



PRELIMINARY DRAINAGE STUDY

Forster Mixed-Use Project
(AC23-0031)



PROJECT ADDRESS:
Forster Street and Camino Capistrano
APN: 124-160-37, -51, -52

Camino Capistrano Oz, LLC
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DATE: JULY 1, 2024

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Section 1 – Project Description

Existing Conditions:

The project is located at the Southeast corner of El Camino Real and Forster Street in San Juan Capistrano. It is bound by the Historic Town Center Park to the north, commercial development to the east, El Camino Real, Forster Street and Camino Capistrano to the west and commercial/office development to the south.

The existing site improvements include a building slab, paved parking stalls and drive aisles, and mature landscaping. The existing site improvements will be demolished.

Proposed Conditions:

The proposed improvements include a mixed-use community, incorporating both commercial and residential uses. The commercial element of the project includes a free-standing 4,000 sf restaurant and 3,000 sf of commercial space attached to the residential building. The two commercial buildings sit on opposite corners of the project entrance. The restaurant building has a spacious courtyard for exterior seating. The residential element of the project will contain 95 multi-family homes with a mix of one- and two-bedroom apartment homes, surrounding a resort-style pool and recreational facility. A nearly 3,500 sf clubhouse building will sit at the entrance to the residences. Also included is a pool deck and partially submerged underground parking structure beneath the residential building. Two trash enclosures will serve the community and drive aisles and parking stalls will support vehicular movements throughout the project. New landscaping will be provided in all areas that are not hardscaped.

Driveway opening/closings and parkway (sidewalk and landscaping) improvements are the only offsite improvements proposed with this project.

Section 2 – Drainage Patterns

Existing Drainage Patterns:

The existing site drains in two general locations. The northwestern corner of the property sheet flows to the west to Camino Capistrano, where it is carried south in the street's curb and gutter. The remainder of the site is sloped towards two inlets at the southern corner of the property where it is collected in a catch basin and piped southwest in a 15" pipe to a public storm drain system in Del Obispo.

DA 1 consists of 0.271 acres which has approximately 38% impervious land cover. This land area includes the fountain at the corner of Camino Capistrano and Forster Street, and the adjacent landscaping. Runoff sheet flows to the west and over the sidewalk along Camino Capistrano, and into the curb and gutter in the roadway. Runoff is conveyed in the curb and gutter to the south. Ultimately, runoff is collected in a public catch basin at the intersection of Camino Capistrano and Del Obispo Street.

DA 2 & 3 consists of 2.884 acres which has approximately 87% impervious land cover. This area includes the balance of the property; the building slab, parking lot, drive aisles and other site improvements. Runoff sheet flows to two catch basins at the lower portion of the site. The higher catch basin conveys runoff via a 15" storm drain pipe to the lower catch basin. From the lower catch basin, storm water will be conveyed by a 12" pipe (Outlet 2). The 12" storm drain line carries runoff to the west and ultimately discharges into the public storm drain system in Del Obispo Street. The storm drain main in Del Obispo St. slopes west to the intersection of Camino Capistrano and Del Obispo. There is a secondary overflow just north of the Outlet 2, where high flow can overflow through an existing gate and sheet flow across the adjacent property, ultimately discharging into an existing catch basin on Del Obispo.

Proposed Drainage Patterns:

Generally, the developed drainage pattern is consistent with the existing drainage pattern for the ultimate storm water path.

The proposed development has five storm water drainage areas and two outlet discharge locations from the site.

DA 1A consists of 0.197 acres which has approximately 74.7% impervious land cover. This land area includes the restaurant building and the adjacent patio and hardscape. Runoff from the building discharges directly into the biofiltration planter adjacent to the patio. Runoff in the landscape areas and patio sheet flows directly to the biofiltration planter adjacent to the patio. This biofiltration planter (BMP A) captures runoff for treatment. Lower flows infiltrate through the planter and are collected at the bottom with an underdrain pipe. Higher flows



are collected at an inlet set above the ponding depth of the BMP. The underdrain and piping from the raised inlet discharge through a parkway drain to the curb and gutter in Camino Capistrano (Outlet 1). Ultimately, runoff from Camino Capistrano is conveyed south where it is collected in a public catch basin at the intersection of Camino Capistrano and Del Obispo Street.

DA 1B consists of 0.116 acres which has approximately 100% impervious land cover. This land area includes the reconfigured Forster intersection at El Camino Real. Runoff in this area is captured in curb and gutter and is conveyed to Camino Capistrano. Ultimately, runoff from Camino Capistrano is conveyed south where it is collected in a public catch basin at the intersection of Camino Capistrano and Del Obispo Street.

DA 1C consists of 0.456 acres which has approximately 90% impervious land cover. This land area includes the half-width of El Camino Real and Forster streets along the project frontage extending north to the high point at the intersection of El Camino Real and Old Mission Road. Runoff in this area is captured in curb and gutter and is conveyed from Old Mission Road south on El Camino Real, west of Forster and then south on Camino Capistrano to a public catch basin at the intersection of Del Obispo. Runoff for this area is included in the calculations and contributions from the Old Mission Place project at the SEC of ECR and Old Mission Road is noted in Section 4.

DA 2 consists of 0.855 acres which has approximately 89% impervious land cover. This area includes the fitness and residential building at the northern side of the site and the Forster extension from the intersection with El Camino Real. It also includes landscaping and a sidewalk adjacent to the building. Runoff from the building will be piped to an underground storm drain pipe system which will convey runoff to the east along Forster to a diversion manhole. Runoff from the drive aisle, stall areas and landscape areas will sheet flow to curb and gutter along the south edge of Forster where it will be collected by a catch basin. Storm water from catch basin will be piped to the diversion manhole. Low flow storm water from the diversion manhole will be piped to a Modular Wetlands System (MWS) for treatment (BMP B). From the MWS, storm water will be piped to the southwest, converging with higher flows from the diversion manhole, and ultimately to an underground storm drain detention system (System B). Downstream of the detention system, storm water will be conveyed to the 12" outlet point of the project (Outlet 2). The 12" storm drain line carries runoff to the west and ultimately discharges into the public storm drain system in Del Obispo Street. The storm drain main in Del Obispo St. slopes west to the intersection of Camino Capistrano and Del Obispo.

