.29	0.000
Pond Outflow...	1.100	0.33	0.000

Total Volume In		Total Volume Out	
Volume (ft³)	Direction	Volume (ft³)	Direction
Pond Inflow....	334,000	Forward	0.000
Pond Outflow...	0.000	Reverse	209,000

Mass Balance (ft³)	
Volume (Initial ICPM)	6,363.000 ft³
Volume (Total In ICPM)	334,000 ft³
Volume (Total Out ICPM)	209,000 ft³
Volume (Ending)	6,401.000 ft³
Elevation (Ending)	118.60 ft
Difference	88,000 ft³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	26.3 %

Water Quality Routings

Subsection: Interconnected Pond Routing Summary
Label: Pond 2
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration					
Infiltration Method (Computed)	No Infiltration				
Initial Conditions					
Elevation (Starting Water Surface Computed)	118.60	ft	Flow Tolerance (Minimum)	0.000	ft ³ /s
Volume (Starting)	559.000	ft ³	Maximum Iterations	35	
Outflow (Starting)	0.00	ft ³ /s	ICPM Time Step	0.020	hours

Time to Peak (hours)		Maximum Storage Elevation (ft)	Volume (ft ³)
2.050		118.60	1,123.000
Forward Flow Peaks			
Time to Peak (hours)	Flow (Peak) (ft ³ /s)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Pond Inflow.... 1.100	0.66	0.000	0.00
Pond Outflow... 0.000	0.00	0.000	0.00

Total Volume In		Total Volume Out	
Volume (ft ³)	Direction	Volume (ft ³)	Direction
Pond Inflow.... 571.000	Forward	0.000	Reverse
Pond Outflow... 0.000	Reverse	0.000	Forward

Mass Balance (ft ³)	
Volume (Initial ICPM)	559.000 ft ³
Volume (Total In ICPM)	571.000 ft ³
Volume (Total Out ICPM)	0.000 ft ³
Volume (Ending)	1,123.000 ft ³
Elevation (Ending)	118.60 ft
Difference	7.000 ft ³
Percent of Inflow Volume (Interconnected Pond Mass Balance)	1.2 %

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 5
Scenario: Base

Return Event: 1 years
Storm Event: wq

Infiltration		No Infiltration	
Infiltration Method (Computed)			
Initial Conditions			
Elevation (Water Surface, Initial)	121.80	ft	
Volume (Initial)	0.000	ft ³	
Flow (Initial Outlet)	0.00	ft ³ /s	
Flow (Initial Infiltration)	0.00	ft ³ /s	
Flow (Initial, Total)	0.00	ft ³ /s	
Time Increment	0.050	hours	

Elevation (ft)	Outflow (ft ³ /s)	Storage (ft ³)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	ZS/t + O (ft ³ /s)
121.80	0.00	0.000	0.000	0.00	0.00	0.00
121.90	4.33	225.060	0.155	0.00	4.33	6.83
122.00	25.23	1,800.480	0.620	0.00	25.23	45.24
122.10	64.68	4,522.951	0.630	0.00	64.68	114.94

Water Quality Routings

Subsection: Level Pool Pond Routing Summary
Label: Pond 5 (IN)
Scenario: Base
Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	121.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary

Flow (Peak In)	0.00 ft³/s	Time to Peak (Flow, In)	0.000 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours
Elevation (Water Surface, Peak)	121.80 ft		
Volume (Peak)	0.000 ft³		
Mass Balance (ft³)			
Volume (Initial)	0.000 ft³		
Volume (Total Inflow)	0.000 ft³		
Volume (Total Infiltration)	0.000 ft³		
Volume (Total Outlet Outflow)	0.000 ft³		
Volume (Retained)	0.000 ft³		
Volume (Unrouted)	0.000 ft³		
Error (Mass Balance)	0.0 %		

Water Quality Routings

Subsection: Elevation-Volume-Flow Table (Pond)
Label: Pond 6
Scenario: Base
Return Event: 1 years
Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft³/s)	Storage (ft³)	Area (acres)	Infiltration (ft³/s)	Flow (Total) (ft³/s)	ZS/t + O (ft³/s)
119.80	0.00	0.000	0.000	0.00	0.00	0.00
119.90	0.00	232.320	0.160	0.00	0.00	2.58
120.00	0.00	1,858.560	0.640	0.00	0.00	20.65
120.10	0.00	4,651.807	0.642	0.00	0.00	51.69
120.20	0.00	7,455.880	0.645	0.00	0.00	82.84
120.30	0.00	10,270.802	0.647	0.00	0.00	114.12
120.40	0.00	13,096.593	0.650	0.00	0.00	145.52
120.50	0.00	15,933.274	0.652	0.00	0.00	177.04
120.60	2.71	18,780.866	0.655	0.00	2.71	211.38
120.70	15.31	21,639.390	0.657	0.00	15.31	255.74
120.80	42.18	24,508.866	0.660	0.00	42.18	314.50

Water Quality Routings

Subsection: Level Pool Pond Routing Summary

Label: Pond 6 (IN)

Scenario: Base

Return Event: 1 years

Storm Event: wq

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	119.80 ft
Volume (Initial)	0.000 ft³
Flow (Initial Outlet)	0.00 ft³/s
Flow (Initial Infiltration)	0.00 ft³/s
Flow (Initial, Total)	0.00 ft³/s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	0.00 ft³/s	Time to Peak (Flow, In)	0.000 hours
Flow (Peak Outlet)	0.00 ft³/s	Time to Peak (Flow, Outlet)	0.000 hours

Elevation (Water Surface, Peak)	119.80 ft
Volume (Peak)	0.000 ft³
Mass Balance (ft³)	
Volume (Initial)	0.000 ft³
Volume (Total Inflow)	0.000 ft³
Volume (Total Infiltration)	0.000 ft³
Volume (Total Outlet Outflow)	0.000 ft³
Volume (Retained)	0.000 ft³
Volume (Unrouted)	0.000 ft³
Error (Mass Balance)	0.0 %

Appendix E:
Soil Boring Log & Infiltration Testing, Groundwater Mounding,
Groundwater Recharge



Table 2: Supplemental Infiltration Testing Summary

Test Pit No. / Infiltration Test	Approximate Testing Depth (ft)	Approximate Testing Elevation (Elev.)	Soil Stratum Tested	Stabilized Infiltration Rate (in./hr)	Hydraulic Conductivity (in/hr)	Approximate Limiting Zone Depth (ft)	Limiting Zone Type
TP-3/I-3	4.0	120.0	2	12.0	4.71	-	NE
TP-4/I-4	4.0	120.0	2	12.0	4.55	-	NE
TP-5/I-5	4.0	120.0	2	15.0	6.28	-	NE
TP-6/I-6	4.0	120.0	2	12.0	4.90	-	NE
TP-7/I-7	4.0	120.0	2	27.0	8.22	-	NE
TP-8/I-8	5.0	121.0	2	12.0	4.11	8.0	SHWT
TP-9/I-9	5.0	120.0	2	4.0	1.37	7.0	SHWT
TP-10/I-10	5.0	120.0	2	20.0	6.85	7.5	SHWT
TP-11/I-11	5.0	122.0	2	6.0	2.05	9.0	SHWT
TP-12/I-12	5.0	122.0	2	2.0	0.68	-	NE
TP-13/I-13	5.0	122.0	2	0.5	0.17	9.0	SHWT

*NE - Not Encountered, SHWT - Seasonal High Water Table



TEST PIT LOG

Test Pit TP-3

PAGE 1 OF 1

CLIENT ATH-NJ LLCPROJECT NAME Elk Cannabis Cultivation FacilityPROJECT NUMBER PAUPL23001PROJECT LOCATION 730 Buck Road, Elk Township, New JerseyDATE STARTED 1/16/25COMPLETED 1/16/25GROUND ELEVATION 124.0'EXCAVATION CONTRACTOR Ambient Group, LLC

WATER ENCOUNTERED:

EXCAVATION METHOD ExcavatorDURING EXCAVATION -OPERATOR / HELPER Mike RitortoAT END OF EXCAVATION -LOGGED BY O. SidwellCHECKED BY M. ArkanAFTER EXCAVATION -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.0	123.0
2.5				Burnt orange to dark brown C/M/F SAND, some C/F rounded gravel, trace silt	
			2		
5.0				Tan to light brown to brown F/M/C SAND, trace C/F rounded gravel, trace silt	
7.5					
				8.0	116.0

Test Pit terminated at 8.0 feet.

I-3 @ 4ft

NOTES:



TEST PIT LOG

Test Pit TP-4

PAGE 1 OF 1

CLIENT ATH-NJ LLC**PROJECT NAME** Elk Cannabis Cultivation Facility**PROJECT NUMBER** PAUPL23001**PROJECT LOCATION** 730 Buck Road, Elk Township, New Jersey**DATE STARTED** 1/16/25**COMPLETED** 1/16/25**GROUND ELEVATION** 124.0'**EXCAVATION CONTRACTOR** Ambient Group, LLC**WATER ENCOUNTERED:****EXCAVATION METHOD** Excavator**DURING EXCAVATION** -**OPERATOR / HELPER** Mike Ritorto**AT END OF EXCAVATION** -**LOGGED BY** O. Sidwell**CHECKED BY** M. Arkan**AFTER EXCAVATION** -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.5	122.5
2.5				Dark brown to brown gray C/M/F SAND, some C/F rounded gravel, little silt	
			2	Orange to brown to tan F/M/C SAND, little C/F rounded gravel, trace silt	I-4 @ 4ft
5.0					
7.5					
				8.0	116.0

Test Pit terminated at 8.0 feet.

NOTES:



TEST PIT LOG

Test Pit TP-5

PAGE 1 OF 1

CLIENT ATH-NJ LLCPROJECT NAME Elk Cannabis Cultivation FacilityPROJECT NUMBER PAUPL23001PROJECT LOCATION 730 Buck Road, Elk Township, New JerseyDATE STARTED 1/16/25COMPLETED 1/16/25GROUND ELEVATION 124.0'EXCAVATION CONTRACTOR Ambient Group, LLC

WATER ENCOUNTERED:

EXCAVATION METHOD ExcavatorDURING EXCAVATION -OPERATOR / HELPER Mike RitortoAT END OF EXCAVATION -LOGGED BY O. SidwellCHECKED BY M. ArkanAFTER EXCAVATION -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.0	123.0
2.5			2	Orange brown to light brown to tan to gray C/M/F SAND, some C/F rounded gravel, little to trace silt	
5.0					
7.5					
				8.0	116.0

Test Pit terminated at 8.0 feet.

I-5 @ 4ft

NOTES:



TEST PIT LOG

Test Pit TP-6

PAGE 1 OF 1

CLIENT ATH-NJ LLC**PROJECT NAME** Elk Cannabis Cultivation Facility**PROJECT NUMBER** PAUPL23001**PROJECT LOCATION** 730 Buck Road, Elk Township, New Jersey**DATE STARTED** 1/16/25**COMPLETED** 1/16/25**GROUND ELEVATION** 124.0'**EXCAVATION CONTRACTOR** Ambient Group, LLC**WATER ENCOUNTERED:****EXCAVATION METHOD** Excavator**DURING EXCAVATION** -**OPERATOR / HELPER** Mike Ritorto**AT END OF EXCAVATION** -**LOGGED BY** O. Sidwell**CHECKED BY** M. Arkan**AFTER EXCAVATION** -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.0	123.0
2.5				Orange to brown to tan C/M/F SAND, some C/F rounded gravel, trace silt	
			2		
5.0				Brown to tan F/M/C SAND, little C/F gravel, trace silt	
7.5					
				8.0	116.0

Test Pit terminated at 8.0 feet.

I-6 @ 4ft

NOTES:



TEST PIT LOG

Test Pit TP-7

PAGE 1 OF 1

CLIENT ATH-NJ LLC

PROJECT NAME Elk Cannabis Cultivation Facility

PROJECT NUMBER PAUPL23001

PROJECT LOCATION 730 Buck Road, Elk Township, New Jersey

DATE STARTED 1/16/25

COMPLETED 1/16/25

GROUND ELEVATION 124.0'

EXCAVATION CONTRACTOR Ambient Group, LLC

WATER ENCOUNTERED:

EXCAVATION METHOD Excavator

DURING EXCAVATION -

OPERATOR / HELPER Mike Ritorto

AT END OF EXCAVATION -

LOGGED BY O. Sidwell

CHECKED BY M. Arkan

AFTER EXCAVATION -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.0	123.0
				Dark brown C/M/F SAND, some C/F rounded gravel , trace silt	
2.5					
5.0			2	Orange brown to tan C/M/F SAND, some C/F rounded gravel, trace silt	I-7 @ 4ft
7.5					
				8.0	116.0

Test Pit terminated at 8.0 feet.

NOTES:



TEST PIT LOG

Test Pit TP-8

PAGE 1 OF 1

CLIENT ATH-NJ LLC

PROJECT NAME Elk Cannabis Cultivation Facility

PROJECT NUMBER PAUPL23001

PROJECT LOCATION 730 Buck Road, Elk Township, New Jersey

DATE STARTED 1/17/25

COMPLETED 1/17/25

GROUND ELEVATION 126.0'

EXCAVATION CONTRACTOR Ambient Group, LLC

WATER ENCOUNTERED:

EXCAVATION METHOD Excavator

▽ DURING EXCAVATION 10.5' / Elev 115.5'

OPERATOR / HELPER Mike Ritorto

AT END OF EXCAVATION -

LOGGED BY O. Sidwell

CHECKED BY M. Arkan

AFTER EXCAVATION -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.0	125.0
2.5				Brown to orange brown to tan C/M/F SAND, some C/F rounded gravel, little to trace silt	
			2		
5.0					I-8 @ 5ft
7.5					
				Light gray streaks, soil mottling	SHWT @ 8ft
10.0					
▽				10.5	115.5

Test Pit terminated at 10.5 feet.

GW @ 10.5ft

NOTES:



TEST PIT LOG

Test Pit TP-9

PAGE 1 OF 1

CLIENT ATH-NJ LLC**PROJECT NAME** Elk Cannabis Cultivation Facility**PROJECT NUMBER** PAUPL23001**PROJECT LOCATION** 730 Buck Road, Elk Township, New Jersey**DATE STARTED** 1/17/25**COMPLETED** 1/17/25**GROUND ELEVATION** 125.0'**EXCAVATION CONTRACTOR** Ambient Group, LLC**WATER ENCOUNTERED:****EXCAVATION METHOD** Excavator**DURING EXCAVATION** -**OPERATOR / HELPER** Mike Ritorto**AT END OF EXCAVATION** -**LOGGED BY** O. Sidwell**CHECKED BY** M. Arkan**AFTER EXCAVATION** -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.0	124.0
2.5				Brown to dark gray to light brown to tan C/M/F SAND, some C/F rounded Gravel, little Silt	
5.0					I-9 @ 5ft
			2	Orange brown to tan C/M/F SAND, little C/F gravel, trace silt	
				Light gray streaks, soil mottling	SHWT @ 7ft
7.5					
10.0					
				10.5	114.5
Test Pit terminated at 10.5 feet.					

NOTES:



TEST PIT LOG

Test Pit TP-10

PAGE 1 OF 1

CLIENT ATH-NJ LLC**PROJECT NAME** Elk Cannabis Cultivation Facility**PROJECT NUMBER** PAUPL23001**PROJECT LOCATION** 730 Buck Road, Elk Township, New Jersey**DATE STARTED** 1/17/25**COMPLETED** 1/17/25**GROUND ELEVATION** 125.0'**EXCAVATION CONTRACTOR** Ambient Group, LLC**WATER ENCOUNTERED:****EXCAVATION METHOD** Excavator**DURING EXCAVATION** -**OPERATOR / HELPER** Mike Ritorto**AT END OF EXCAVATION** -**LOGGED BY** O. Sidwell**CHECKED BY** M. Arkan**AFTER EXCAVATION** -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.0	124.0
2.5				Dark gray to tan to dark brown C/M/F SAND AND C/F rounded GRAVEL, little silt	
5.0				Brown to orange brown to tan C/M/F SAND, some to little C/F rounded gravel, trace silt	I-10 @ 5ft
			2		
7.5				Light gray streaks, soil mottling	SHWT @ 7.5ft
10.0					
				10.5	114.5
Test Pit terminated at 10.5 feet.					