DA 3 consists of 0.282 acres which has approximately 69.5% impervious land cover. This land area includes approximately half of the parking lot at the northeast corner of the property. Storm water in this area is collected in a catch basin in the corner of the parking lot and is piped to a diversion manhole. Low flow storm water from the diversion manhole will be piped to a Modular Wetlands System (MWS) for treatment (BMP B). From the MWS, storm water will be piped to the southwest, converging with higher flows from the diversion manhole, and ultimately to an underground storm drain detention system (System B). Downstream of the detention system, storm water will be conveyed to the 12" outlet point of the project (Outlet 2). The 12" storm drain line carries runoff to the west and ultimately discharges into the public storm drain system in Del Obispo



Street. The storm drain main in Del Obispo St. slopes west to the intersection of Camino Capistrano and Del Obispo.

DA 4 consists of 0.862 acres which has approximately 85.2% impervious land cover. This area includes the clubhouse, pool area and residential building at the southern side of the site. It also includes landscaping and sidewalk adjacent to the building. Runoff from the building and internal walkways will be piped to a storm drain pipe system which will convey runoff to the west to the main drive aisle on the west side of the site. This pipe system conveys storm water to a catch basin at the southwest corner of the site. Runoff from the drive aisle, stall areas and landscape areas will sheet flow to curb and gutter along the west side of the drive aisle where it will be collected by a catch basin. Storm water from catch basin will be piped to a Modular Wetlands System (MWS) for treatment (BMP C). Lower flow rates will be treated, while higher flow rates will bypass internally through the system. From the MWS, storm water will be piped to the south and then east to an underground storm drain detention system (System A). Downstream of the detention system, storm water will be conveyed to the 12" outlet point of the project (Outlet 2). The 12" storm drain line carries runoff to the west and ultimately discharges into the public storm drain system in Del Obispo Street. The storm drain main in Del Obispo St. slopes west to the intersection of Camino Capistrano and Del Obispo.

DA 5 consists of 0.581 acres which has approximately 75% impervious land cover. This land area includes the lower parking lot and drive aisle along the southern edge of the property. It also includes a large portion of the project's landscaping. Storm water in this area is collected in a MWS (BMP D) with higher flows bypassing the MWS at grade with an adjacent catch basin. From the MWS and catch basin, storm water is piped to the 12" outlet point of the project (Outlet 2). The 12" storm drain line carries runoff to the west and ultimately discharges into the public storm drain system in Del Obispo Street. The storm drain main in Del Obispo St. slopes west to the intersection of Camino Capistrano and Del Obispo.

Ultimately, storm water from our site is conveyed to the south to the public storm drain system which is tributary to San Juan Creek, which flows to the Pacific Ocean.

DA 6 consists of 0.263 acres which has approximately 80.5% impervious land cover. This land area includes approximately half of the parking lot at the northeast corner of the property and the steep-sloping portion of the Forster extension. Storm water in this area is collected in a catch basin on the Forster Extension is piped to a diversion manhole. Low flow storm water from the diversion manhole will be piped to a Modular Wetlands System (MWS) for treatment (BMP B). From the MWS, storm water will be piped to the southwest, converging with higher flows from the diversion manhole, and ultimately to an underground storm drain detention system (System B). Downstream of the detention system, storm water will be conveyed to the 12" outlet point of the project (Outlet 2). The 12" storm drain line carries runoff to the west and ultimately discharges into the public storm drain system in Del Obispo Street. The storm drain main in Del Obispo St. slopes west to the intersection of Camino Capistrano and Del Obispo.

The proposed drainage map will utilize the existing secondary overflow as explain in the existing drainage pattern. This is to maintain historic overflow for this project site.

**Run-On:**

The site does not include any run-on.

Hydromodification:

Ultimately, the project drainage is captured in a public storm drain system downstream of the property where storm water is conveyed to San Juan Creek. San Juan Creek is an engineered channel, therefore, HCOC is not a concern for the project. In addition, our project site is included in the Engineered Channels/Large River exemptions area as shown on the San Juan Capistrano Exemption Map.

Flood Zone:

This project is not in a flood zone.

Section 3 – Methodology

RUNOFF DETERMINATION METHODS

The two primary methods used in the Orange County area to determine design discharges are the Rational Method and the Unit Hydrograph method. The Rational method is generally intended for use on small watersheds of less than 300 to 500-acres while the Synthetic Unit Hydrograph method is intended for use on watersheds in excess of these limits. For the purposes of this report, we will be using the Rational Method for the 25- and 100-year storm event.

RATIONAL METHOD

The Rational method is commonly used for determining peak discharge from relatively small drainage areas. The Rational method is based on the following equation:

$$Q = C \times I \times A$$

Where:

Q = peak discharge, in cubic feet per second (cfs)

C = runoff coefficient, proportion of the rainfall that runs off the surface (no units)

A = drainage area contributing to the design location, in acres

For this study, HydroCAD software was used to model the Rational Method using Intensity-Duration-Frequency (IDF) curves from the Orange County Manual. The IDF curves were input based on the criteria below from Figure B-3 from the OC Hydrology Manual:

I = average rainfall intensity for a duration equal to the T_c for the area, in inches per hour (Note: If the computed T_c is less than 5 minutes, use 5 minutes for computing the peak discharge, Q)

$$I = A * (t)^B \text{ (in/hr)}$$

t = Time of Concentration (min.)

A&B = factors in the Intensity regression equation from the Orange County Hydrology Manual

A = 10.209 for 10-year storm

A = 15.56 for 100-year storm

B = -0.573 for 10-year & 100-year storm

A plot of the IDF curve is included in the Appendix.

The Tc values for each subarea were determined using nomographs from Figure D-1 from the OC Hydrology Manual. These Tc values are directly input for each subarea in the HydroCAD model. A Tc of 5 minutes was used for initial subareas with calculated Tc values less than 5 minutes.

The runoff coefficient (C) for each surface cover is also directly input for each subarea. The runoff coefficient is calculated based on section D.5 of the OC Hydrology Manual. The following factor was used for calculation of the runoff coefficient:

$$F_p = \text{Loss rate for Soils Group B (in/hr) from O.C. Hydrology Manual (0.20 for soil group D)}$$

Each subarea is entered into the HydroCAD model as a Subcatchment and linked to a downstream node. A Subcatchment is defined in the HydroCAD manual as *"a relatively homogenous area of land that typically drains into a reach or pond."* A Reach is defined as *"a uniform stream, channel, or pipe that conveys water from one point to another."* A Pond is defined as *"a pond, swamp, dam, catch basin, manhole, drywell, or other impoundment that fills with water from one or more sources and empties in a manner determined by a weir, culvert, or other outlet device(s)."* A Pond is also used to model the end point of the drainage study. A model of the drainage catchment area was created using Subcatchments, Reaches and Ponds. A diagram of the model is included in the Appendix for the existing and proposed conditions.

In the HydroCAD program, the rainfall duration and corresponding peak flow rate are calculated based on the Tc for each subarea using the Rational Method for the frequency storm specified. The program allows for the 2-, 5-, 10-, 25-, 50- and 100-year storm frequencies. As noted above, the 25- and 100-year storm frequencies will be calculated in this study.

Hydraulic Calculation Methods:

The Federal Highway Administration (FHWA) Hydraulic Toolbox program was used for this study to calculate pipe capacity, street flow capacity and catch basin sizing. This is a federally approved program and is generally accepted in Orange County.

Detention Modeling:

The OC Hydrology Manual uses the Modified Puls method (also referred to as the Storage-Indication Method) for detention basin modeling. HydroCAD uses several methods for reach routing, including the Storage-Indication Method. For this project, we selected the Storage-Indication Method for analyzing detention basin routing. This



method was used within the Rational Method model to evaluate time-discharge rates for the two underground storage chamber systems. Please see the calculations in the Appendix for details.



Section 4 – Calculations

Runoff Calculations

Using HydroCAD software, the existing and proposed runoff for the project was calculated for the 25- & 100-Year Storm Events. A model was created based on the drainage areas for the existing and proposed conditions. The runoff calculations are shown in the reports in the Appendix.

Below is an estimate of street runoff for the frontage roads of El Camino Real and Forster Street tributary to the east and south half-widths, respectively. This total Q also accounts for contribution from the Old Mission Place Project Drainage Study with contributions from the onsite improvements, which is currently estimated at 4.29cfs per the project's March 2024 report, and the project's contribution from DA-1A (0.65 cfs)

100-yr Storm Event – El Camino Real and Forster Street Contribution

DA-1C

A=0.456 acres

A = 15.56 for 100-year storm

B = -0.573 for 10-year & 100-year storm

Impervious % = 90%

ai = 0.90

ap = 0.10

Fp = 0.20

Tc = 5 min

$I = a * (t)^B \text{ (in/hr)} = 6.19 \text{ in/hr}$

$C = 0.75 * ai^{0.9} + 0.15 = 0.75$

$Q_{100} = C * I * A = 0.75 * 6.19 * 0.456 = 2.12 \text{ cfs} + 4.29 \text{ cfs} + 0.65 \text{ cfs} = 7.06 \text{ cfs}$

Section 5 – Summary

As shown in the calculations and table below, runoff from the project will be decreased with the development of the project. Since the project is able to maintain a runoff less than that of the pre-developed conditions, no adverse effects will occur to the ultimate downstream conveyance system.

25-yr Storm Event

25-yr Storm	Camino Capistrano Contribution (Outlet 1) (cfs)	12" Pipe Contribution (Outlet 2) (cfs)	Totals
Existing Condition	1.02	5.31	6.33
Proposed Condition	1.13	3.60	4.73
Difference	0.09 (9%)	-1.71 (32%)	-1.60 (25%)

100-yr Storm Event

100-yr Storm	Camino Capistrano Contribution (Outlet 1) (cfs)	12" Pipe Contribution (Outlet 2) (cfs)	Totals
Existing Condition	1.31	5.35	6.66
Proposed Condition	1.48	4.66	6.14
Difference	0.17 (13%)	-0.69 (13%)	-0.52 (8%)