NOTES:

NOTES:



TEST PIT LOG

Test Pit TP-12

PAGE 1 OF 1

CLIENT ATH-NJ LLC

PROJECT NAME Elk Cannabis Cultivation Facility

PROJECT NUMBER PAUPL23001

PROJECT LOCATION 730 Buck Road, Elk Township, New Jersey

DATE STARTED 1/17/25

COMPLETED 1/17/25

GROUND ELEVATION 127.0'

EXCAVATION CONTRACTOR Ambient Group, LLC

WATER ENCOUNTERED:

EXCAVATION METHOD Excavator

DURING EXCAVATION -

OPERATOR / HELPER Mike Ritorto

AT END OF EXCAVATION -

LOGGED BY O. Sidwell

CHECKED BY M. Arkan

AFTER EXCAVATION -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.5	125.5
2.5				Orange brown to brown to dark gray C/M/F SAND, some C/F rounded gravel, trace silt	
5.0			2	Orange brown to dark brown C/M/F SAND, some C/F rounded gravel, trace silt	I-12 @ 5ft
7.5					
10.0					
				10.5	116.5
Test Pit terminated at 10.5 feet.					

NOTES:



TEST PIT LOG

Test Pit TP-13

PAGE 1 OF 1

CLIENT ATH-NJ LLC**PROJECT NAME** Elk Cannabis Cultivation Facility**PROJECT NUMBER** PAUPL23001**PROJECT LOCATION** 730 Buck Road, Elk Township, New Jersey**DATE STARTED** 1/17/25**COMPLETED** 1/17/25**GROUND ELEVATION** 127.0'**EXCAVATION CONTRACTOR** Ambient Group, LLC**WATER ENCOUNTERED:****EXCAVATION METHOD** Excavator▽ DURING EXCAVATION 10.0' / Elev 117.0'**OPERATOR / HELPER** Mike Ritorto**AT END OF EXCAVATION** -**LOGGED BY** O. Sidwell**CHECKED BY** M. Arkan**AFTER EXCAVATION** -

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	STRATA	DESCRIPTION	REMARKS
0.0				Depth	Elev.
			1	Grayish brown F/M SAND, some C/F rounded gravel, little silt	
				1.0	126.0
2.5				Orange brown to brown C/M/F SAND, some C/F rounded gravel, trace silt	
5.0					I-13 @ 5ft
			2		
7.5					
				Soil mottling with light gray streaks	SHWT @ 9ft
10.0▽					GW @ 10ft
				11.0	116.0
Test Pit terminated at 11.0 feet.					

NOTES:



Infiltration Test Number: I-3

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/16/2025
Project Location: Elk, NJ	Test Location: TP-3	Testing Depth (ft): 4.0
Test Performed By: O. Sidwell	Ring Seating Depth (in): 3	Ring Diameter (in): 5.5
Ground Surface Elev. 124	Proposed BMP Elev. 120	Testing Elev. 120
Test Soil Strata: SAND		
Limiting Zones: NE		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	5.00	0.00	5.00	18.00	16.67	5.71
1	5.00	0.00	5.00	21.00	14.29	4.89
2	5.00	0.00	5.00	20.00	15.00	5.14
3	5.00	0.00	5.00	25.00	12.00	4.11
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						4.71



Infiltration Test Number: I-4

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/16/2025
Project Location: Elk, NJ	Test Location: TP-4	Testing Depth (ft): 4.0
Test Performed By: O. Sidwell	Ring Seating Depth (in): 2	Ring Diameter (in): 5.5
Ground Surface Elev. 124	Proposed BMP Elev. 120	Testing Elev. 120
Test Soil Strata: SAND		
Limiting Zones: NE		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	6.00	0.00	6.00	16.00	22.50	7.70
1	6.00	0.00	6.00	21.00	17.14	5.87
2	6.00	0.00	6.00	30.00	12.00	4.11
3	6.00	0.00	6.00	30.00	12.00	4.11
4	6.00	0.00	6.00	30.00	12.00	4.11
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						4.55



Infiltration Test Number: I-5

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/16/2025
Project Location: Elk, NJ	Test Location: TP-5	Testing Depth (ft): 4.0
Test Performed By: O. Sidwell	Ring Seating Depth (in): 3	Ring Diameter (in): 5.5
Ground Surface Elev. 124	Proposed BMP Elev. 120	Testing Elev. 120
Test Soil Strata: SAND		
Limiting Zones: NE		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	5.00	0.00	5.00	15.00	20.00	6.85
1	5.00	0.00	5.00	15.00	20.00	6.85
2	5.00	0.00	5.00	15.00	20.00	6.85
3	5.00	0.00	5.00	20.00	15.00	5.14
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						6.28



Infiltration Test Number: I-6

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/16/2025
Project Location: Elk, NJ	Test Location: TP-6	Testing Depth (ft): 4.0
Test Performed By: O. Sidwell	Ring Seating Depth (in): 2	Ring Diameter (in): 5.5
Ground Surface Elev. 124	Proposed BMP Elev. 120	Testing Elev. 120
Test Soil Strata: SAND		
Limiting Zones: NE		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	6.00	0.00	6.00	15.00	24.00	8.22
1	6.00	0.00	6.00	19.00	18.95	6.49
2	6.00	0.00	6.00	30.00	12.00	4.11
3	6.00	0.00	6.00	30.00	12.00	4.11
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						4.90



Infiltration Test Number: I-7

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/16/2025
Project Location: Elk, NJ	Test Location: TP-7	Testing Depth (ft): 4.0
Test Performed By: O. Sidwell	Ring Seating Depth (in): 2	Ring Diameter (in): 5.5
Ground Surface Elev. 124	Proposed BMP Elev. 120	Testing Elev. 120
Test Soil Strata: SAND		
Limiting Zones: NE		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	4.50	0.00	4.50	12.00	22.50	7.70
1	4.50	0.00	4.50	15.00	18.00	6.16
2	4.50	0.00	4.50	10.00	27.00	9.24
3	4.50	0.00	4.50	10.00	27.00	9.24
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						8.22



Infiltration Test Number: I-8

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/17/2025
Project Location: Elk, NJ	Test Location: TP-8	Testing Depth (ft): 5
Test Performed By: O. Sidwell	Ring Seating Depth (in): 3	Ring Diameter (in): 5.5
Ground Surface Elev. 126	Proposed BMP Elev. 120	Testing Elev. 121
Test Soil Strata: SAND		
Limiting Zones: SHWT @ 8 ft (Elev. 118)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	5.00	0.00	5.00	15.00	20.00	6.85
1	5.00	4.00	1.00	5.00	12.00	4.11
2	5.00	4.00	1.00	5.00	12.00	4.11
3	5.00	4.00	1.00	5.00	12.00	4.11
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						4.11



Infiltration Test Number: I-9

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/17/2025
Project Location: Elk, NJ	Test Location: TP-9	Testing Depth (ft): 5
Test Performed By: O. Sidwell	Ring Seating Depth (in): 2.5	Ring Diameter (in): 5.5
Ground Surface Elev. 125	Proposed BMP Elev. 120	Testing Elev. 120
Test Soil Strata: SAND		
Limiting Zones: SHWT @ 7 ft (Elev. 118)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	5.50	0.00	5.50	85.00	3.88	1.33
1	5.50	4.50	1.00	15.00	4.00	1.37
2	5.50	4.50	1.00	15.00	4.00	1.37
3	5.50	4.50	1.00	15.00	4.00	1.37
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						1.37



Infiltration Test Number: I-10

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/17/2025
Project Location: Elk, NJ	Test Location: TP-10	Testing Depth (ft): 5
Test Performed By: O. Sidwell	Ring Seating Depth (in): 3	Ring Diameter (in): 5.5
Ground Surface Elev. 125	Proposed BMP Elev. 120	Testing Elev. 120
Test Soil Strata: SAND		
Limiting Zones: SHWT @ 7.5 ft (Elev. 117.5)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	5.00	0.00	5.00	15.00	20.00	6.85
1	5.00	4.00	1.00	3.00	20.00	6.85
2	5.00	4.00	1.00	3.00	20.00	6.85
3	5.00	4.00	1.00	3.00	20.00	6.85
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						6.85



Infiltration Test Number: I-11

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/17/2025
Project Location: Elk, NJ	Test Location: TP-11	Testing Depth (ft): 5
Test Performed By: O. Sidwell	Ring Seating Depth (in): 3	Ring Diameter (in): 5.5
Ground Surface Elev. 127	Proposed BMP Elev. 120	Testing Elev. 122
Test Soil Strata: SAND		
Limiting Zones: SHWT @ 9 ft (Elev. 118)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	5.00	0.00	5.00	40.00	7.50	2.57
1	5.00	4.00	1.00	10.00	6.00	2.05
2	5.00	4.00	1.00	10.00	6.00	2.05
3	5.00	4.00	1.00	10.00	6.00	2.05
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						2.05



Infiltration Test Number: I-12

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/17/2025
Project Location: Elk, NJ	Test Location: TP-12	Testing Depth (ft): 5
Test Performed By: O. Sidwell	Ring Seating Depth (in): 3	Ring Diameter (in): 5.5
Ground Surface Elev. 127	Proposed BMP Elev. 120	Testing Elev. 122
Test Soil Strata: SAND		
Limiting Zones: NE		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	5.00	0.00	5.00	140.00	2.14	0.73
1	5.00	4.00	1.00	30.00	2.00	0.68
2	5.00	4.00	1.00	30.00	2.00	0.68
3	5.00	4.00	1.00	30.00	2.00	0.68
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						0.68



Infiltration Test Number: I-13

Project: Elk Cannabis Cultivation Facility	Project Number: PAUPL23001	Date: 01/17/2025
Project Location: Elk, NJ	Test Location: TP-13	Testing Depth (ft): 5
Test Performed By: O. Sidwell	Ring Seating Depth (in): 3	Ring Diameter (in): 5.5
Ground Surface Elev. 127	Proposed BMP Elev. 120	Testing Elev. 122
Test Soil Strata: SAND		
Limiting Zones: SHWT @ 9 ft (Elev. 118)		

Trial #	Initial Water Height (in.)	Final Water Height (in.)	Δ Height (in.)	Δ Time (min)	Infiltration Rate (in/hr)	Converted Hydraulic Conductivity (in/hr)
Pre Soak	5.00	3.50	1.50	120.00	0.75	0.26
1	5.00	4.50	0.50	60.00	0.50	0.17
2						
3						
4						
5						
6						
7						
8						
9						
10						
Hydraulic Conductivity (in/hr)						0.17

Test Boring – Test Pit – Auger Probe Log Key Sheet

LEGEND

COLUMN	DESCRIPTION
Depth	Depth in feet below ground surface.
Description	Description of sample including color, texture, and classification of subsurface material as applicable. Estimated depths to bottom of Strata as interpolated from the boring are also shown.
Stratum	Strata numbers as assigned by the geotechnical engineer.
Sample No.	Split barrel sample and sample number (S-x) Undisturbed Tube sample and sample number (U-x) Rock core run and core number (R-x) NR indicates "No Recovery."
Blow Counts	Soils (ASTM D 1586): Indicates number of blows obtained for each 6 inches of penetration of the standard split-barrel sampler. Rock (ASTM D 2113): indicates percent recovery (REC) per length of run and rock quality designation (RQD). RQD is the sum of rock pieces that are 4 inches or longer in length in one run divided by the total core run.
Recovery	For soil samples indicates the length of recovery in the sample spoon.
Remarks	Special conditions or test data noted during drilling.
Ground Water	Free water level as shown (*); *Free water level as noted may not be indicative of daily, seasonal, or long term fluctuations.

DESCRIPTIVE TERMS

RELATIVE PROPORTIONS

<u>Descriptive Term</u>	<u>Symbol</u>	<u>Estimated Percentages</u>
Trace	tr	1 to 10
Little	l	10 to 20
Some	sm	20 to 35
And	and	35 to 50

GRADATION OF COARSE GRAINED COMPONENTS

<u>Soil Component</u>	<u>Size Range</u>	<u>Particle Size</u> <u>Maximum</u>	<u>Minimum</u>
Boulders		-	12"
Cobbles		12"	3"
Gravel	Coarse	3"	¾"
	Fine	¾"	#4 Sieve
Sand	Coarse	#4 Sieve	#10 Sieve
	Medium	#10 Sieve	#40 Sieve
	Fine	#40 Sieve	#200 Sieve
Silt		#200 Sieve	.005 mm
Clay		.005 mm	-

COMPOSITION OF COARSE-GRAINED COMPONENTS

<u>Gradation Designation</u>	<u>Symbol</u>	<u>Defining Proportions</u>
Coarse to Fine	CF	All fractions greater than 10% of the component
Coarse to Medium	CM	Less than 10% Fine
Medium to Fine	MF	Less than 10% Coarse
Coarse	C	Less than 10% Fine and Medium
Medium	M	Less than 10% Coarse and Fine
Fine	F	Less than 10% Coarse and Medium

ESTIMATED DRAIN TIME CALCULATIONS AND INTERACTIVE GROUNDWATER MOUNDING EVALUATION



Name of Facility: Elk Cannabis Cultivation Facility
Location: Elk Township, Gloucester Co

Duration of Infiltration Period, t = volume of runoff to be infiltrated (cf)
Infiltration area (sf) x in/hr x 1

Basin	Input Variables			Output Drain Time	Adjusted Rate	Mound Height by Hantush Spreadsheet	Estimated Seasonal High Water	Groundwater Mound	Bottom of Basin
Basin	Volume (CF)	Infiltration area (SF)	Permeability rate (in/hr)	Drain Time (hr)	Y/N	Ft.	ESHW (Elev)	GWM (ELEV)	Bottom of Basin (Elev)
BIO1*	3027	11521	6.00	0.53	N	1.77	116.00	117.77	121.50
BIO2*	6049	22622	6.00	0.53	N	1.77	116.00	117.77	121.50
BIO3*	10337	15105	2.00	4.11	N	4.53	118.00	122.53	121.50
BIO3**	10337	15105	0.25	32.85	Y	3.18	118.00	121.18	121.50
BIO4*	19449	18828	1.00	12.40	N	6.75	118.00	124.75	122.80
BIO4**	19449	18828	0.18	68.87	Y	4.72	118.00	122.72	122.80

* With safety factor of 2

** Adjusted recharge rate

NOTE:

Adjustment of the recharge rate to a lower value allows slower infiltration of runoff and more time for the infiltrated runoff to dissipate into the saturated zone.

A reduced recharge rate will have a smaller mounding height but result in a longer duration of infiltration period.

Several trials of different reduced recharge rates may be needed to find which recharge rate works.

The duration of infiltration period based on the reduced recharge rate may not exceed 72 hours.