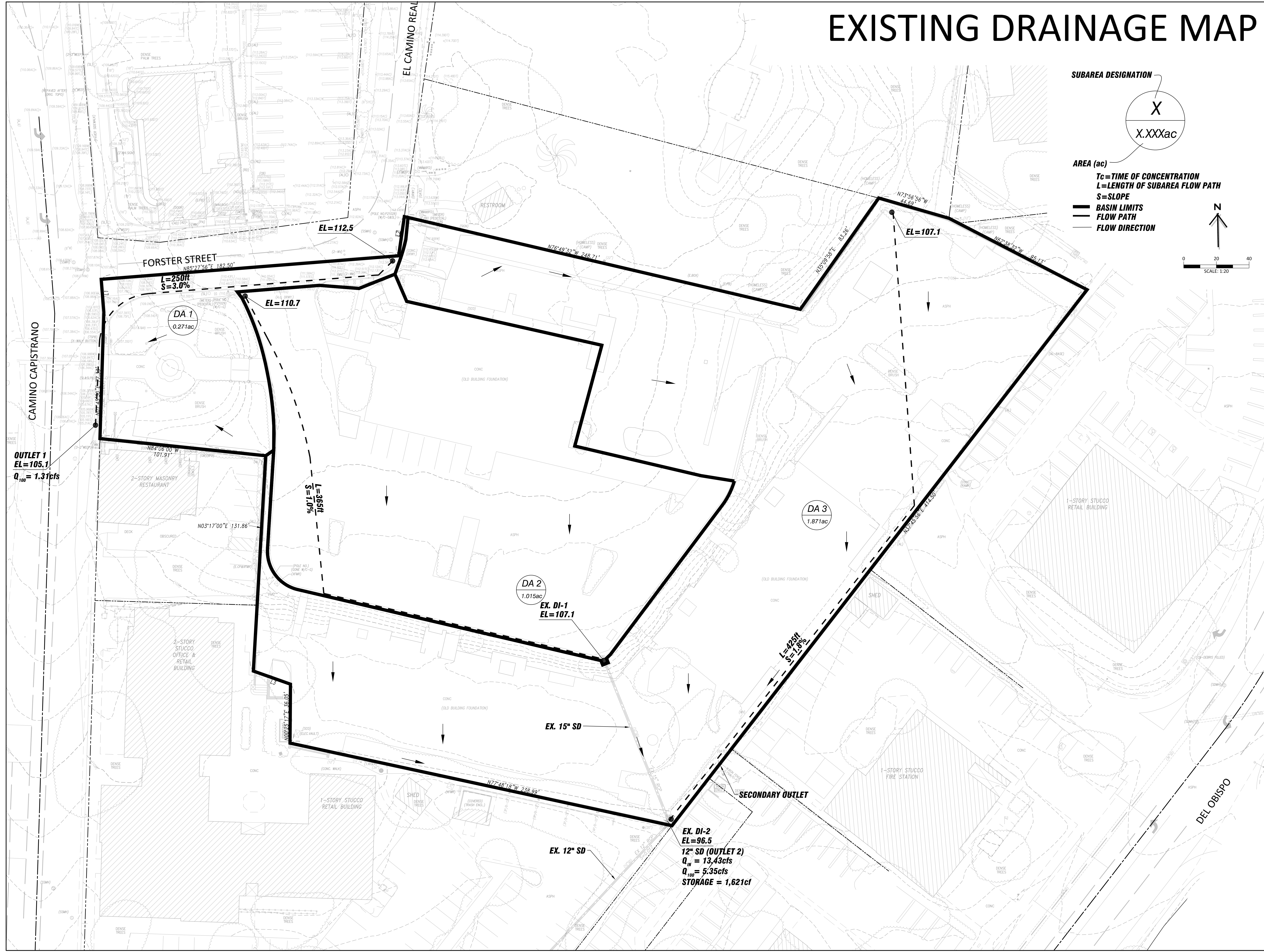


Appendix

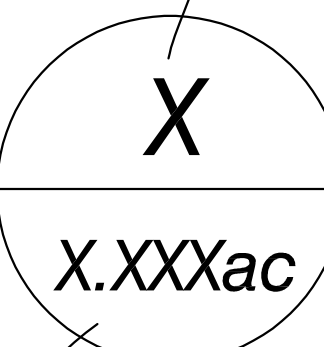


Existing Development

EXISTING DRAINAGE MAP



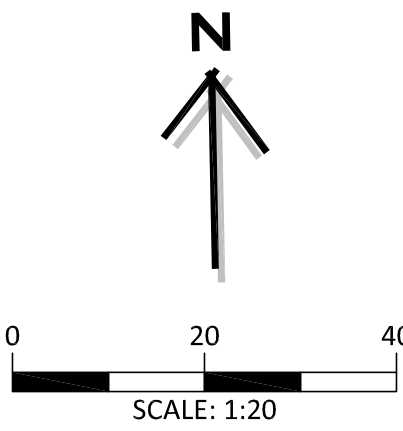
SUBAREA DESIGNATION



AREA (ac)

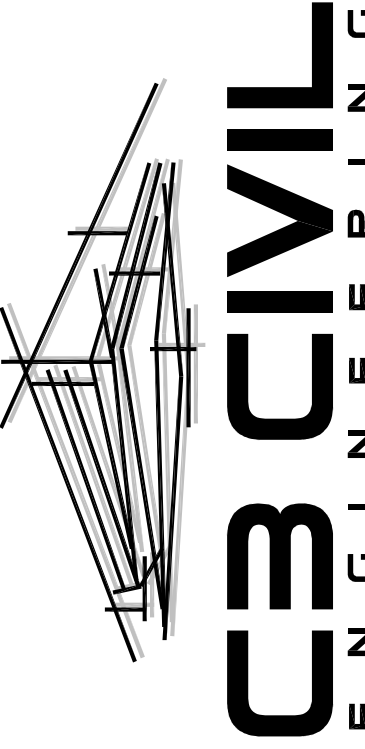
T_c = TIME OF CONCENTRATION
 L = LENGTH OF SUBAREA FLOW PATH
 S = SLOPE

— BASIN LIMITS
- - - FLOW PATH
- - - FLOW DIRECTION



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PROFESSIONAL SEAL



DATE: 07/01/2024
C3 JOB NO: 22-011
DRAWN BY: TH
CHECKED BY: TH

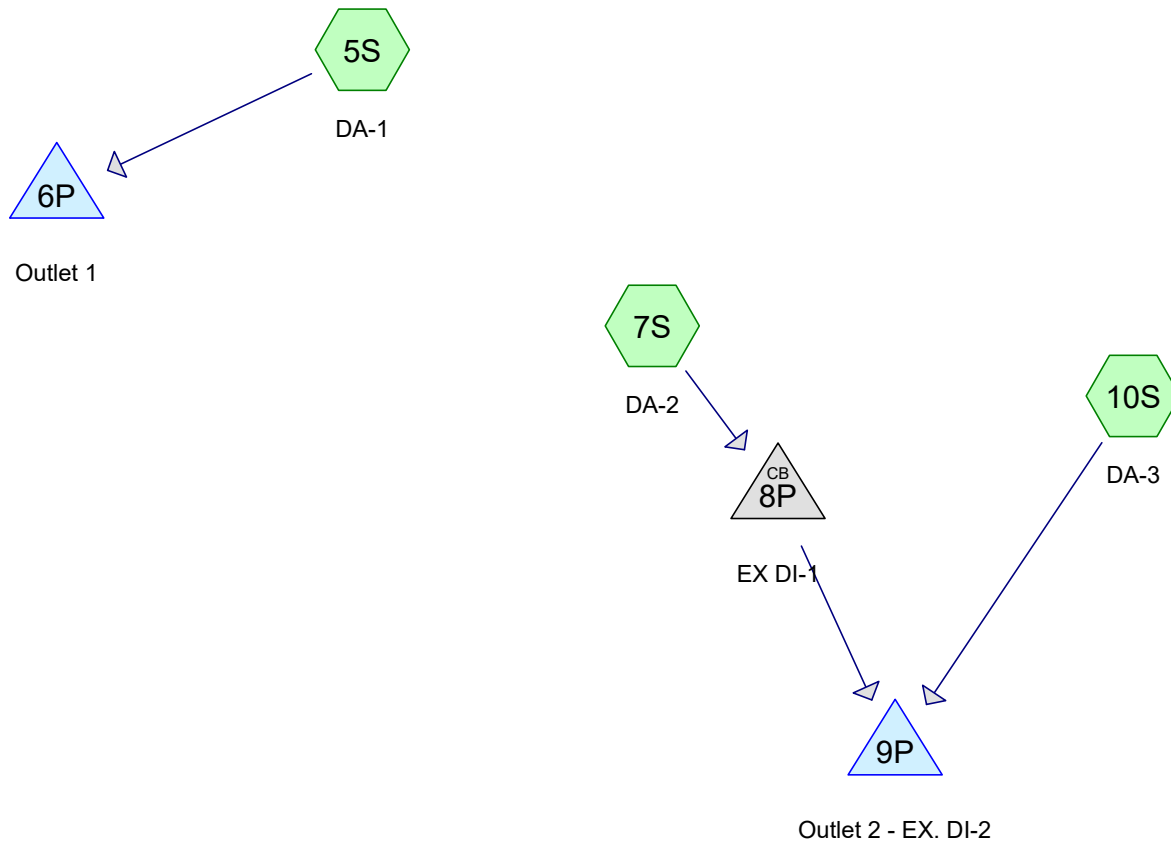
SHEET TITLE

EXISTING DRAINAGE MAP

SHEET NUMBER

13 of 15

EXISTING IMPROVEMENT CALCULATIONS



Routing Diagram for 22011-Drainage Calcs (EX)

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22011-Drainage Calcs (EX)

Prepared by C3 Civil Engineering, LLC

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Area Listing (all nodes)

Area (sq-ft)	C	Description (subcatchment-numbers)
4,518	0.95	(5S)
7,295	0.70	(5S)
41,413	0.95	Parking Lot (7S)
67,846	0.95	Parking lot and drive aisles (10S)
13,651	0.60	landscape area (10S)
2,794	0.70	landscaping islands (7S)
137,517	0.90	TOTAL AREA

22011-Drainage Calcs (EX)

Prepared by C3 Civil Engineering, LLC

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	8P	99.00	96.90	103.0	0.0204	0.013	15.0	0.0	0.0
2	9P	96.50	90.40	364.8	0.0167	0.013	12.0	0.0	0.0

Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment5S: DA-1 Runoff Area=11,813 sf 38.25% Impervious Runoff Depth=0.32"
Flow Length=250' Slope=0.0300 '/' Tc=5.0 min C=0.80 Runoff=1.02 cfs 316 cf

Subcatchment7S: DA-2 Runoff Area=44,207 sf 93.68% Impervious Runoff Depth=0.33"
Flow Length=365' Slope=0.0100 '/' Tc=5.6 min C=0.93 Runoff=3.95 cfs 1,227 cf

Subcatchment10S: DA-3 Runoff Area=81,497 sf 83.25% Impervious Runoff Depth=0.30"
Flow Length=425' Slope=0.0180 '/' Tc=6.0 min C=0.89 Runoff=6.51 cfs 2,020 cf

Pond 6P: Outlet 1 Inflow=1.02 cfs 316 cf
Primary=1.02 cfs 316 cf

Pond 8P: EX DI-1 Peak Elev=99.92' Inflow=3.95 cfs 1,227 cf
15.0" Round Culvert n=0.013 L=103.0' S=0.0204 '/' Outflow=3.95 cfs 1,227 cf

Pond 9P: Outlet 2 - EX. DI-2 Peak Elev=100.37' Storage=884 cf Inflow=10.46 cfs 3,247 cf
12.0" Round Culvert n=0.013 L=364.8' S=0.0167 '/' Outflow=5.31 cfs 3,277 cf

Total Runoff Area = 137,517 sf Runoff Volume = 3,562 cf Average Runoff Depth = 0.31"
17.26% Pervious = 23,740 sf 82.74% Impervious = 113,777 sf

Summary for Subcatchment 5S: DA-1

Runoff = 1.02 cfs @ 0.08 hrs, Volume= 316 cf, Depth= 0.32"

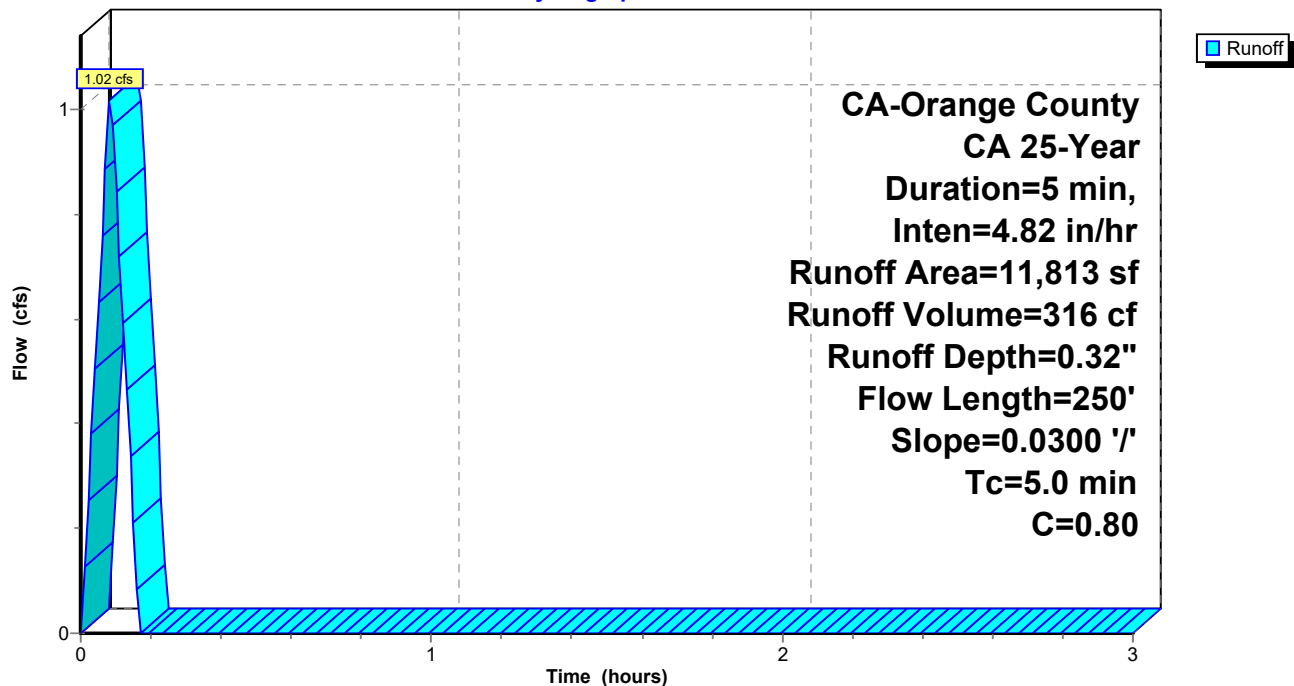
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 25-Year Duration=5 min, Inten=4.82 in/hr

Area (sf)	C	Description
4,518	0.95	
7,295	0.70	
11,813	0.80	Weighted Average
7,295		61.75% Pervious Area
4,518		38.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	250	0.0300	1.67		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.37"
2.5	250	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: DA-1

Hydrograph



Hydrograph for Subcatchment 5S: DA-1

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.25	1.04	0.00	2.06	0.00
0.04	0.51	1.06	0.00	2.08	0.00
0.06	0.76	1.08	0.00	2.10	0.00
0.08	1.01	1.10	0.00	2.12	0.00
0.10	0.84	1.12	0.00	2.14	0.00
0.12	0.59	1.14	0.00	2.16	0.00
0.14	0.34	1.16	0.00	2.18	0.00
0.16	0.08	1.18	0.00	2.20	0.00
0.18	0.00	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment 7S: DA-2

[48] Hint: Peak<CiA due to short duration

Runoff = 3.95 cfs @ 0.08 hrs, Volume= 1,227 cf, Depth= 0.33"