Input Values

R
6.00
Sy
0.150
Kh
30.00
x
48.000
y
61.000
t
0.53
hi(0)
10.00

Recharge rate (permeability rate) (in/hr)
Specific yield, Sy (dimensionless)
default value is 0.15; max value is 0.2 provided that a lab test data is submitted
Horizontal hydraulic conductivity (in/hr)
Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
1/2 length of basin (x direction, in feet)
1/2 width of basin (y direction, in feet)
Duration of infiltration period (hours)
Initial thickness of saturated zone (feet)

h(max)
11.767
Δh(max)
1.767

Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
Maximum groundwater mounding (beneath center of basin at end of infiltration period)

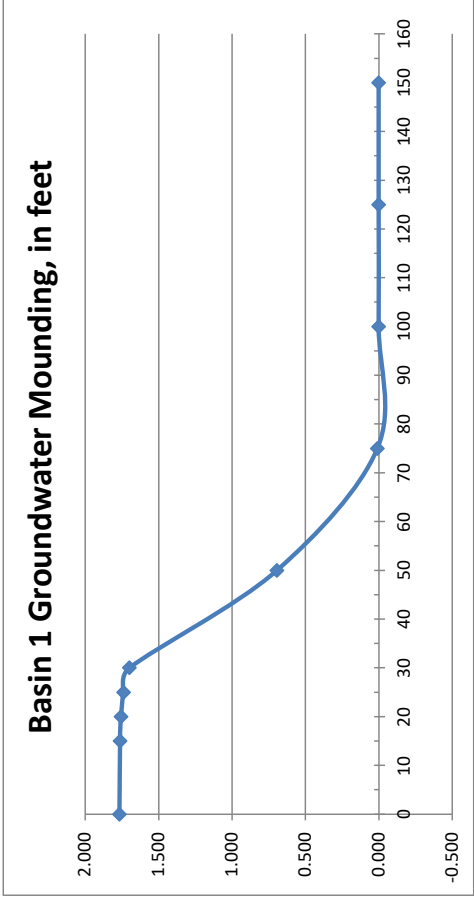
Distance from

Ground-water center of basin in x
Mounding, in feet direction, in feet

1.767	0
1.764	15
1.757	20
1.740	25
1.700	30
0.694	50
0.010	75
0.001	100
0.001	125
0.001	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

R
6.00
Sy
0.150
Kh
30.00
x
48.000
y
119.000
t
0.53
hi(0)
10.00

Recharge rate (permeability rate) (in/hr)
Specific yield, Sy (dimensionless)
default value is 0.15; max value is 0.2 provided that a lab test data is submitted
Horizontal hydraulic conductivity (in/hr)
Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
1/2 length of basin (x direction, in feet)
1/2 width of basin (y direction, in feet)
Duration of infiltration period (hours)
Initial thickness of saturated zone (feet)

h(max)
11.767
Δh(max)
1.767

Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
Maximum groundwater mounding (beneath center of basin at end of infiltration period)

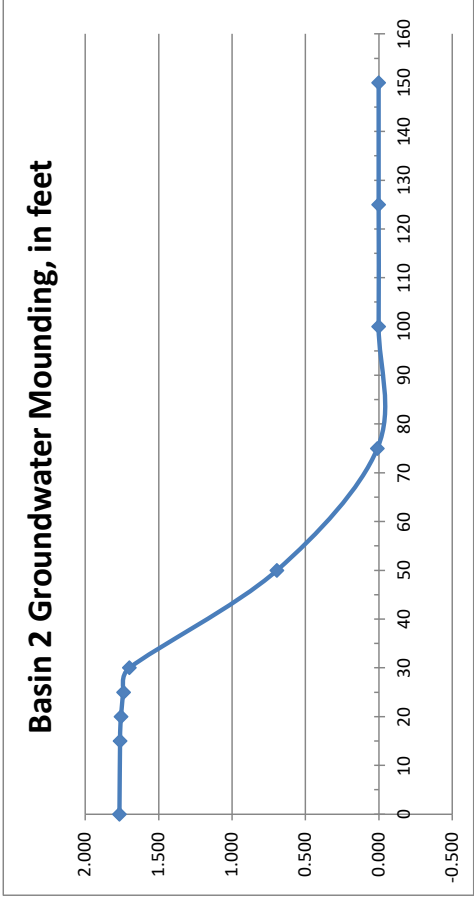
Distance from

Ground-water center of basin in x
Mounding, in feet direction, in feet

1.767	0
1.764	15
1.757	20
1.740	25
1.700	30
0.694	50
0.010	75
0.001	100
0.001	125
0.001	150



Re-Calculate Now



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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

R
2.00
Sy
0.150
Kh
10.00
x
75.000
y
52.000
t
4.11
hi(0)
10.00

Recharge rate (permeability rate) (in/hr)
Specific yield, S_y (dimensionless)
default value is 0.15; max value is 0.2 provided that a lab test data is submitted
Horizontal hydraulic conductivity (in/hr)
 $K_h = 5 \times \text{Recharge Rate (R) in the costal plan; } K_h = R \text{ outside the coastal plan}$
1/2 length of basin (x direction, in feet)
1/2 width of basin (y direction, in feet)
Duration of infiltration period (hours)
Initial thickness of saturated zone (feet)

h(max)
14.537
$\Delta h(\text{max})$
4.537

Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
Maximum groundwater mounding (beneath center of basin at end of infiltration period)

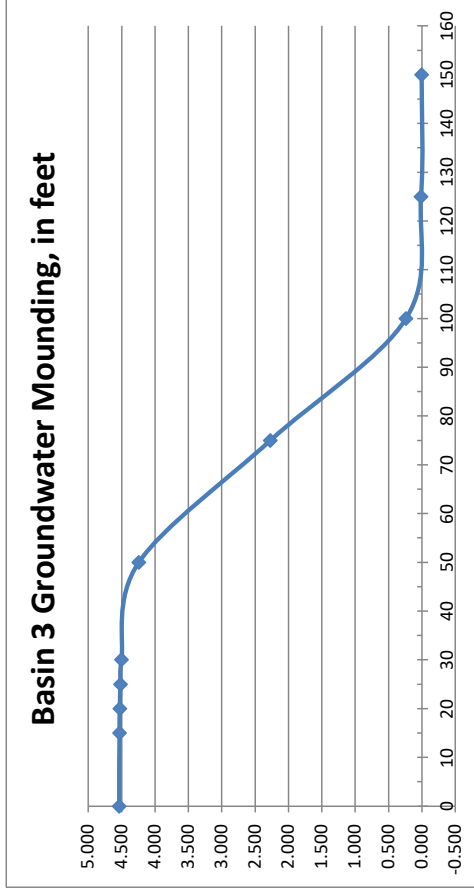
Distance from

Ground-water center of basin in x
Mounding, in feet direction, in feet

4.537	0
4.533	15
4.528	20
4.519	25
4.503	30
4.243	50
2.274	75
0.238	100
0.011	125
0.002	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

R
0.25
Sy
0.150
Kh
10.00
x
75.000
y
52.000
t
32.80
hi(0)
10.00

Recharge rate (permeability rate) (in/hr)
Specific yield, Sy (dimensionless)
default value is 0.15; max value is 0.2 provided that a lab test data is submitted
Horizontal hydraulic conductivity (in/hr)
Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
1/2 length of basin (x direction, in feet)
1/2 width of basin (y direction, in feet)
Duration of infiltration period (hours)
Initial thickness of saturated zone (feet)

h(max)
13.180
Δh(max)
3.180

Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
Maximum groundwater mounding (beneath center of basin at end of infiltration period)

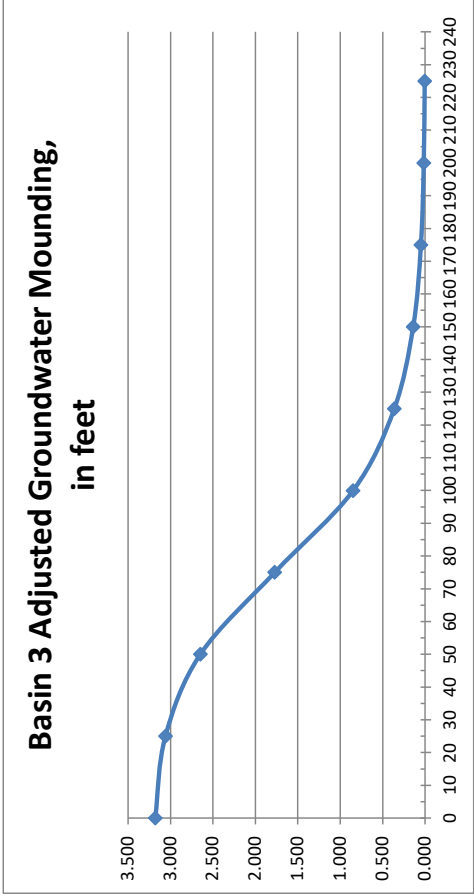
Distance from

Ground-water center of basin in x
Mounding, in feet direction, in feet

	0
3.180	25
3.060	50
2.649	75
1.774	100
0.847	125
0.362	150
0.139	175
0.048	200
0.016	225
0.005	



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Input Values

R
1.00
Sy
0.150
Kh
5.00
x
71.000
y
57.000
t
12.40
hi(0)
10.00

Recharge rate (permeability rate) (in/hr)
Specific yield, Sy (dimensionless)
default value is 0.15; max value is 0.2 provided that a lab test data is submitted
Horizontal hydraulic conductivity (in/hr)
Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
1/2 length of basin (x direction, in feet)
1/2 width of basin (y direction, in feet)
Duration of infiltration period (hours)
Initial thickness of saturated zone (feet)

h(max)
16.749
Δh(max)
6.749

Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
Maximum groundwater mounding (beneath center of basin at end of infiltration period)

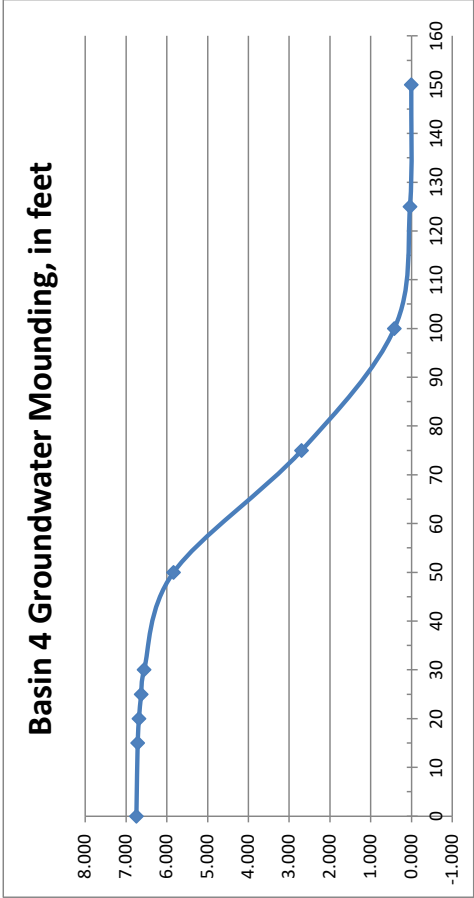
Distance from

Ground-water center of basin in x
Mounding, in feet direction, in feet

6.749	0
6.714	15
6.681	20
6.631	25
6.558	30
5.838	50
2.697	75
0.417	100
0.035	125
0.004	150



Re-Calculate Now



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Input Values

R	0.18
Sy	0.150
Kh	5.00
x	71.000
y	57.000
t	68.87
hi(0)	10.00

Recharge rate (permeability rate) (in/hr)
Specific yield, Sy (dimensionless)
default value is 0.15; max value is 0.2 provided that a lab test data is submitted
Horizontal hydraulic conductivity (in/hr)
Kh = 5xRecharge Rate (R) in the costal plan; Kh=R outside the coastal plan
1/2 length of basin (x direction, in feet)
1/2 width of basin (y direction, in feet)
Duration of infiltration period (hours)
Initial thickness of saturated zone (feet)

h(max)	14.723
Δh(max)	4.723

Maximum thickness of saturated zone (beneath center of basin at end of infiltration period)
Maximum groundwater mounding (beneath center of basin at end of infiltration period)

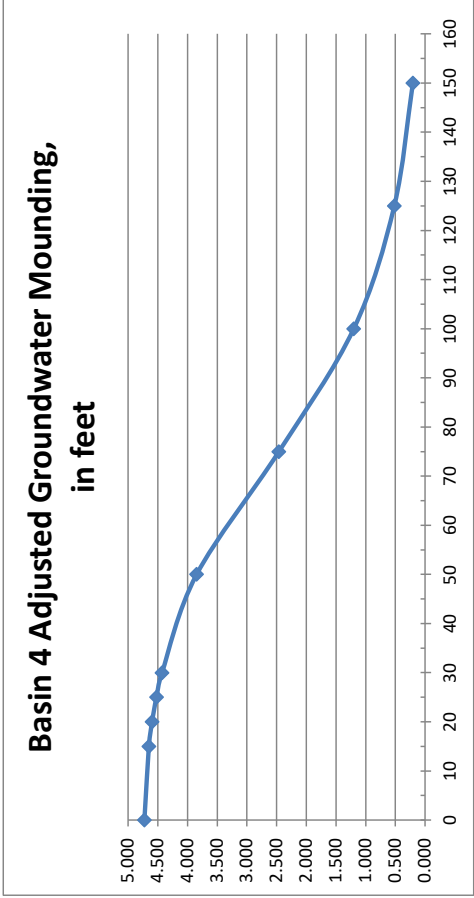
Distance from

Ground-water center of basin in x
Mounding, in feet direction, in feet

4.723	0
4.652	15
4.596	20
4.523	25
4.431	30
3.848	50
2.464	75
1.200	100
0.520	125
0.203	150



Re-Calculate Now



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PRE-DEVELOPED 2YR PROJECTED RAINFALL

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
EDA-1 Imp	2yr projected	2	426.000	12.100	0.16
EDA-1 Perv	2yr projected	2	9.000	24.000	0.00
EDA-2 Imp	2yr projected	2	8,584.000	12.100	3.20
EDA-2 Perv	2yr projected	2	38,036.000	12.400	4.85
EDA-3 Perv	2yr projected	2	923.000	12.150	0.22
EDA-4 Perv	2yr projected	2	1,714.000	12.150	0.42
EDA-5 Perv	2yr projected	2	8,419.000	12.150	1.95
EDA-6 Perv	2yr projected	2	15,428.000	12.250	2.55
EDA-7 Perv	2yr projected	2	3,960.000	12.200	0.72
EDA-8 Perv	2yr projected	2	1,028.000	12.200	0.19
EDA-9 Perv	2yr projected	2	13,298.000	12.200	2.64

TOTAL = 91,825 CF

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
POI 2	2yr projected	2	0.000	0.000	0.00
POI 3	2yr projected	2	8,419.000	12.200	1.91
POI 4	2yr projected	2	4,989.000	12.200	0.91
POI-5	2yr projected	2	13,298.000	12.200	2.64

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
Pond 1 (IN)	2yr projected	2	436.000	12.100	0.16	(N/A)	(N/A)
Pond 1 (OUT)	2yr projected	2	12.000	0.000	0.13	118.64	6,801.000
Pond 1 (Reverse)	2yr projected	2	-1.000	11.850	-0.02	(N/A)	(N/A)
Pond 2 (IN)	2yr projected	2	49,269.000	12.300	6.03	(N/A)	(N/A)
Pond 2 (OUT)	2yr projected	2	0.000	0.000	0.00	118.89	49,817.000
Pond 5 (IN)	2yr projected	2	8,419.000	12.150	1.95	(N/A)	(N/A)
Pond 5 (OUT)	2yr projected	2	8,419.000	12.200	1.91	121.84	19.000
Pond 6 (IN)	2yr projected	2	15,428.000	12.250	2.55	(N/A)	(N/A)
Pond 6 (OUT)	2yr projected	2	0.000	0.000	0.00	120.48	15,427.000

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Subsection: Unit Hydrograph Summary
Label: EDA-1 Imp
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.040 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.16 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.16 ft ³ /s

Drainage Area	
SCS CN (Composite)	91.000
Area (User Defined)	0.040 acres
Maximum Retention (Pervious)	1.0 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.9 in
Runoff Volume (Pervious)	425.616 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	426.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	1.32 ft ³ /s

Subsection: Unit Hydrograph Summary

Label: EDA-1 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Subsection: Unit Hydrograph Summary

Label: EDA-1 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	0.070 acres

Computational Time	
Increment	0.008 hours
Time to Peak (Computed)	24.007 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24.000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.070 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	9.456 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	9.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	0.73 ft³/s

Subsection: Unit Hydrograph Summary

Label: EDA-1 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.372 hours
Total unit time, Tb	0.414 hours

Subsection: Unit Hydrograph Summary

Label: EDA-2 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	0.780 acres

Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	3.20 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.20 ft³/s

Drainage Area	
SCS CN (Composite)	92.000
Area (User Defined)	0.780 acres
Maximum Retention (Pervious)	0.9 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.0 in
Runoff Volume (Pervious)	8,581.104 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,584.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	19.54 ft³/s

Subsection: Unit Hydrograph Summary

Label: EDA-2 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.155 hours
Total unit time, Tb	0.172 hours

Subsection: Unit Hydrograph Summary

Label: EDA-2 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.414 hours
Area (User Defined)	8,670 acres

Computational Time	
Increment	0.055 hours
Time to Peak (Computed)	12.366 hours
Flow (Peak, Computed)	4.87 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.400 hours
Flow (Peak Interpolated Output)	4.85 ft³/s

Drainage Area	
SCS CN (Composite)	69,000
Area (User Defined)	8,670 acres
Maximum Retention (Pervious)	4.5 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.2 in
Runoff Volume (Pervious)	38,033,997 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	38,036,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.414 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	13.84 ft³/s

Subsection: Unit Hydrograph Summary

Label: EDA-2 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.276 hours
Unit receding limb, Tr	2.429 hours
Total unit time, Tb	2.705 hours

Subsection: Unit Hydrograph Summary

Label: EDA-3 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26.000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	0.140 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.168 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)	0.22 ft³/s

Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.8 in
Runoff Volume (Pervious)	922.630 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	923.000 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
Unit peak, qp	0.62 ft³/s

Subsection: Unit Hydrograph Summary

Label: EDA-3 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.100 hours
Unit receding limb, Tr	0.876 hours
Total unit time, Tb	0.976 hours