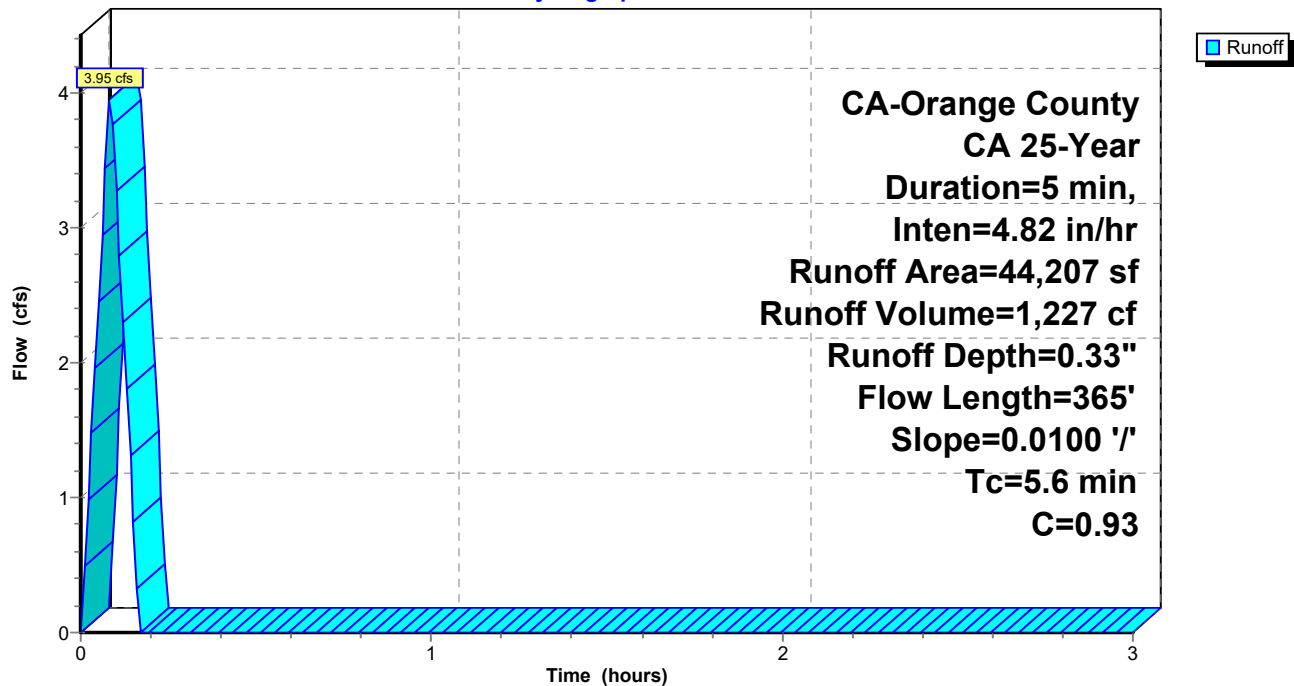
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 25-Year Duration=5 min, Inten=4.82 in/hr

Area (sf)	C	Description
41,413	0.95	Parking Lot
2,794	0.70	landscaping islands
44,207	0.93	Weighted Average
2,794		6.32% Pervious Area
41,413		93.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	365	0.0100	1.08		Sheet Flow, n= 0.012 P2= 2.37"

Subcatchment 7S: DA-2

Hydrograph



Hydrograph for Subcatchment 7S: DA-2

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.98	1.04	0.00	2.06	0.00
0.04	1.97	1.06	0.00	2.08	0.00
0.06	2.95	1.08	0.00	2.10	0.00
0.08	3.93	1.10	0.00	2.12	0.00
0.10	3.28	1.12	0.00	2.14	0.00
0.12	2.29	1.14	0.00	2.16	0.00
0.14	1.31	1.16	0.00	2.18	0.00
0.16	0.33	1.18	0.00	2.20	0.00
0.18	0.00	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment 10S: DA-3

[48] Hint: Peak<CiA due to short duration

Runoff = 6.51 cfs @ 0.08 hrs, Volume= 2,020 cf, Depth= 0.30"

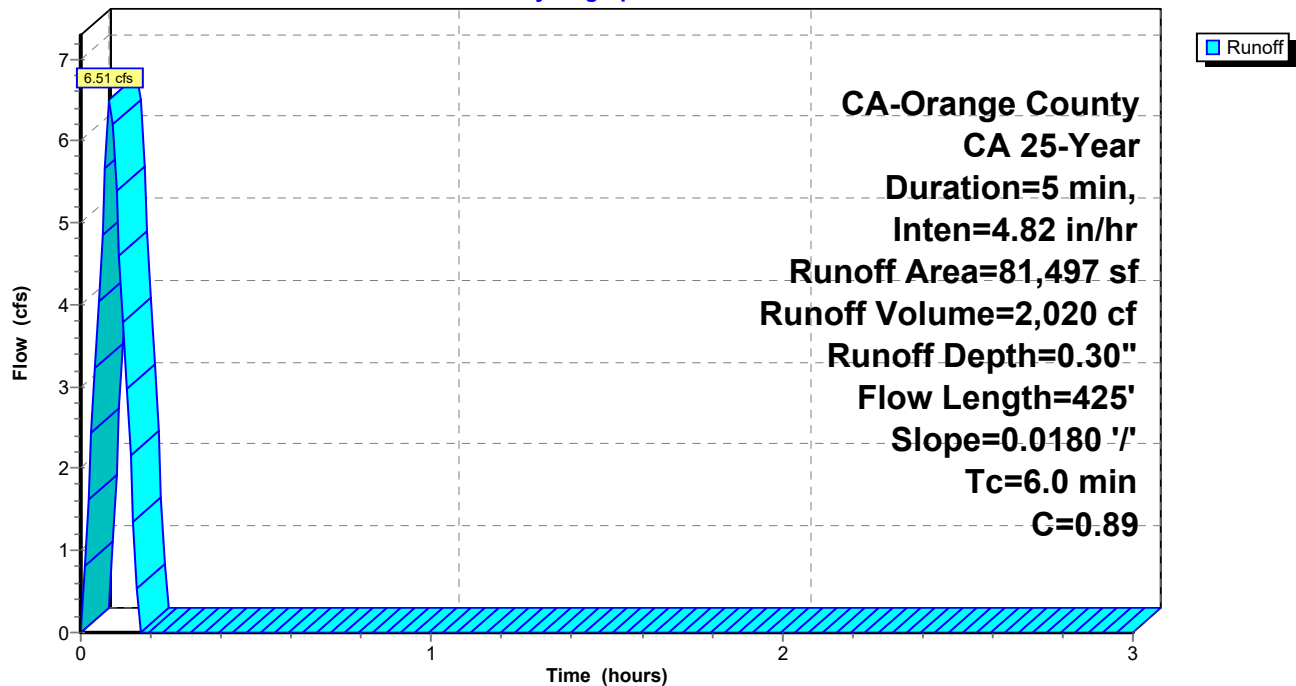
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 25-Year Duration=5 min, Inten=4.82 in/hr