Subsection: Unit Hydrograph Summary

Label: EDA-4 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.144 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.152 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)	0.42 ft³/s

Drainage Area	
SCS CN (Composite)	78,000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.8 in
Runoff Volume (Pervious)	1,713,455 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,714,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.144 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	1.20 ft³/s

Subsection: Unit Hydrograph Summary

Label: EDA-4 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.096 hours
Unit receding limb, Tr	0.842 hours
Total unit time, Tb	0.938 hours

Subsection: Unit Hydrograph Summary

Label: EDA-5 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.146 hours
Area (User Defined)	1,740 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	1.96 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	1.95 ft³/s

Drainage Area	
SCS CN (Composite)	71,000
Area (User Defined)	1,740 acres
Maximum Retention (Pervious)	4.1 in
Maximum Retention (Pervious, 20 percent)	0.8 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.3 in
Runoff Volume (Pervious)	8,419,064 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	8,419,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.146 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	7.88 ft³/s

Subsection: Unit Hydrograph Summary

Label: EDA-5 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.097 hours
Unit receding limb, Tr	0.857 hours
Total unit time, Tb	0.954 hours

Subsection: Unit Hydrograph Summary

Label: EDA-6 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.251 hours
Area (User Defined)	3,900 acres

Computational Time Increment	0.033 hours
Time to Peak (Computed)	12.259 hours
Flow (Peak, Computed)	2.55 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	2.55 ft ³ /s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	3,900 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	15,428,178 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	15,428,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.251 hours
Computational Time Increment	0.033 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	10.29 ft ³ /s

Subsection: Unit Hydrograph Summary

Label: EDA-6 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.167 hours
Unit receding limb, Tr	1.470 hours
Total unit time, Tb	1.637 hours

Subsection: Unit Hydrograph Summary

Label: EDA-7 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.217 hours
Area (User Defined)	0.950 acres

Computational Time Increment	0.029 hours
Time to Peak (Computed)	12.211 hours
Flow (Peak, Computed)	0.72 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.72 ft³/s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	0.950 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	3,960.384 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,960.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.217 hours
Computational Time Increment	0.029 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	2.90 ft³/s

Subsection: Unit Hydrograph Summary

Label: EDA-7 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.144 hours
Unit receding limb, Tr	1.270 hours
Total unit time, Tb	1.415 hours

Subsection: Unit Hydrograph Summary

Label: EDA-8 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.204 hours
Area (User Defined)	0.260 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	12.215 hours
Flow (Peak, Computed)	0.19 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.19 ft³/s

Drainage Area	
SCS CN (Composite)	67,000
Area (User Defined)	0.260 acres
Maximum Retention (Pervious)	4.9 in
Maximum Retention (Pervious, 20 percent)	1.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	1,028,545 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,028,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.204 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	0.84 ft³/s

Subsection: Unit Hydrograph Summary

Label: EDA-8 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.136 hours
Unit receding limb, Tr	1.197 hours
Total unit time, Tb	1.333 hours

Subsection: Unit Hydrograph Summary

Label: EDA-9 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.185 hours
Area (User Defined)	3.190 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	12.193 hours
Flow (Peak, Computed)	2.65 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	2.64 ft ³ /s

Drainage Area	
SCS CN (Composite)	68.000
Area (User Defined)	3.190 acres
Maximum Retention (Pervious)	4.7 in
Maximum Retention (Pervious, 20 percent)	0.9 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	13,298,551 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,298,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.185 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	11.39 ft ³ /s

Subsection: Unit Hydrograph Summary
Label: EDA-9 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.123 hours
Unit receding limb, Tr	1.086 hours
Total unit time, Tb	1.209 hours

POST-DEVELOPED 2YR PROJECTED RAINFALL

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
PDA-1 Imp	2yr projected	2	1,593.000	12.100	0.59
PDA-1 Perv	2yr projected	2	32.000	24.000	0.00
PDA-10 Imp	2yr projected	2	20,546.000	12.100	6.36
PDA-10 Perv	2yr projected	2	224.000	20.650	0.01
PDA-11 Imp	2yr projected	2	13,608.000	12.100	3.75
PDA-11 Perv	2yr projected	2	116.000	20.650	0.00
PDA-12 Imp	2yr projected	2	25,485.000	12.100	8.64
PDA-12 Perv	2yr projected	2	147.000	20.650	0.00
PDA-13 Imp	2yr projected	2	22,946.000	12.100	7.02
PDA-13 Perv	2yr projected	2	3,797.000	12.250	0.55
PDA-2 Imp	2yr projected	2	11,732.000	12.100	4.47
PDA-2 Perv	2yr projected	2	4,751.000	12.600	0.43
PDA-4 Perv	2yr projected	2	473.000	12.100	0.14
PDA-5 Perv	2yr projected	2	1,420.000	12.200	0.27
PDA-6 Perv	2yr projected	2	78.000	20.600	0.00
PDA-7 Imp	2yr projected	2	2,535.000	12.150	0.56
PDA-7 Perv	2yr projected	2	147.000	20.600	0.00
PDA-8 Perv	2yr projected	2	14.000	20.650	0.00
PDA-9 Imp	2yr projected	2	6,804.000	12.100	2.04
PDA-9 Perv	2yr projected	2	822.000	12.950	0.05

TOTAL = 117,270 CF

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
J-1	2yr projected	2	26,514.000	14.600	0.59
POI 2	2yr projected	2	0.000	0.000	0.00
POI 3	2yr projected	2	1,420.000	12.200	0.27
POI 4	2yr projected	2	2,843.000	12.150	0.56
POI-5	2yr projected	2	7,627.000	12.100	2.04

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
BIO1 (IN)	2yr projected	2	26,743.000	12.100	7.33	(N/A)	(N/A)
BIO1 (OUT)	2yr projected	2	14,586.000	12.200	5.15	122.61	9,135.000
BIO2 (IN)	2yr projected	2	41,001.000	12.100	8.60	(N/A)	(N/A)
BIO2 (OUT)	2yr projected	2	26,514.000	14.600	0.59	122.61	18,011.000
BIO3 (IN)	2yr projected	2	25,632.000	12.100	8.64	(N/A)	(N/A)
BIO3 (OUT)	2yr projected	2	12,691.000	13.200	0.54	122.94	17,599.000

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
BIO4 (IN)	2yr projected	2	20,770.000	12.100	6.36	(N/A)	(N/A)
BIO4 (OUT)	2yr projected	2	1,657.000	24.050	0.05	123.99	19,443.000
Pond 1 (IN)	2yr projected	2	1,626.000	12.100	0.59	(N/A)	(N/A)
Pond 1 (OUT)	2yr projected	2	368.000	12.100	0.34	118.71	7,544.000
Pond 1 (Reverse)	2yr projected	2	-1.000	12.900	-0.01	(N/A)	(N/A)
Pond 2 (IN)	2yr projected	2	43,843.000	12.100	5.17	(N/A)	(N/A)
Pond 2 (OUT)	2yr projected	2	0.000	0.000	0.00	118.86	44,418.000
Pond 5 (IN)	2yr projected	2	1,420.000	12.200	0.27	(N/A)	(N/A)
Pond 5 (OUT)	2yr projected	2	1,420.000	12.200	0.27	121.81	0.000
Pond 6 (IN)	2yr projected	2	78.000	20.600	0.00	(N/A)	(N/A)
Pond 6 (OUT)	2yr projected	2	0.000	0.000	0.00	119.83	9.000

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PDA-7 Perv					

Subsection: Unit Hydrograph Summary

Label: PDA-1 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.020 hours
Area (User Defined)	0.140 acres
Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.099 hours
Flow (Peak, Computed)	0.60 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.59 ft³/s

Drainage Area	
SCS CN (Composite)	93.000
Area (User Defined)	0.140 acres
Maximum Retention (Pervious)	0.8 in
Maximum Retention (Pervious, 20 percent)	0.2 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	1,591,848 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,593,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.020 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	4.63 ft³/s

Subsection: Unit Hydrograph Summary

Label: PDA-1 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.013 hours
Unit receding limb, Tr	0.117 hours
Total unit time, Tb	0.131 hours

Subsection: Unit Hydrograph Summary

Label: PDA-1 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.063 hours
Area (User Defined)	0.240 acres

Computational Time Increment	0.008 hours
Time to Peak (Computed)	24,007 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	24,000 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39,000
Area (User Defined)	0.240 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	32,422 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	32,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.063 hours
Computational Time Increment	0.008 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	2.50 ft³/s

Subsection: Unit Hydrograph Summary

Label: PDA-1 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.042 hours
Unit receding limb, Tr	0.372 hours
Total unit time, Tb	0.414 hours

Subsection: Unit Hydrograph Summary

Label: PDA-10 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.049 hours
Area (User Defined)	1,540 acres

Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.106 hours
Flow (Peak, Computed)	6.40 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	6.36 ft ³ /s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1,540 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	20,545,809 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	20,546,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.049 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	20.76 ft ³ /s

Subsection: Unit Hydrograph Summary

Label: PDA-10 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.033 hours
Unit receding limb, Tr	0.288 hours
Total unit time, Tb	0.320 hours

Subsection: Unit Hydrograph Summary

Label: PDA-10 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.266 hours
Area (User Defined)	1.660 acres

Computational Time Increment	0.036 hours
Time to Peak (Computed)	20.673 hours
Flow (Peak, Computed)	0.01 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.01 ft ³ /s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.660 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	224.256 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	224.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.266 hours
Computational Time Increment	0.036 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	4.12 ft ³ /s

Subsection: Unit Hydrograph Summary

Label: PDA-10 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.178 hours
Unit receding limb, Tr	1.563 hours
Total unit time, Tb	1.741 hours

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26.000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.073 hours
Area (User Defined)	1.020 acres
Computational Time Increment	0.010 hours
Time to Peak (Computed)	12.115 hours
Flow (Peak, Computed)	3.84 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.75 ft ³ /s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.020 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	13,608.265 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,608.000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.073 hours
Computational Time Increment	0.010 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	9.23 ft ³ /s

Subsection: Unit Hydrograph Summary
Label: PDA-11 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.049 hours
Unit receding limb, Tr	0.428 hours
Total unit time, Tb	0.477 hours

Subsection: Unit Hydrograph Summary

Label: PDA-11 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.231 hours
Area (User Defined)	0.860 acres

Computational Time Increment	0.031 hours
Time to Peak (Computed)	20.637 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.860 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	116.183 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	116.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.231 hours
Computational Time Increment	0.031 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	2.46 ft³/s

Subsection: Unit Hydrograph Summary

Label: PDA-11 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.154 hours
Unit receding limb, Tr	1.355 hours
Total unit time, Tb	1.509 hours

Subsection: Unit Hydrograph Summary

Label: PDA-12 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.023 hours
Area (User Defined)	1.910 acres

Computational Time Increment	0.003 hours
Time to Peak (Computed)	12.098 hours
Flow (Peak, Computed)	8.64 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	8.64 ft ³ /s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1.910 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	25,482,129 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	25,485,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.023 hours
Computational Time Increment	0.003 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	53.91 ft ³ /s

Subsection: Unit Hydrograph Summary

Label: PDA-12 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.016 hours
Unit receding limb, Tr	0.137 hours
Total unit time, Tb	0.153 hours

Subsection: Unit Hydrograph Summary

Label: PDA-12 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.229 hours
Area (User Defined)	1,090 acres
Computational Time Increment	0.031 hours
Time to Peak (Computed)	20.654 hours
Flow (Peak, Computed)	0.00 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.00 ft ³ /s

Drainage Area	
SCS CN (Composite)	39,000
Area (User Defined)	1,090 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	147,253 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	147,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.229 hours
Computational Time Increment	0.031 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	3.15 ft ³ /s

Subsection: Unit Hydrograph Summary

Label: PDA-12 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.153 hours
Unit receding limb, Tr	1.342 hours
Total unit time, Tb	1.495 hours

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.052 hours
Area (User Defined)	1,720 acres
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.103 hours
Flow (Peak, Computed)	7.05 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	7.02 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	1,720 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	22,947,265 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	22,946,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.052 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	22.06 ft³/s

Subsection: Unit Hydrograph Summary
Label: PDA-13 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.034 hours
Unit receding limb, Tr	0.302 hours
Total unit time, Tb	0.337 hours

Subsection: Unit Hydrograph Summary

Label: PDA-13 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.151 hours
Area (User Defined)	1.950 acres

Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.232 hours
Flow (Peak, Computed)	0.55 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.250 hours
Flow (Peak Interpolated Output)	0.55 ft ³ /s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	1.950 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	3,796.856 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,797,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.151 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	8.54 ft ³ /s

Subsection: Unit Hydrograph Summary

Label: PDA-13 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.101 hours
Unit receding limb, Tr	0.885 hours
Total unit time, Tb	0.986 hours

Subsection: Unit Hydrograph Summary

Label: PDA-2 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26.000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.026 hours
Area (User Defined)	1.140 acres
Computational Time Increment	0.004 hours
Time to Peak (Computed)	12.101 hours
Flow (Peak, Computed)	4.48 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.47 ft³/s
Drainage Area	
SCS CN (Composite)	90.000
Area (User Defined)	1.140 acres
Maximum Retention (Pervious)	1.1 in
Maximum Retention (Pervious, 20 percent)	0.2 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.8 in
Runoff Volume (Pervious)	11,727.328 ft³
Hydrograph Volume (Area under Hydrograph curve)	
Volume	11,732.000 ft³
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.026 hours
Computational Time Increment	0.004 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	28.55 ft³/s

Subsection: Unit Hydrograph Summary

Label: PDA-2 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.018 hours
Unit receding limb, Tr	0.155 hours
Total unit time, Tb	0.172 hours

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.414 hours
Area (User Defined)	2.440 acres

Computational Time Increment	0.055 hours
Time to Peak (Computed)	12.587 hours
Flow (Peak, Computed)	0.43 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.600 hours
Flow (Peak Interpolated Output)	0.43 ft ³ /s

Drainage Area	
SCS CN (Composite)	56.000
Area (User Defined)	2.440 acres
Maximum Retention (Pervious)	7.9 in
Maximum Retention (Pervious, 20 percent)	1.6 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.5 in
Runoff Volume (Pervious)	4,750,946 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	4,751,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.414 hours
Computational Time Increment	0.055 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	3.90 ft ³ /s

Subsection: Unit Hydrograph Summary
Label: PDA-2 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.276 hours
Unit receding limb, Tr	2.429 hours
Total unit time, Tb	2.705 hours

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.053 hours
Area (User Defined)	0.170 acres
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.114 hours
Flow (Peak, Computed)	0.15 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.14 ft ³ /s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.170 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.8 in
Runoff Volume (Pervious)	473,440 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	473,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.053 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	2.10 ft ³ /s

Subsection: Unit Hydrograph Summary
Label: PDA-4 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.036 hours
Unit receding limb, Tr	0.314 hours
Total unit time, Tb	0.349 hours

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.146 hours
Area (User Defined)	0.510 acres

Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.168 hours
Flow (Peak, Computed)	0.27 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.200 hours
Flow (Peak Interpolated Output)	0.27 ft ³ /s

Drainage Area	
SCS CN (Composite)	61.000
Area (User Defined)	0.510 acres
Maximum Retention (Pervious)	6.4 in
Maximum Retention (Pervious, 20 percent)	1.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.8 in
Runoff Volume (Pervious)	1,420.319 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	1,420,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.146 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	2.31 ft ³ /s

Subsection: Unit Hydrograph Summary
Label: PDA-5 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.097 hours
Unit receding limb, Tr	0.857 hours
Total unit time, Tb	0.954 hours

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.135 hours
Area (User Defined)	0.580 acres
Computational Time Increment	0.018 hours
Time to Peak (Computed)	20.585 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.600 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.580 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	78.355 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	78,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.135 hours
Computational Time Increment	0.018 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	2.83 ft³/s

Subsection: Unit Hydrograph Summary
Label: PDA-6 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.090 hours
Unit receding limb, Tr	0.794 hours
Total unit time, Tb	0.884 hours

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.141 hours
Area (User Defined)	0.190 acres
Computational Time Increment	0.019 hours
Time to Peak (Computed)	12.152 hours
Flow (Peak, Computed)	0.56 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)	98.000
Area (User Defined)	0.190 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	2,534,873 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	2,535,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.141 hours
Computational Time Increment	0.019 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	0.89 ft³/s

Subsection: Unit Hydrograph Summary
Label: PDA-7 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.094 hours
Unit receding limb, Tr	0.825 hours
Total unit time, Tb	0.919 hours

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.190 hours
Area (User Defined)	1.090 acres

Computational Time Increment	0.025 hours
Time to Peak (Computed)	20.624 hours
Flow (Peak, Computed)	0.00 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.600 hours
Flow (Peak Interpolated Output)	0.00 ft³/s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	1.090 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	147.254 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	147,000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.190 hours
Computational Time Increment	0.025 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	3.79 ft³/s

Subsection: Unit Hydrograph Summary
Label: PDA-7 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.127 hours
Unit receding limb, Tr	1.115 hours
Total unit time, Tb	1.241 hours

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.209 hours
Area (User Defined)	0.100 acres

Computational Time Increment	0.028 hours
Time to Peak (Computed)	20.625 hours
Flow (Peak, Computed)	0.00 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	20.650 hours
Flow (Peak Interpolated Output)	0.00 ft ³ /s

Drainage Area	
SCS CN (Composite)	39.000
Area (User Defined)	0.100 acres
Maximum Retention (Pervious)	15.6 in
Maximum Retention (Pervious, 20 percent)	3.1 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.0 in
Runoff Volume (Pervious)	13.509 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	14,000 ft ³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.209 hours
Computational Time Increment	0.028 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	0.32 ft ³ /s

Subsection: Unit Hydrograph Summary
Label: PDA-8 Perv
Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.139 hours
Unit receding limb, Tr	1.225 hours
Total unit time, Tb	1.364 hours

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26.000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.056 hours
Area (User Defined)	0.510 acres
Computational Time Increment	0.007 hours
Time to Peak (Computed)	12.106 hours
Flow (Peak, Computed)	2.06 ft³/s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.04 ft³/s

Drainage Area	
SCS CN (Composite)	98.000
Area (User Defined)	0.510 acres
Maximum Retention (Pervious)	0.2 in
Maximum Retention (Pervious, 20 percent)	0.0 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.7 in
Runoff Volume (Pervious)	6,804.132 ft³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	6,804.000 ft³

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.056 hours
Computational Time Increment	0.007 hours
Unit Hydrograph Shape Factor	284.057
K Factor	0.440
Receding/Rising, Tr/Tp	3.544
Unit peak, qp	6.04 ft³/s

Subsection: Unit Hydrograph Summary
Label: PDA-9 Imp

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.037 hours
Unit receding limb, Tr	0.327 hours
Total unit time, Tb	0.365 hours

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

Storm Event	2
Return Event	2 years
Duration	26,000 hours
Depth	3.9 in
Time of Concentration (Composite)	0.279 hours
Area (User Defined)	1.070 acres
Computational Time Increment	0.037 hours
Time to Peak (Computed)	12.967 hours
Flow (Peak, Computed)	0.05 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.950 hours
Flow (Peak Interpolated Output)	0.05 ft ³ /s

Drainage Area	
SCS CN (Composite)	47.000
Area (User Defined)	1.070 acres
Maximum Retention (Pervious)	11.3 in
Maximum Retention (Pervious, 20 percent)	2.3 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.2 in
Runoff Volume (Pervious)	822.389 ft ³

Hydrograph Volume (Area under Hydrograph curve)	
Volume	822,000 ft ³

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
Unit peak, qp	2.53 ft ³ /s

Subsection: Unit Hydrograph Summary
Label: PDA-9 Perv

Scenario: 2yr projected

Return Event: 2 years
Storm Event: 2

SCS Unit Hydrograph Parameters	
Unit peak time, Tp	0.186 hours
Unit receding limb, Tr	1.639 hours
Total unit time, Tb	1.826 hours

Appendix F:
Spillway Calculations, Rip Rap Calculations, Swale Calculations,
Pipe Calculations



EMERGENCY SPILLWAY
BIORETENTION BASIN 2

Composite Outlet Structure Detailed Report: Spillway Bio 2

Element Details			
Label	Spillway Bio 2	Notes	
Headwater Range			
Headwater Type	User Defined Headwater	Increment (Headwater)	0.10 ft
Minimum (Headwater)	124.00 ft	Maximum (Headwater)	126.20 ft
SpotElevation (ft)			
Tailwater Setup			
Tailwater Type	Free Outfall		
Tailwater Tolerances			
Maximum Iterations	30	Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft	Flow Tolerance (Minimum)	0.001 ft³/s
Headwater Tolerance (Maximum)	0.50 ft	Flow Tolerance (Maximum)	10.000 ft³/s
Tailwater Tolerance (Minimum)	0.01 ft		
Outlet Structure			
Outlet Structure Type	Weir		
Outlet Structure (IDs and Direction)			
Outlet ID	Weir - 1	Downstream ID	Tailwater
Flow Direction	Forward Flow Only	Notes	
Outlet Structure (Advanced)			
Elevation (On)	0.00 ft	Elevation (Off)	0.00 ft
Outlet Structure (Weir)			
Weir Vary Coefficient with Depth	Irregular Weir False	Weir Coefficient	3.00 (ft^0.5)/s

Irregular Weir Cross-section

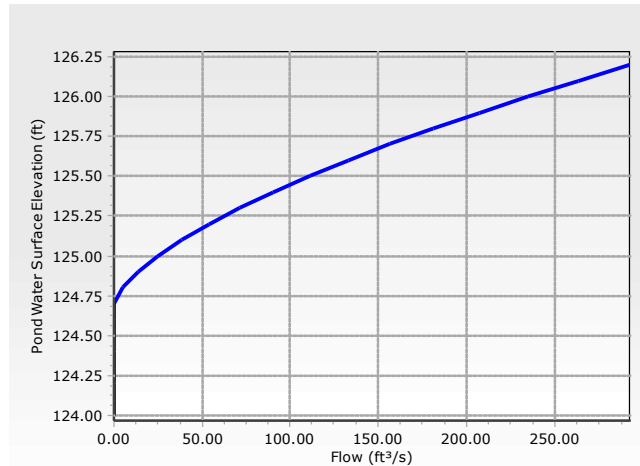
Station (ft)	Elevation (ft)
0.00	126.20
4.50	124.70
54.50	124.70
59.00	126.20

50' WIDE BOTTOM WIDTH
3:1 SIDE SLOPES

EMERGENCY SPILLWAY BIORETENTION BASIN 2

Composite Outlet Structure Detailed Report: Spillway Bio 2

Outlet Structure (Common)	
Elevation	0.00 ft
Outlet Structure (Weir, Advanced)	
User Defined Table	False



RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Weir - 1 (Irregular Weir)

Upstream ID = (Pond Water Surface)

Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
124.00	0.00	(N/A)	0.00
124.10	0.00	(N/A)	0.00
124.20	0.00	(N/A)	0.00
124.30	0.00	(N/A)	0.00
124.40	0.00	(N/A)	0.00
124.50	0.00	(N/A)	0.00
124.60	0.00	(N/A)	0.00
124.70	0.00	(N/A)	0.00
124.80	4.76	(N/A)	0.00
124.90	13.53	(N/A)	0.00

EMERGENCY SPILLWAY BIORETENTION BASIN 2

Composite Outlet Structure Detailed Report: Spillway Bio 2

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Weir - 1 (Irregular Weir)

Upstream ID = (Pond Water Surface)

Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
125.00	24.96	(N/A)	0.00
125.10	38.59	(N/A)	0.00
125.20	54.16	(N/A)	0.00
125.30	71.49	(N/A)	0.00
125.40	90.46	(N/A)	0.00
125.50	110.97	(N/A)	0.00
125.60	132.96	(N/A)	0.00
125.70	156.36	(N/A)	0.00
125.80	181.13	(N/A)	0.00
125.90	207.22	(N/A)	0.00
126.00	234.60	(N/A)	0.00
126.10	263.23	(N/A)	0.00
126.20	293.10	(N/A)	0.00

100-YR PROJECTED RAINFALL
BASIN 2 INFLOW = 49.96 CFS

Computation Messages

E < Y min=124.70
E < Y min=124.70
E < Y min=124.70
E < Y min=124.70
E < Y min=124.70
E < Y min=124.70
E < Y min=124.70
E = Y min=124.70
Max.H=.10;
Max.Htw=free out;; W(ft)
=50.60
Max.H=.20;
Max.Htw=free out;; W(ft)
=51.20
Max.H=.30;
Max.Htw=free out;; W(ft)
=51.80
Max.H=.40;
Max.Htw=free out;; W(ft)
=52.40
Max.H=.50;
Max.Htw=free out;; W(ft)
=53.00
Max.H=.60;
Max.Htw=free out;; W(ft)
=53.60

EMERGENCY SPILLWAY
BIORETENTION BASIN 2

Composite Outlet Structure Detailed Report: Spillway Bio 2

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Weir - 1 (Irregular Weir)

Upstream ID = (Pond Water Surface)

Downstream ID = Tailwater (Pond Outfall)

Computation Messages

Max.H=.70; Max.Htw=free out;; W(ft) =54.20 Max.H=.80; Max.Htw=free out;; W(ft) =54.80 Max.H=.90; Max.Htw=free out;; W(ft) =55.40 Max.H=1.00; Max.Htw=free out;; W(ft) =56.00 Max.H=1.10; Max.Htw=free out;; W(ft) =56.60 Max.H=1.20; Max.Htw=free out;; W(ft) =57.20 Max.H=1.30; Max.Htw=free out;; W(ft) =57.80 Max.H=1.40; Max.Htw=free out;; W(ft) =58.40 Max.H=1.50; Max.Htw=free out;; W(ft) =59.00
--

EMERGENCY SPILLWAY
BIORETENTION BASIN 2

Composite Outlet Structure Detailed Report: Spillway Bio 2

Composite Rating Table

Tailwater Elevation = Free Outfall (Spillway Bio 2)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
124.00	0.00	(N/A)	0.00
124.10	0.00	(N/A)	0.00
124.20	0.00	(N/A)	0.00
124.30	0.00	(N/A)	0.00
124.40	0.00	(N/A)	0.00
124.50	0.00	(N/A)	0.00
124.60	0.00	(N/A)	0.00
124.70	0.00	(N/A)	0.00
124.80	4.76	(N/A)	0.00
124.90	13.53	(N/A)	0.00
125.00	24.96	(N/A)	0.00
125.10	38.59	(N/A)	0.00
125.20	54.16	(N/A)	0.00
125.30	71.49	(N/A)	0.00
125.40	90.46	(N/A)	0.00
125.50	110.97	(N/A)	0.00
125.60	132.96	(N/A)	0.00
125.70	156.36	(N/A)	0.00
125.80	181.13	(N/A)	0.00
125.90	207.22	(N/A)	0.00
126.00	234.60	(N/A)	0.00
126.10	263.23	(N/A)	0.00
126.20	293.10	(N/A)	0.00

Contributing Structures

None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
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Weir - 1
Weir - 1
Weir - 1
Weir - 1

EMERGENCY SPILLWAY
BIORETENTION BASIN 2

Composite Outlet Structure Detailed Report: Spillway Bio 2

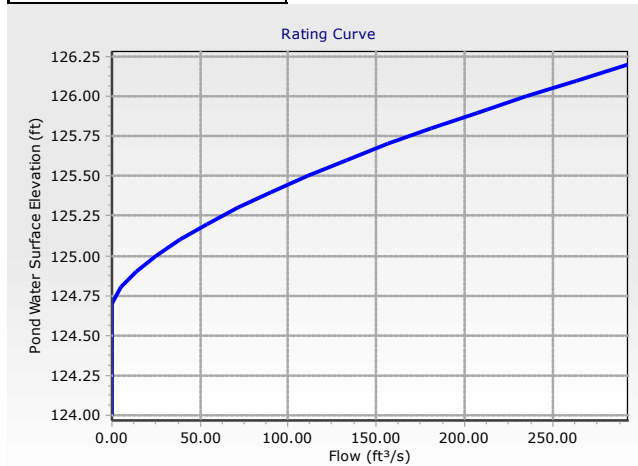
Composite Rating Table

Tailwater Elevation = Free Outfall (Spillway Bio 2)

Contributing Structures

Weir - 1

Weir - 1



EMERGENCY SPILLWAY
BIORETENTION BASIN 4

Composite Outlet Structure Detailed Report: Spillway Bio 4

Element Details			
Label	Spillway Bio 4	Notes	
Headwater Range			
Headwater Type	User Defined Headwater	Increment (Headwater)	0.10 ft
Minimum (Headwater)	125.00 ft	Maximum (Headwater)	127.67 ft
SpotElevation (ft)			
Tailwater Setup			
Tailwater Type	Free Outfall		
Tailwater Tolerances			
Maximum Iterations	30	Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft	Flow Tolerance (Minimum)	0.001 ft³/s
Headwater Tolerance (Maximum)	0.50 ft	Flow Tolerance (Maximum)	10.000 ft³/s
Tailwater Tolerance (Minimum)	0.01 ft		
Outlet Structure			
Outlet Structure Type	Weir		
Outlet Structure (IDs and Direction)			
Outlet ID	Weir - 1	Downstream ID	Tailwater
Flow Direction	Forward Flow Only	Notes	
Outlet Structure (Advanced)			
Elevation (On)	0.00 ft	Elevation (Off)	0.00 ft
Outlet Structure (Weir)			
Weir Vary Coefficient with Depth	Irregular Weir False	Weir Coefficient	3.00 (ft^0.5)/s

Irregular Weir Cross-section

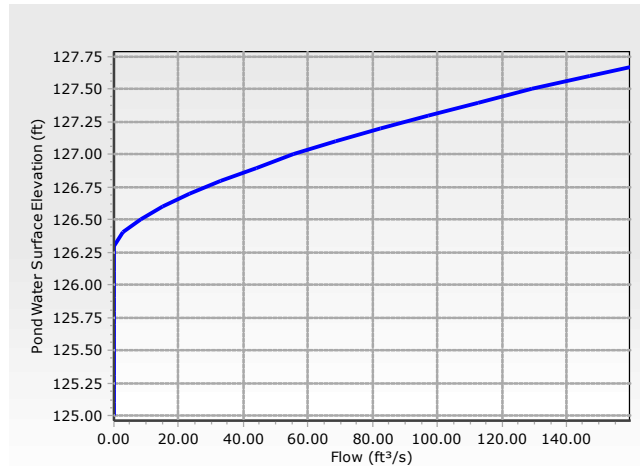
Station (ft)	Elevation (ft)
0.00	127.67
4.50	126.30
34.50	126.30
39.00	127.67

30' WIDE BOTTOM WIDTH
3:1 SIDE SLOPES

EMERGENCY SPILLWAY BIORETENTION BASIN 4

Composite Outlet Structure Detailed Report: Spillway Bio 4

Outlet Structure (Common)	
Elevation	0.00 ft
Outlet Structure (Weir, Advanced)	
User Defined Table	False



RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Weir - 1 (Irregular Weir)

Upstream ID = (Pond Water Surface)

Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft³/s)	Tailwater Elevation (ft)	Convergence Error (ft)
125.00	0.00	(N/A)	0.00
125.10	0.00	(N/A)	0.00
125.20	0.00	(N/A)	0.00
125.30	0.00	(N/A)	0.00
125.40	0.00	(N/A)	0.00
125.50	0.00	(N/A)	0.00
125.60	0.00	(N/A)	0.00
125.70	0.00	(N/A)	0.00
125.80	0.00	(N/A)	0.00
125.90	0.00	(N/A)	0.00

EMERGENCY SPILLWAY BIORETENTION BASIN 4

Composite Outlet Structure Detailed Report: Spillway Bio 4

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Weir - 1 (Irregular Weir)

Upstream ID = (Pond Water Surface)

Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
126.00	0.00	(N/A)	0.00
126.10	0.00	(N/A)	0.00
126.20	0.00	(N/A)	0.00
126.30	0.00	(N/A)	0.00
126.40	2.87	(N/A)	0.00
126.50	8.17	(N/A)	0.00
126.60	15.13	(N/A)	0.00
126.70	23.47	(N/A)	0.00
126.80	33.05	(N/A)	0.00
126.90	43.77	(N/A)	0.00
127.00	55.57	(N/A)	0.00
127.10	68.39	(N/A)	0.00
127.20	82.20	(N/A)	0.00
127.30	96.97	(N/A)	0.00
127.40	112.67	(N/A)	0.00
127.50	129.30	(N/A)	0.00
127.60	146.83	(N/A)	0.00
127.67	159.63	(N/A)	0.00

100-YR PROJECTED RAINFALL
BASIN 4 INFLOW = 21.28 CFS

Computation Messages

E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E < Y min=126.30
E = Y min=126.30
Max.H=.10;
Max.Htw=free out;; W(ft)
=30.66
Max.H=.20;
Max.Htw=free out;; W(ft)
=31.31