Area (sf)	C	Description
67,846	0.95	Parking lot and drive aisles
13,651	0.60	landscape area
81,497	0.89	Weighted Average
13,651		16.75% Pervious Area
67,846		83.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	425	0.0180	1.18		Sheet Flow, n= 0.015 P2= 2.37"

Subcatchment 10S: DA-3

Hydrograph



Hydrograph for Subcatchment 10S: DA-3

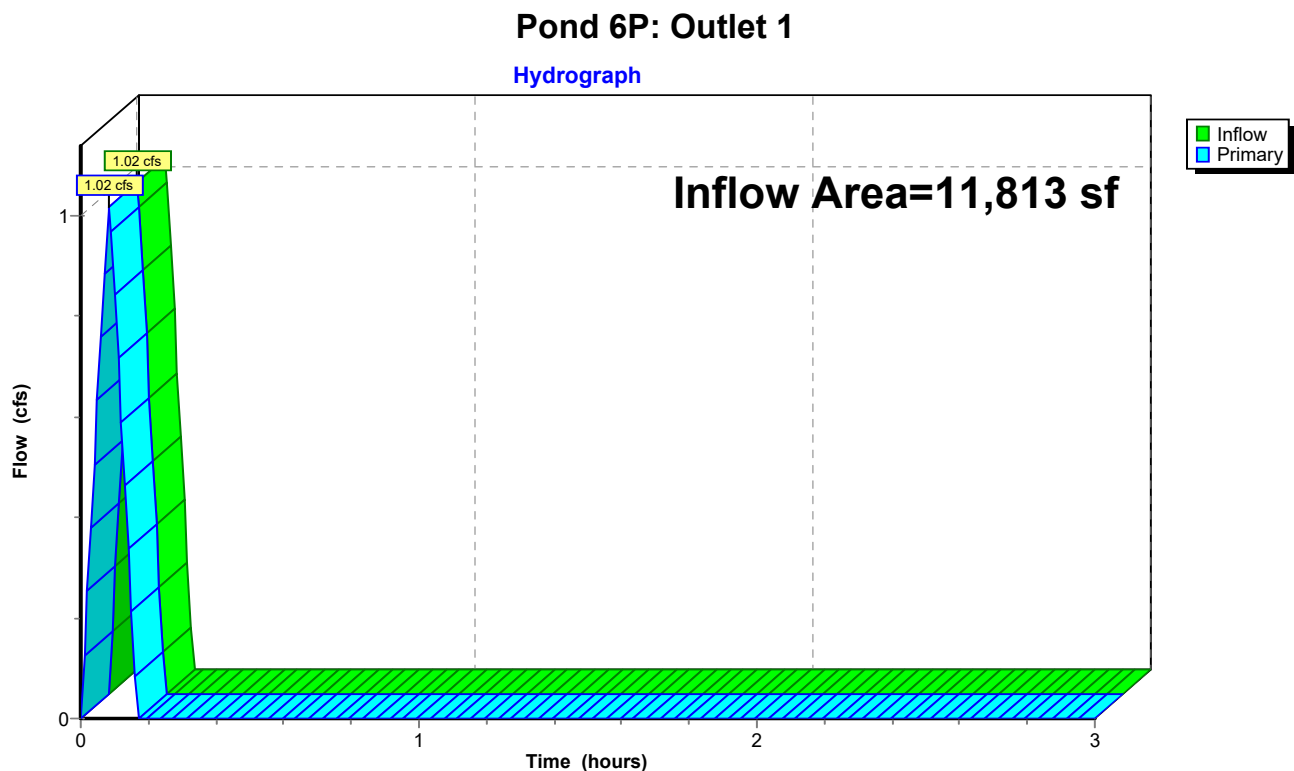
Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	1.62	1.04	0.00	2.06	0.00
0.04	3.24	1.06	0.00	2.08	0.00
0.06	4.86	1.08	0.00	2.10	0.00
0.08	6.47	1.10	0.00	2.12	0.00
0.10	5.40	1.12	0.00	2.14	0.00
0.12	3.78	1.14	0.00	2.16	0.00
0.14	2.16	1.16	0.00	2.18	0.00
0.16	0.54	1.18	0.00	2.20	0.00
0.18	0.00	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Pond 6P: Outlet 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11,813 sf, 38.25% Impervious, Inflow Depth = 0.32" for 25-Year event
Inflow = 1.02 cfs @ 0.08 hrs, Volume= 316 cf
Primary = 1.02 cfs @ 0.08 hrs, Volume= 316 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs



OUTLET 1 Q_{25} = 1.02 CFS

Hydrograph for Pond 6P: Outlet 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	2.55	0.00		0.00
0.05	0.63		0.63	2.60	0.00		0.00
0.10	0.84		0.84	2.65	0.00		0.00
0.15	0.21		0.21	2.70	0.00		0.00
0.20	0.00		0.00	2.75	0.00		0.00
0.25	0.00		0.00	2.80	0.00		0.00
0.30	0.00		0.00	2.85	0.00		0.00
0.35	0.00		0.00	2.90	0.00		0.00
0.40	0.00		0.00	2.95	0.00		0.00
0.45	0.00		0.00	3.00	0.00		0.00
0.50	0.00		0.00				
0.55	0.00		0.00				
0.60	0.00		0.00				
0.65	0.00		0.00				
0.70	0.00		0.00				
0.75	0.00		0.00				
0.80	0.00		0.00				
0.85	0.00		0.00				
0.90	0.00		0.00				
0.95	0.00		0.00				
1.00	0.00		0.00				
1.05	0.00		0.00				
1.10	0.00		0.00				
1.15	0.00		0.00				
1.20	0.00		0.00				
1.25	0.00		0.00				
1.30	0.00		0.00				
1.35	0.00		0.00				
1.40	0.00		0.00				
1.45	0.00		0.00				
1.50	0.00		0.00				
1.55	0.00		0.00				
1.60	0.00		0.00				
1.65	0.00		0.00				
1.70	0.00		0.00				
1.75	0.00		0.00				
1.80	0.00		0.00				
1.85	0.00		0.00				
1.90	0.00		0.00				
1.95	0.00		0.00				
2.00	0.00		0.00				
2.05	0.00		0.00				
2.10	0.00		0.00				
2.15	0.00		0.00				
2.20	0.00		0.00				
2.25	0.00		0.00				
2.30	0.00		0.00				
2.35	0.00		0.00				
2.40	0.00		0.00				
2.45	0.00		0.00				
2.50	0.00		0.00				

Summary for Pond 8P: EX DI-1

[57] Hint: Peaked at 99.92' (Flood elevation advised)