EMERGENCY SPILLWAY
BIORETENTION BASIN 4

Composite Outlet Structure Detailed Report: Spillway Bio 4

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Weir - 1 (Irregular Weir)

Upstream ID = (Pond Water Surface)

Downstream ID = Tailwater (Pond Outfall)

Computation Messages

Max.H=.30; Max.Htw=free out;; W(ft) =31.97 Max.H=.40; Max.Htw=free out;; W(ft) =32.63 Max.H=.50; Max.Htw=free out;; W(ft) =33.28 Max.H=.60; Max.Htw=free out;; W(ft) =33.94 Max.H=.70; Max.Htw=free out;; W(ft) =34.60 Max.H=.80; Max.Htw=free out;; W(ft) =35.26 Max.H=.90; Max.Htw=free out;; W(ft) =35.91 Max.H=1.00; Max.Htw=free out;; W(ft) =36.57 Max.H=1.10; Max.Htw=free out;; W(ft) =37.23 Max.H=1.20; Max.Htw=free out;; W(ft) =37.88 Max.H=1.30; Max.Htw=free out;; W(ft) =38.54 Max.H=1.37; Max.Htw=free out;; W(ft) =39.00

EMERGENCY SPILLWAY
BIORETENTION BASIN 4

Composite Outlet Structure Detailed Report: Spillway Bio 4

Composite Rating Table

Tailwater Elevation = Free Outfall (Spillway Bio 4)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
125.00	0.00	(N/A)	0.00
125.10	0.00	(N/A)	0.00
125.20	0.00	(N/A)	0.00
125.30	0.00	(N/A)	0.00
125.40	0.00	(N/A)	0.00
125.50	0.00	(N/A)	0.00
125.60	0.00	(N/A)	0.00
125.70	0.00	(N/A)	0.00
125.80	0.00	(N/A)	0.00
125.90	0.00	(N/A)	0.00
126.00	0.00	(N/A)	0.00
126.10	0.00	(N/A)	0.00
126.20	0.00	(N/A)	0.00
126.30	0.00	(N/A)	0.00
126.40	2.87	(N/A)	0.00
126.50	8.17	(N/A)	0.00
126.60	15.13	(N/A)	0.00
126.70	23.47	(N/A)	0.00
126.80	33.05	(N/A)	0.00
126.90	43.77	(N/A)	0.00
127.00	55.57	(N/A)	0.00
127.10	68.39	(N/A)	0.00
127.20	82.20	(N/A)	0.00
127.30	96.97	(N/A)	0.00
127.40	112.67	(N/A)	0.00
127.50	129.30	(N/A)	0.00
127.60	146.83	(N/A)	0.00
127.67	159.63	(N/A)	0.00

Contributing Structures

None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
None Contributing
Weir - 1
Weir - 1
Weir - 1

EMERGENCY SPILLWAY
BIORETENTION BASIN 4

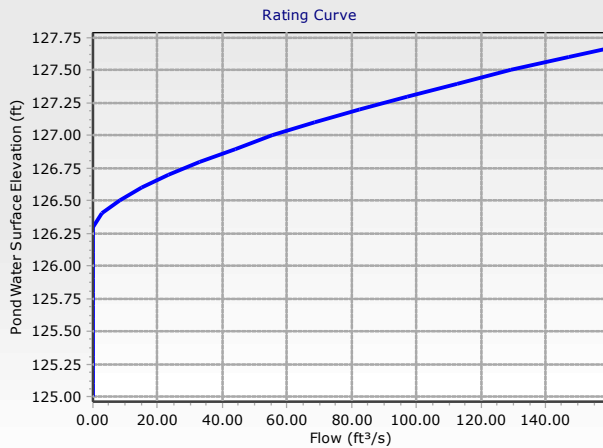
Composite Outlet Structure Detailed Report: Spillway Bio 4

Composite Rating Table

Tailwater Elevation = Free Outfall (Spillway Bio 4)

Contributing Structures

Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1
Weir - 1



NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS



FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Elk Cannabis

Date: 2/25/2025

Structure:

B4 Outfall
100 Year Storm
Routed

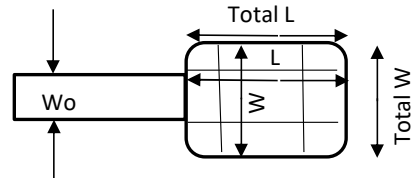
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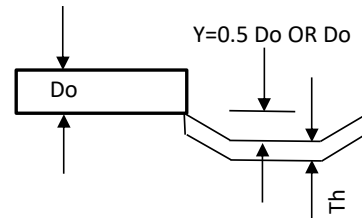
DESIGN CRITERIA:

Design Storm	100 yr
Flow Rate, Q=	6.27 CFS
Culvert Horiz Dim.=	1.50 Ft
Tailwater Depth=	0.75 *Ft
Filter Fabric Used?	y (Y/N)
D(50) min.	3 in



SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.50 Ft
Depth of Hole (Y)	0.75 Ft
Length of Bottom (L)	4.50 Ft
Width of Bottom (W)	3.00 Ft
Total Length of Scour Hole	9.00 Ft
Total Width of Scour Hole	7.50 Ft
D(50) calc.	1 in
D(50) to be used	3 in
Thickness (Thk.)	6 in



NOTE: * Tailwater was calculated using 0.50 x pipe diameter

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS



FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Elk Cannabis

Date: 2/25/2025

Structure:

B2 Outfall
100 Year Storm
Routed

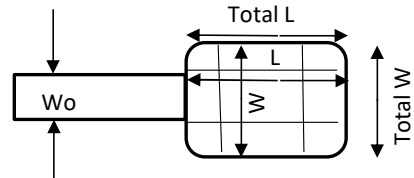
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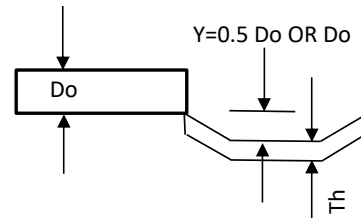
DESIGN CRITERIA:

Design Storm	100 yr
Flow Rate, Q=	9.47 CFS
Culvert Horiz Dim.=	2.00 Ft
Tailwater Depth=	1.00 *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 0.50 x pipe diameter

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS



FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Elk Cannabis

Date: 2/25/2025

Structure:

HW5
25 Year Storm

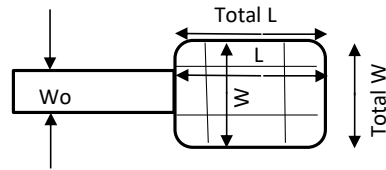
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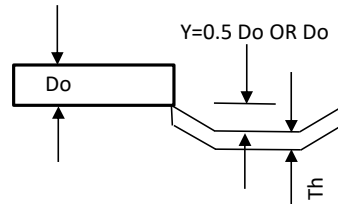
DESIGN CRITERIA:

Design Storm	25 yr
Flow Rate, Q=	13.40 CFS
Culvert Horiz Dim.=	2.00 Ft
Tailwater Depth=	1.11 *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 2-year water surface elevation in the basin (el. 122.61)

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS



FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Elk Cannabis

Date: 2/25/2025

Structure:

HW13
25 Year Storm

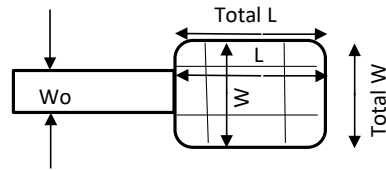
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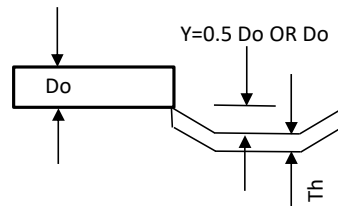
DESIGN CRITERIA:

Design Storm	25 yr
Flow Rate, Q=	10.70 CFS
Culvert Horiz Dim.=	2.00 Ft
Tailwater Depth=	1.11 *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 2-year water surface elevation in the basin (el. 122.61)

NEW JERSEY SOIL EROSION & SEDIMENT CONTROL STANDARDS



FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Elk Cannabis

Date: 2/25/2025

Structure:

HW19
25 Year Storm

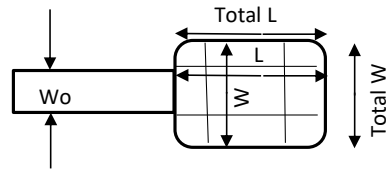
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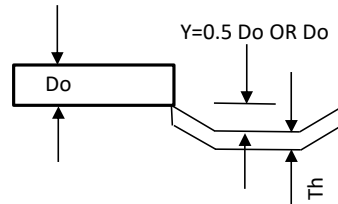
DESIGN CRITERIA:

Design Storm	25 yr
Flow Rate, Q=	11.55 CFS
Culvert Horiz Dim.=	2.00 Ft
Tailwater Depth=	1.19 *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 2-year water surface elevation in the basin (el. 123.99)

FOR

CONDUIT OUTLET PROTECTION - SCOUR HOLE

PROJECT: Elk Cannabis

Date: 2/25/2025

Structure:

HW21
25 Year Storm

Rev:

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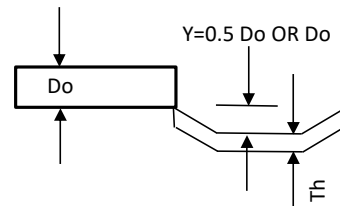
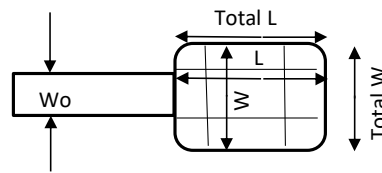
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DESIGN CRITERIA:

Design Storm	25 yr
Flow Rate, Q=	1.57 CFS
Culvert Horiz Dim.=	1.25 Ft
Tailwater Depth=	1.44 *Ft
Filter Fabric Used?	y (Y/N)
D(50) min.	3 in

SCOUR HOLE DIMENSIONS:

Culvert Vert Dim. (Do)	1.25 Ft
Depth of Hole (Y)	0.70 Ft
Length of Bottom (L)	3.75 Ft
Width of Bottom (W)	2.50 Ft
Total Length of Scour Hole	7.95 Ft
Total Width of Scour Hole	6.70 Ft
D(50) calc.	0 in
D(50) to be used	3 in
Thickness (Thk.)	6 in



NOTE: * Tailwater was calculated using 2-year water surface elevation in the basin (el. 122.94)

STORM SEWER CALCULATIONS

ELK CANNABIS CULTIVATION FACILITY

MADE BY: BM DATE: 02/26/25

MADE BY: BM DATE: 02/26/25 RAINFALL CURVE - TRENTON

PROJECT	ELK CANNABIS
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REV. BY: 0.00 DATE: 01/00/00

PROJ. NO.	PAUPL23001
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SUBAREA DATA						DESIGN DATA												DESIGN FLOW								PIPE DATA											
LOCATION		AREA	"C"	CxA	SUM	TC	SUM	DES	"I"	INLET	FLOW	PIPE	Manning's	CIRC.	ELLIPTICAL SIZE (in.)		SLOPE	CAP	VEL	%FULL	VEL	DPTH	FLOW	TOTAL	LGTH	TOP	INVERTS		DEPTH	COVER							
FROM	TO				CxA		TC	STM		FLOW	Q a	TYPE	Number	SIZE (in.)	VERT.	HORIZ.	%	Q f	V f	Qa/Qf	V a	INCH	TIME	TIME	I - I	GRATE	UPPER	LOWER	TO INV.	(inches)							
													0.012																								
I-1	I-2	0.53	0.90	0.48	0.48	5.0	5.0	25	7.80	3.75	3.75	HDPE	0.012	15	15	15	0.50	4.9	4.0	76	4.4	9.7	0.5	5.5	133	128.72	124.28	123.62	4.4	36.0							
I-2	MH-3	0.53	0.90	0.48	0.95	5.0	5.5	25	7.70	3.75	7.40	HDPE	0.012	18	18	18	0.55	8.4	4.8	88	5.4	13.0	0.2	5.7	79	128.65	123.62	123.19	5.0	39.9							
MH-3	I-4	0.00	0.30	0.00	0.95	5.0	5.7	25	7.70	0.00	7.40	HDPE	0.012	18	18	18	0.55	8.4	4.8	88	5.4	13.0	0.4	6.2	140	128.35	123.19	122.42	5.2	41.4							
I-4	HW-5	1.03	0.75	0.77	1.73	5.0	6.2	25	7.70	6.07	13.40	HDPE	0.012	24	24	24	0.35	14.5	4.6	92	5.2	18.1	0.4	6.6	120	125.50	121.92	121.50	3.6	16.0							
I-6	I-7	0.85	0.90	0.77	0.77	5.0	5.0	25	7.80	6.01	6.01	HDPE	0.012	18	18	18	0.50	8.0	4.6	24	3.7	5.9	0.6	5.6	133	127.80	124.85	124.18	3.0	14.9							
I-7	MH-9	1.08	0.80	0.86	1.63	5.0	5.6	25	7.70	6.79	12.64	HDPE	0.012	24	24	24	0.30	13.4	4.3	88	4.8	17.4	0.4	6.0	122	127.85	123.43	123.06	4.4	26.0							
I-8	MH-9	0.36	0.30	0.11	0.11	5.0	5.0	25	7.80	0.85	0.85	HDPE	0.012	15	15	15	0.50	4.9	4.0	17	2.9	4.1	0.5	5.5	86	127.23	124.24	123.81	3.0	18.6							
MH-9	MH-10	0.00	0.00	0.00	1.74	5.0	5.5	25	7.80	0.00	13.66	HDPE	0.012	24	24	24	0.30	13.4	4.3	102	4.9	19.7	1.2	6.6	338	128.11	123.06	122.05	5.1	33.6							
MH-10	MH-11	0.00	0.00	0.00	1.74	5.0	6.6	25	7.55	0.00	13.22	HDPE	0.012	24	24	24	0.30	13.4	4.3	98	4.9	19.2	0.4	7.1	120	128.31	122.05	121.81	6.3	48.1							
MH-11	MH-12	0.00	0.00	0.00	1.74	5.0	7.1	25	7.55	0.00	13.22	HDPE	0.012	24	24	24	0.30	13.4	4.3	98	4.9	19.2	0.2	7.3	72	127.13	121.81	121.59	5.3	36.8							
MH-12	HW-13	0.00	0.00	0.00	1.74	5.0	7.3	25	7.55	0.00	13.22	HDPE	0.012	24	24	24	0.30	13.4	4.3	98	4.9	19.2	0.1	7.4	30	127.13	121.59	121.50	5.5	39.5							
I-14	MH-15	0.60	0.30	0.18	0.18	5.0	5.0	25	7.80	1.42	1.42	HDPE	0.012	15	15	15	0.36	4.2	3.4	88	3.9	10.8	0.4	5.4	103	127.70	125.32	124.95	2.4	11.3							
MH-15	I-16	0.00	0.30	0.00	0.18	5.0	5.0	25	7.80	0.00	1.42	HDPE	0.012	15	15	15	0.40	4.4	3.6	32	3.2	5.8	0.4	5.4	80	128.75	124.95	124.46	3.8	28.4							
I-16	I-17	0.73	0.90	0.66	0.84	5.0	5.4	25	7.80	5.17	6.58	HDPE	0.012	18	18	18	0.40	7.2	4.1	91	4.6	13.4	0.5	5.9	133	128.75	124.21	123.68	4.5	34.0							
I-17	MH-18	0.73	0.90	0.66	1.49	5.0	5.9	25	7.70	5.17	11.60	HDPE	0.012	24	24	24	0.25	12.3	3.9	95	4.5	18.6	0.3	6.2	82	128.75	123.18	122.98	5.6	39.8							
MH-18	HW-19	0.00	0.00	0.00	1.49	5.0	6.2	25	7.70	0.00	11.60	HDPE	0.012	24	24	24	0.25	12.3	3.9	95	4.5	18.6	0.3	6.5	71	128.12	122.98	122.80	5.1	34.7							
MH-1	HW-2	0.20	0.98	0.20	0.20	5.0	5.0	25.0	7.80	1.54	1.57	HDPE	0.012	18	18	18	1.10	11.9	6.8	13	4.6	4.3	0.5	5.5	136	128.33	123.00	121.50	5.3	43.5							
OCS-2	FES									0.00	9.47	HDPE	0.012	24	24	24	0.46	16.62	5.3	57	5.4	12.9	0.5	0.5	151	124.60	122.00	121.30	2.6	4.2							
OCS-3	MH12									0.00	3.50	HDPE	0.012	18	18	18	0.32	6.4	3.6	54	3.7	9.4	0.3	0.3	60	125.00	121.80	121.60	3.2	17.9							
OCS-4	FES									0.00	6.27	HDPE	0.012	18	18	18	0.99	11.3	6.4	55	6.5	9.5	0.3	0.3	131	126.30	123.80	122.50	2.5	9.5							

Basin 2 outfall pipe

Project Description		
Friction Method	Manning	
	Formula	
Solve For	Discharge	
Input Data		
Roughness Coefficient	0.012	
Channel Slope	0.005 ft/ft	
Normal Depth	12.4 in	
Diameter	24.0 in	
Results		
Discharge Capacity	9.52 cfs	100 yr. projected rainfall routed outflow = 9.47 cfs
Flow Area	1.6 ft ²	
Wetted Perimeter	3.2 ft	
Hydraulic Radius	6.1 in	
Top Width	2.00 ft	
Critical Depth	13.2 in	
Percent Full	51.7 %	
Critical Slope	0.004 ft/ft	
Velocity	5.81 ft/s	
Velocity Head	0.52 ft	
Specific Energy	1.56 ft	
Froude Number	1.132	
Maximum Discharge	19.37 cfs	
Discharge Full	18.01 cfs	
Slope Full	0.002 ft/ft	
Flow Type	Supercritical	
GVF Input Data		
Downstream Depth	0.0 in	
Length	0.0 ft	
Number Of Steps	0	
GVF Output Data		
Upstream Depth	0.0 in	
Profile Description	N/A	
Profile Headloss	0.00 ft	
Average End Depth Over Rise	0.0 %	
Normal Depth Over Rise	51.7 %	
Downstream Velocity	Infinity ft/s	
Upstream Velocity	Infinity ft/s	
Normal Depth	12.4 in	
Critical Depth	13.2 in	
Channel Slope	0.005 ft/ft	
Critical Slope	0.004 ft/ft	

Basin 2 point discharge

Project Description	
Friction Method	Manning Formula
Solve For	Discharge
Input Data	
Channel Slope	0.013 ft/ft
Normal Depth	2.3 in

Section Definitions

Station (ft)	Elevation (ft)
0+00	121.80
0+68	121.50
1+18	121.20
2+38	121.50
2+70	121.80

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 121.80)	(2+70, 121.80)	0.035

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	10.11 cfs	100 yr. projected rainfall routed outflow = 9.47 cfs
Roughness Coefficient	0.035	
Elevation Range	121.2 to 121.8 ft	
Flow Area	10.2 ft ²	
Wetted Perimeter	107.7 ft	
Hydraulic Radius	1.1 in	
Top Width	107.67 ft	
Normal Depth	2.3 in	Depth of flow
Critical Depth	1.8 in	
Critical Slope	0.042 ft/ft	
Velocity	0.99 ft/s	Velocity
Velocity Head	0.02 ft	
Specific Energy	0.21 ft	
Froude Number	0.565	
Flow Type	Subcritical	

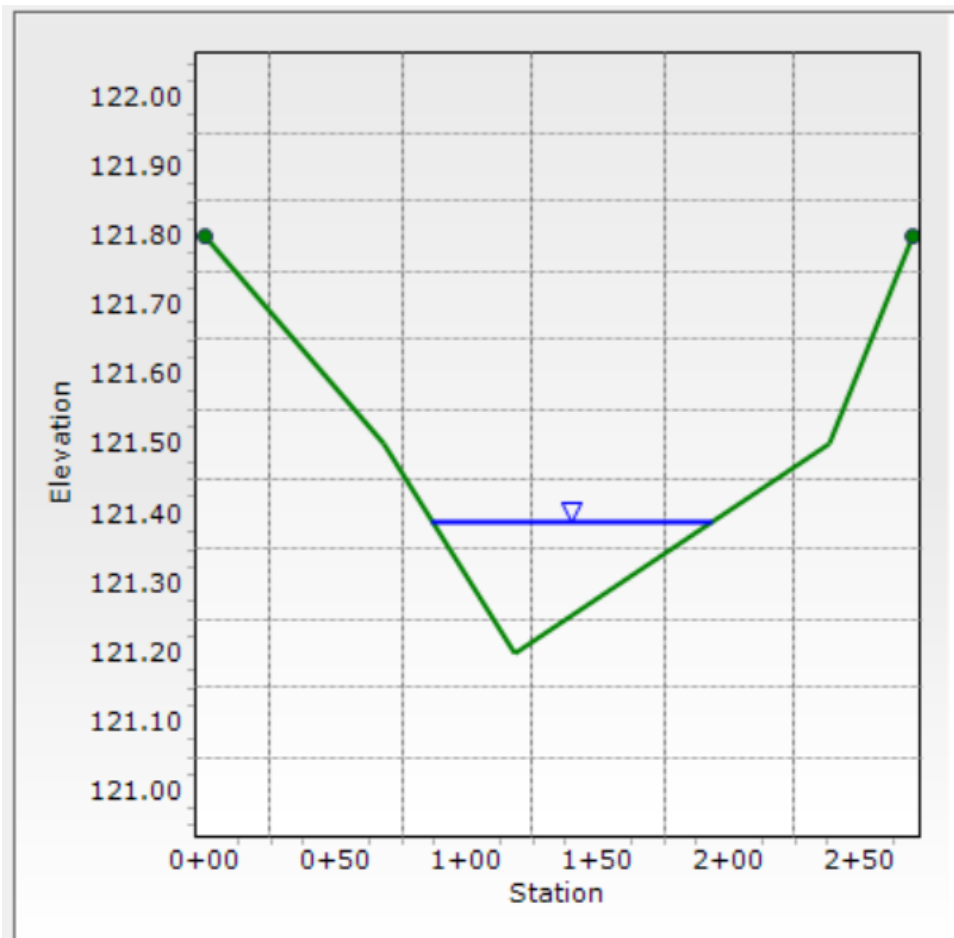
Basin 2 point discharge

GVF Input Data

Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	2.3 in
Critical Depth	1.8 in
Channel Slope	0.013 ft/ft
Critical Slope	0.042 ft/ft



Basin 4 outfall pipe

Project Description		
Friction Method	Manning	
	Formula	
Solve For	Discharge	
Input Data		
Roughness Coefficient	0.012	
Channel Slope	0.005 ft/ft	
Normal Depth	14.0 in	
Diameter	18.0 in	
Results		
Discharge Capacity	7.64 cfs	100 yr. projected rainfall routed outflow = 6.27 cfs
Flow Area	1.5 ft²	
Wetted Perimeter	3.2 ft	
Hydraulic Radius	5.5 in	
Top Width	1.25 ft	
Critical Depth	12.9 in	
Percent Full	77.8 %	
Critical Slope	0.006 ft/ft	
Velocity	5.18 ft/s	
Velocity Head	0.42 ft	
Specific Energy	1.58 ft	
Froude Number	0.840	
Maximum Discharge	8.66 cfs	
Discharge Full	8.05 cfs	
Slope Full	0.005 ft/ft	
Flow Type	Subcritical	
GVF Input Data		
Downstream Depth	0.0 in	
Length	0.0 ft	
Number Of Steps	0	
GVF Output Data		
Upstream Depth	0.0 in	
Profile Description	N/A	
Profile Headloss	0.00 ft	
Average End Depth Over Rise	0.0 %	
Normal Depth Over Rise	0.0 %	
Downstream Velocity	0.00 ft/s	
Upstream Velocity	0.00 ft/s	
Normal Depth	14.0 in	
Critical Depth	12.9 in	
Channel Slope	0.005 ft/ft	
Critical Slope	0.006 ft/ft	

Basin 4 point discharge

Project Description	
Friction Method	Manning Formula
Solve For	Discharge
Input Data	
Channel Slope	0.018 ft/ft
Normal Depth	1.9 in

Section Definitions

Station (ft)	Elevation (ft)
0+00	122.00
0+25	121.90
0+50	121.80
1+00	122.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 122.00)	(1+00, 122.00)	0.035

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	6.77 cfs	100 yr. projected rainfall routed outflow = 6.27 cfs
Roughness Coefficient	0.035	
Elevation Range	121.8 to 122.0 ft	
Flow Area	6.4 ft ²	
Wetted Perimeter	80.0 ft	
Hydraulic Radius	1.0 in	
Top Width	80.00 ft	
Normal Depth	1.9 in	Depth of flow
Critical Depth	1.6 in	
Critical Slope	0.044 ft/ft	
Velocity	1.06 ft/s	Velocity
Velocity Head	0.02 ft	
Specific Energy	0.18 ft	
Froude Number	0.659	
Flow Type	Subcritical	

GVF Input Data

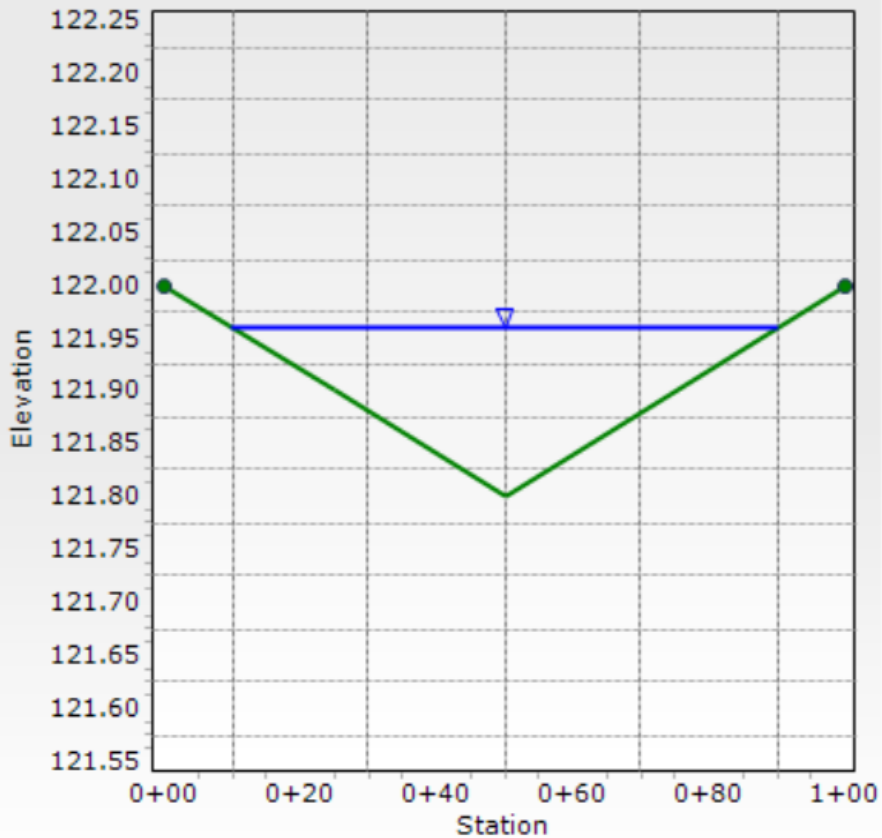
Basin 4 point discharge

GVF Input Data

Downstream Depth	0.0 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data

Upstream Depth	0.0 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	1.9 in
Critical Depth	1.6 in
Channel Slope	0.018 ft/ft
Critical Slope	0.044 ft/ft



Appendix G: Reference Data



NEW JERSEY 24 HOUR RAINFALL FREQUENCY DATA

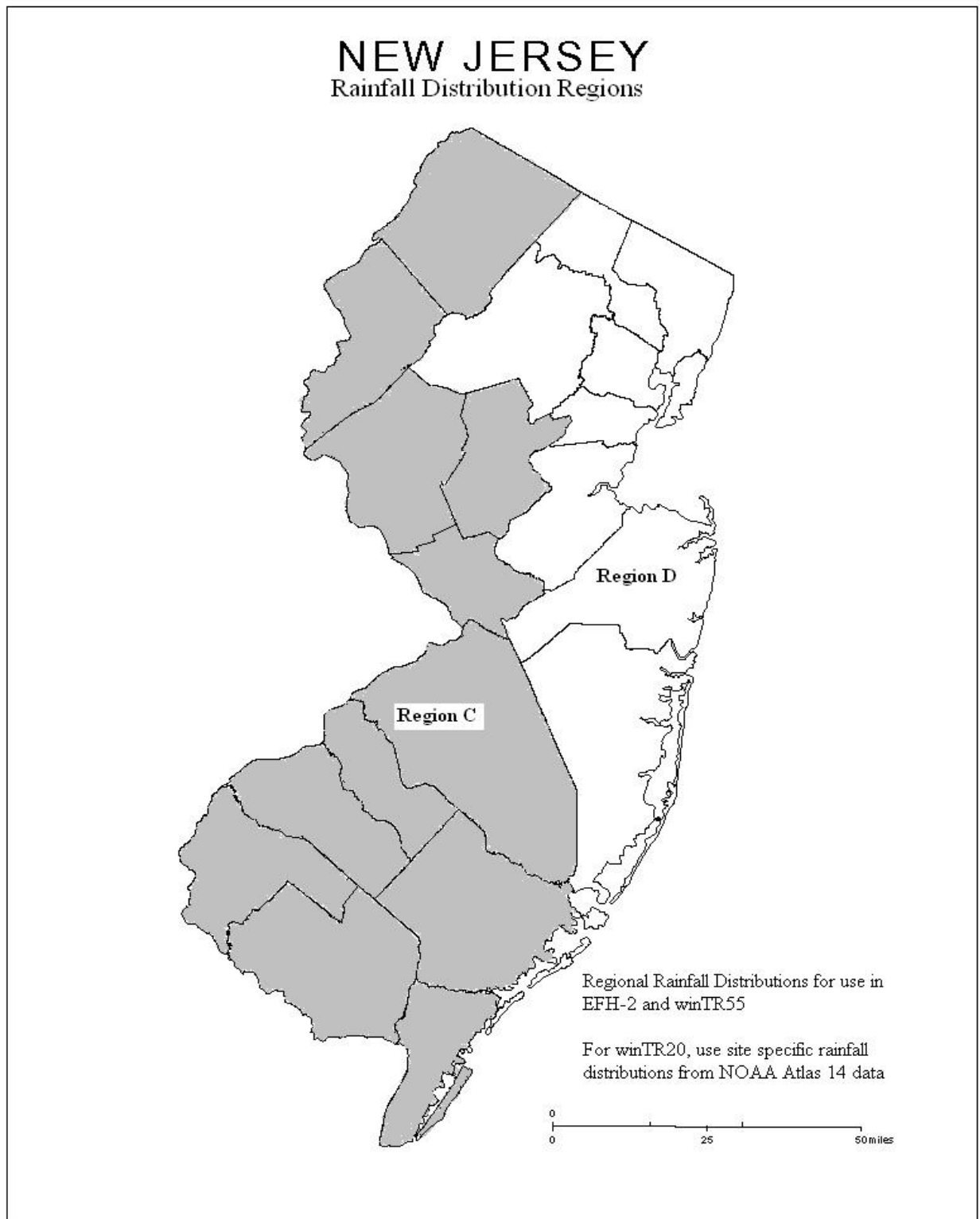
Rainfall amounts in Inches

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

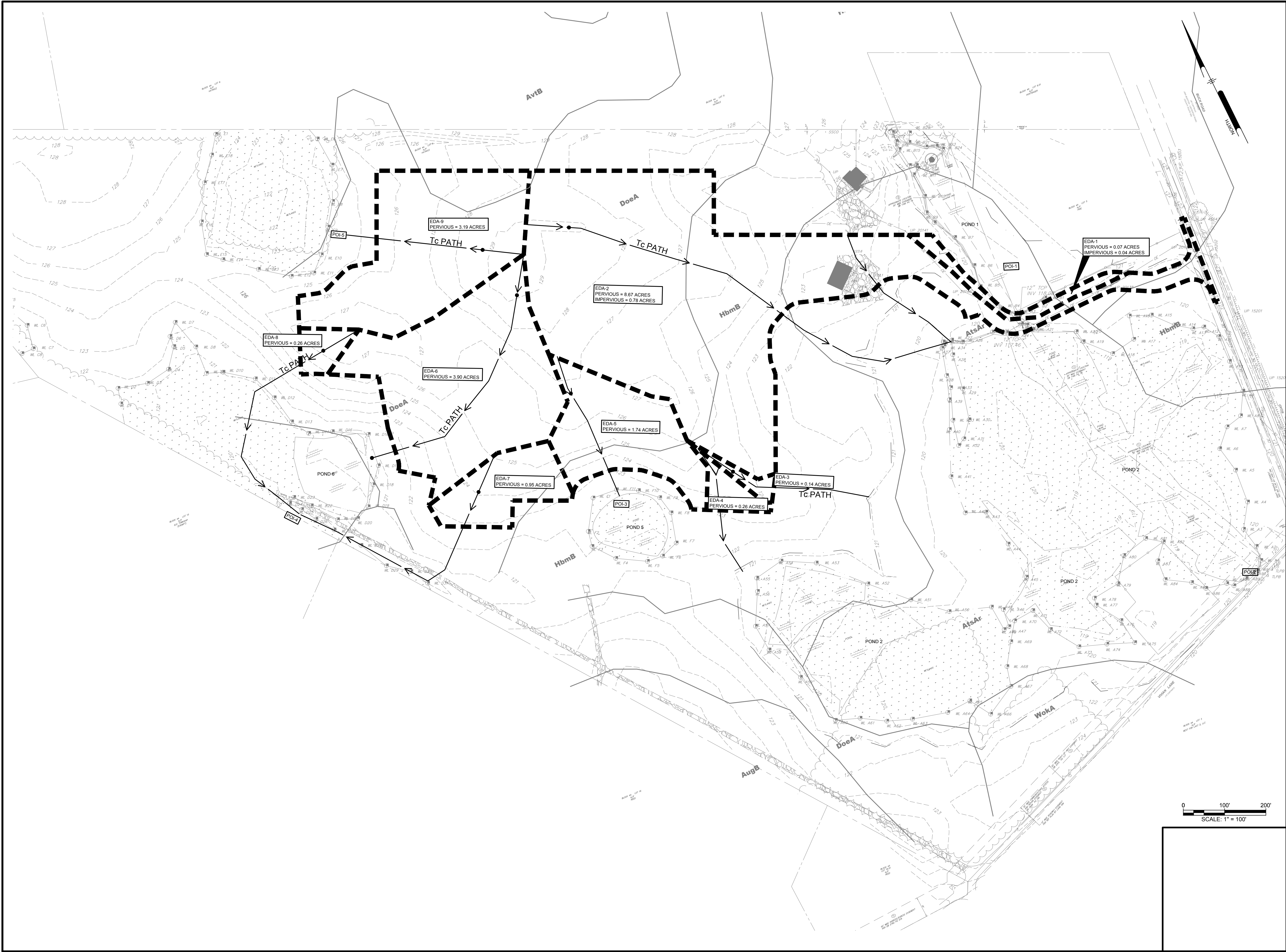
Future Precipitation Change Factors at N.J.A.C. 7:8-5.7(d) as Table 5-6

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 H: Drainage Area Plans



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PROJECT	PAUPL230001
DATE	2025-02-26
DRAWING SCALE	1"=100'
DRAWN BY	BM
APPROVED BY	BJM

CS9001
SHEET 1 OF 4

ELK CANNABIS CULTIVATION FACILITY
730 BUCK ROAD, ELK TOWNSHIP
GLOUCESTER COUNTY, NEW JERSEY
BLOCK 44, LOT: 4

PRE-DEVELOPED DRAINAGE AREA PLAN

COUNTRY ROADS REALTY, LLC.
219 N VINEYARD BLVD.
COLLINGSWOOD, NJ 08108

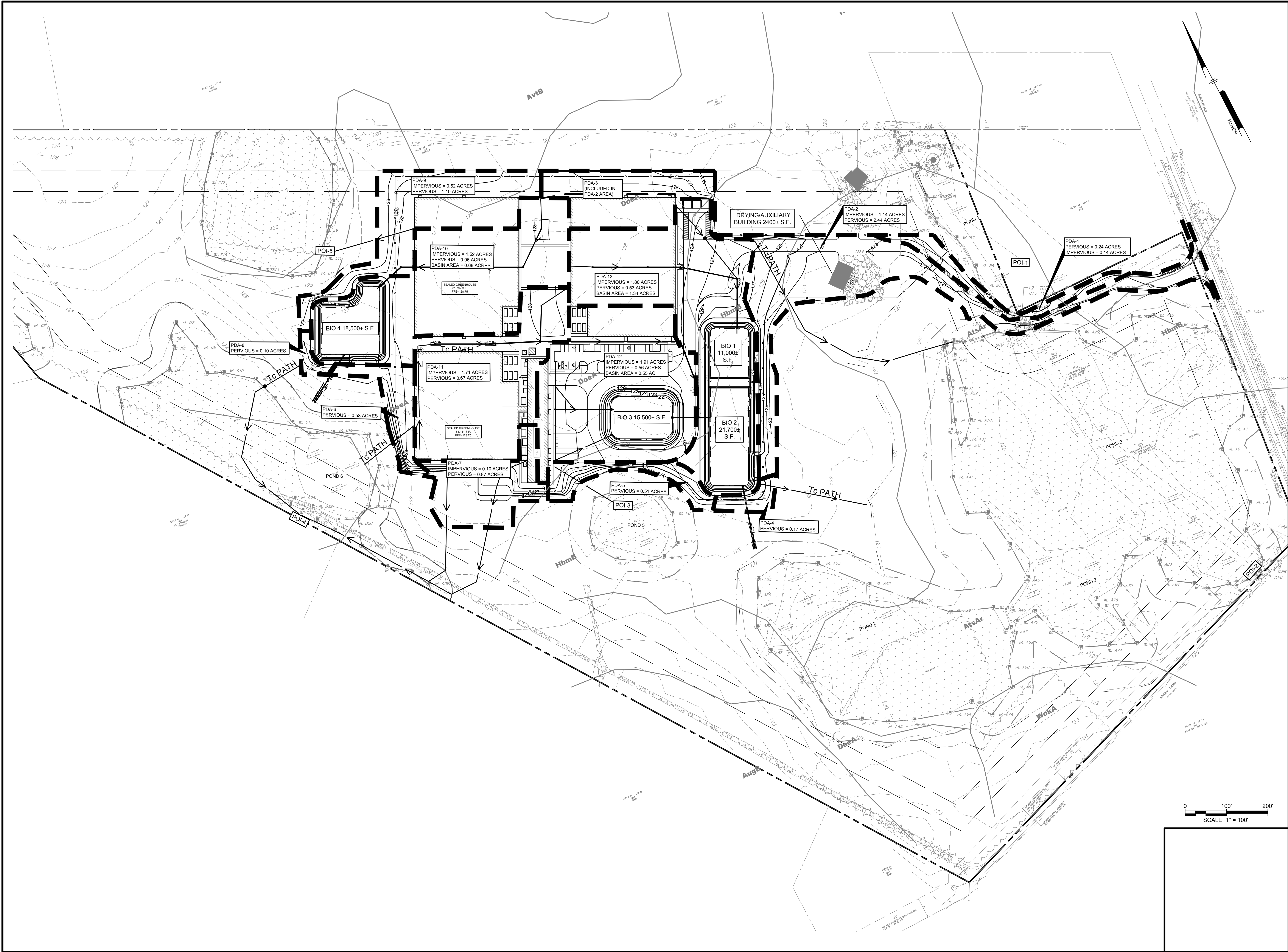
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BENJAMIN J. MITSMENN
PROFESSIONAL ENGINEER
NEW JERSEY LICENSE NO. 24GE0541300

Ben J. Mitsmenn
3/26/25

Pennoni
NJ COA GA26033300

PENNONI ASSOCIATES INC.
515 Grove Street, Suite 1B
Haddon Heights, NJ 08035
T 856.547.0505 F 856.547.9174



ELK CANNABIS CULTIVATION FACILITY
730 BUCK ROAD, ELK TOWNSHIP
GLOUCESTER COUNTY, NEW JERSEY
BLOCK 44, LOT: 4

POST-DEVELOPED DRAINAGE AREA PLAN

COUNTRY ROADS REALTY, LLC.
219 N VINEYARD BLVD.
COLLINGSWOOD, NJ 08108

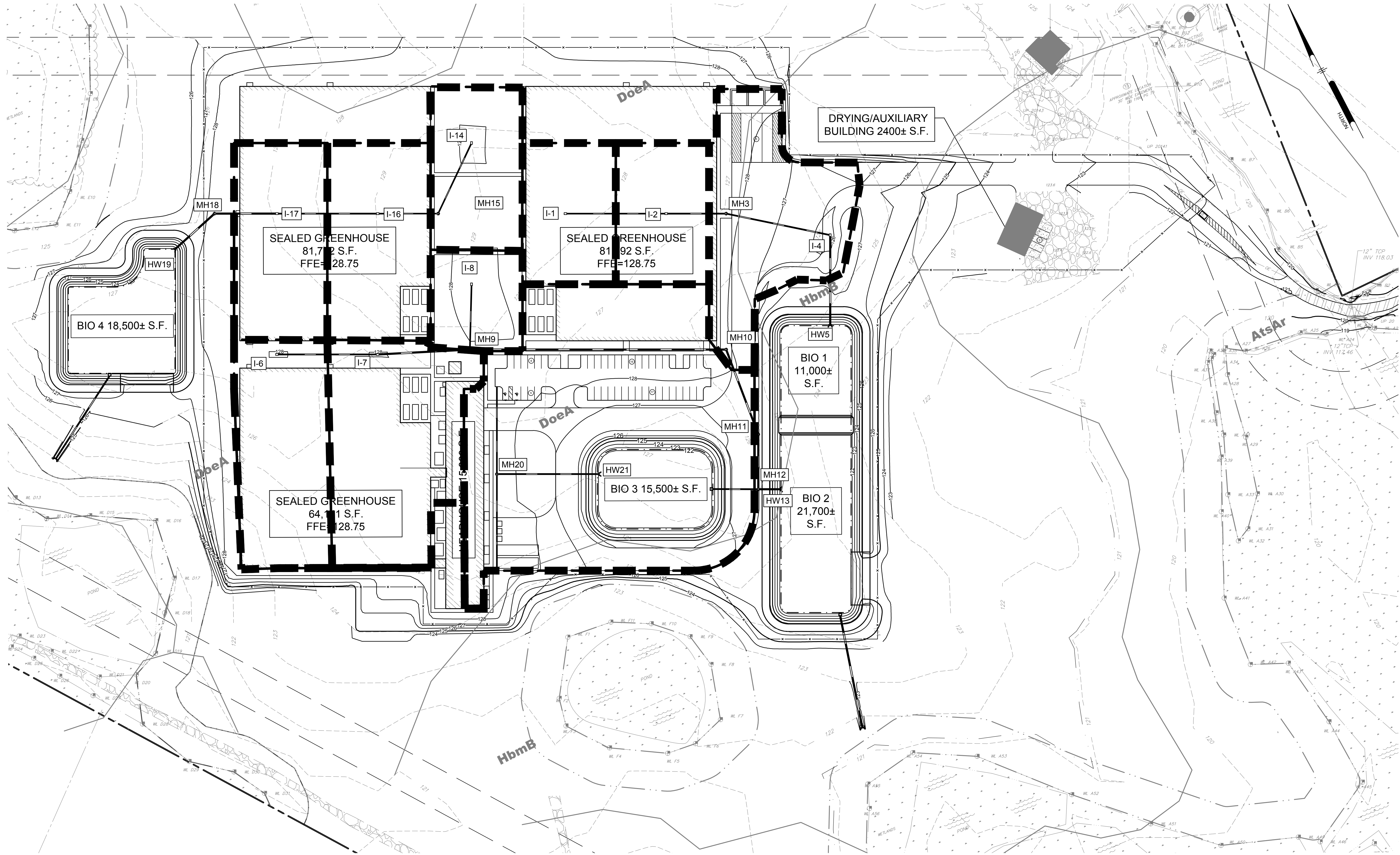
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DATE	2025-02-26
DRAWING SCALE	1"=100'
DRAWN BY	BM
APPROVED BY	BJM



0 60' 120'
SCALE: 1" = 60'

ELK CANNABIS CULTIVATION FACILITY

730 BUCK ROAD, ELK TOWNSHIP
GLoucester COUNTY, NEW JERSEY
BLOCK: 44, LOT: 4

POST-DEVELOPED INLET AREA PLAN

COUNTRY ROADS REALTY, LLC.
219 N VINEYARD BLVD.
COLLINGSWOOD, NJ 08108

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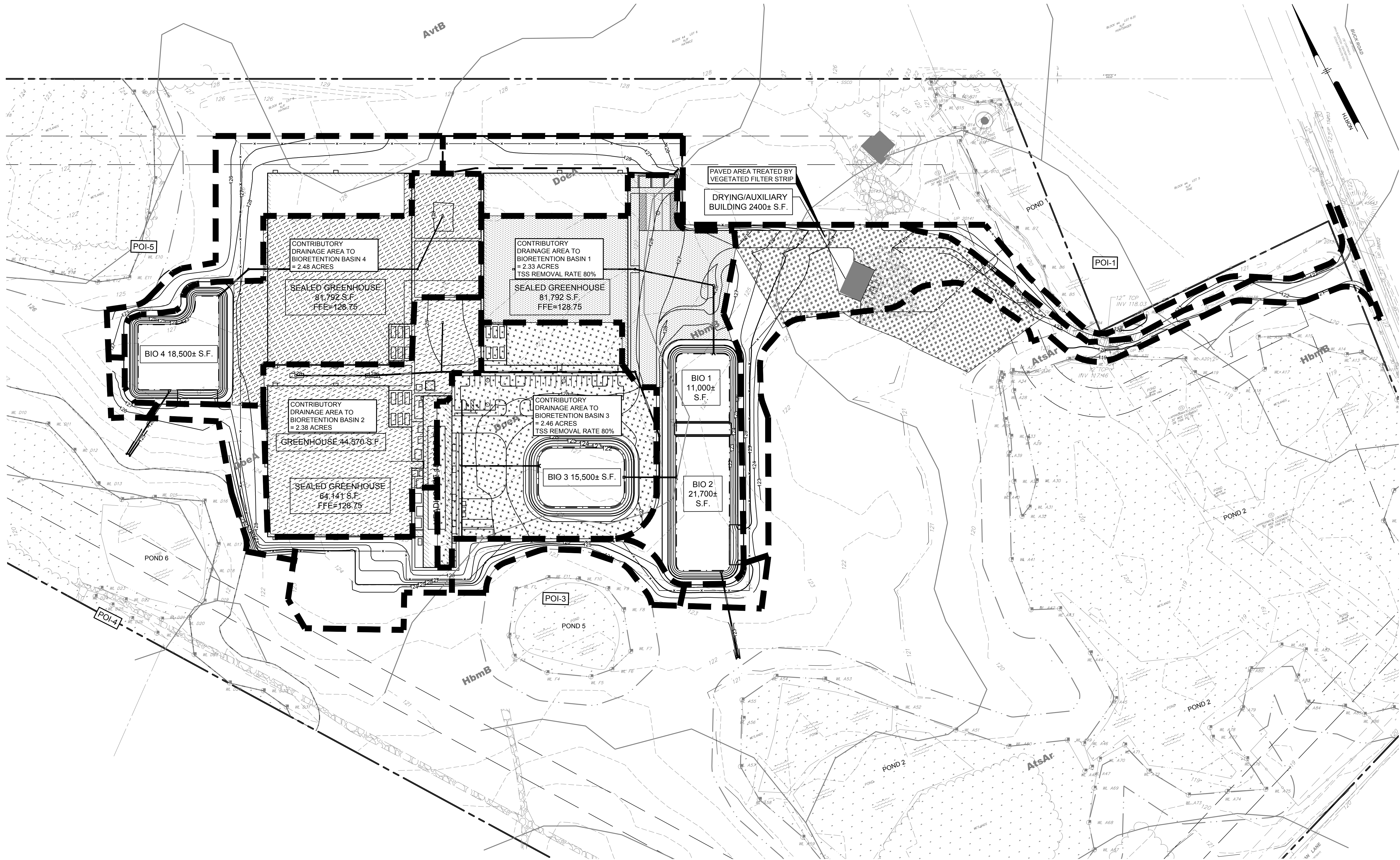
CS9003

SHEET 3 OF 4



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0 80' 160'
SCALE: 1" = 80'

ELK CANNABIS CULTIVATION FACILITY

730 BUCK ROAD, ELK TOWNSHIP
GLOUCESTER COUNTY, NEW JERSEY
BLOCK: 44, LOT: 4

POST-DEVELOPED TSS REMOVAL PLAN

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3/26/25

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