Inflow Area = 44,207 sf, 93.68% Impervious, Inflow Depth = 0.33" for 25-Year event
 Inflow = 3.95 cfs @ 0.08 hrs, Volume= 1,227 cf
 Outflow = 3.95 cfs @ 0.08 hrs, Volume= 1,227 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.95 cfs @ 0.08 hrs, Volume= 1,227 cf

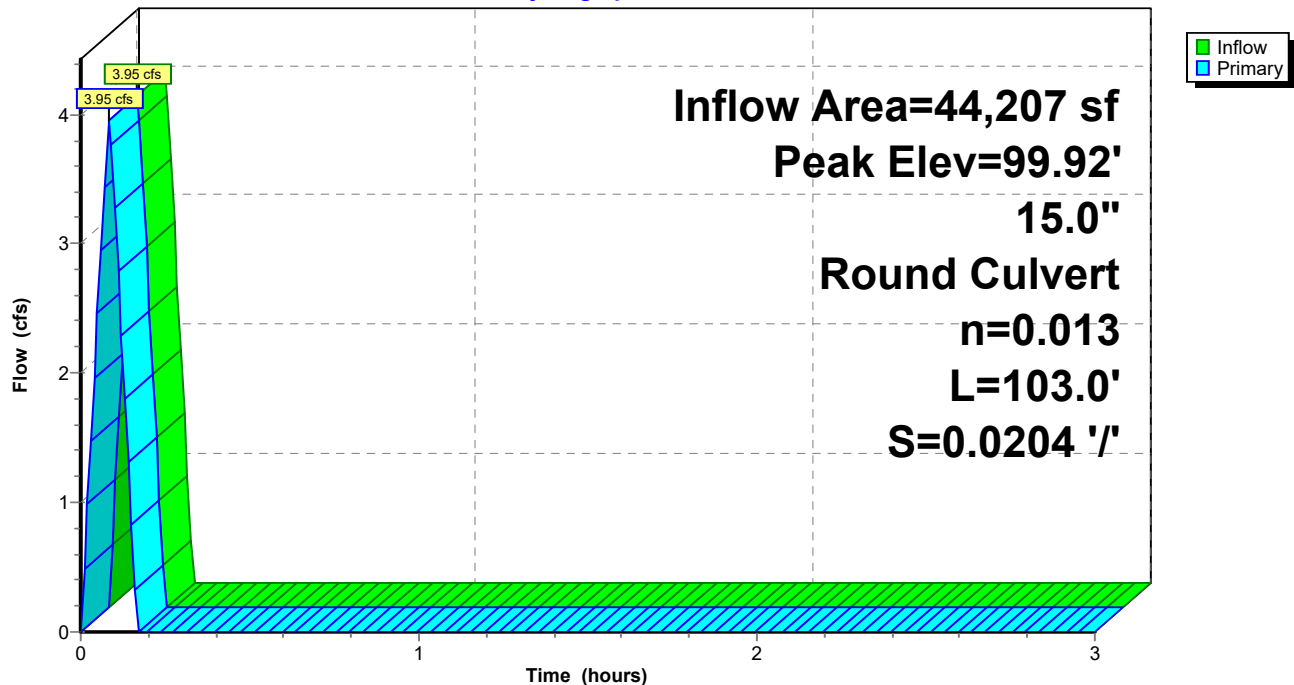
Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 99.92' @ 0.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	15.0" Round Culvert L= 103.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 99.00' / 96.90' S= 0.0204 '/ Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

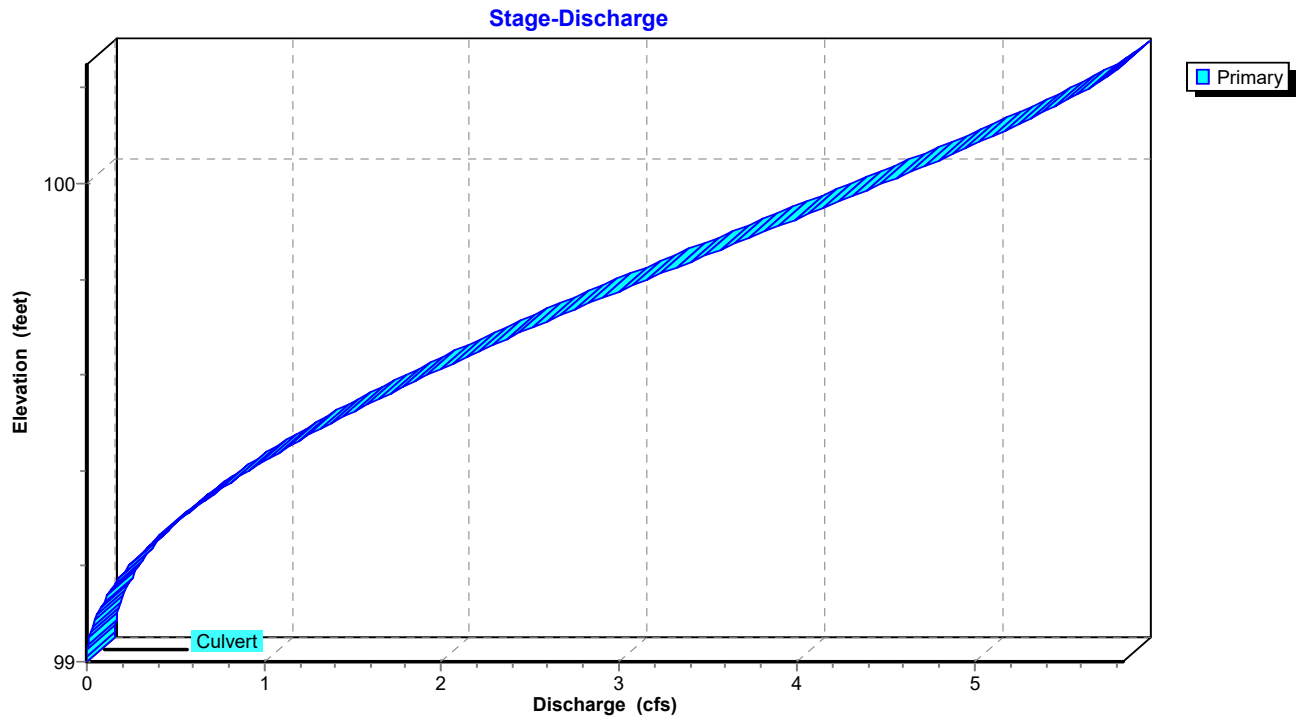
Primary OutFlow Max=3.89 cfs @ 0.08 hrs HW=99.91' (Free Discharge)
 ↑1=Culvert (Inlet Controls 3.89 cfs @ 4.06 fps)

Pond 8P: EX DI-1

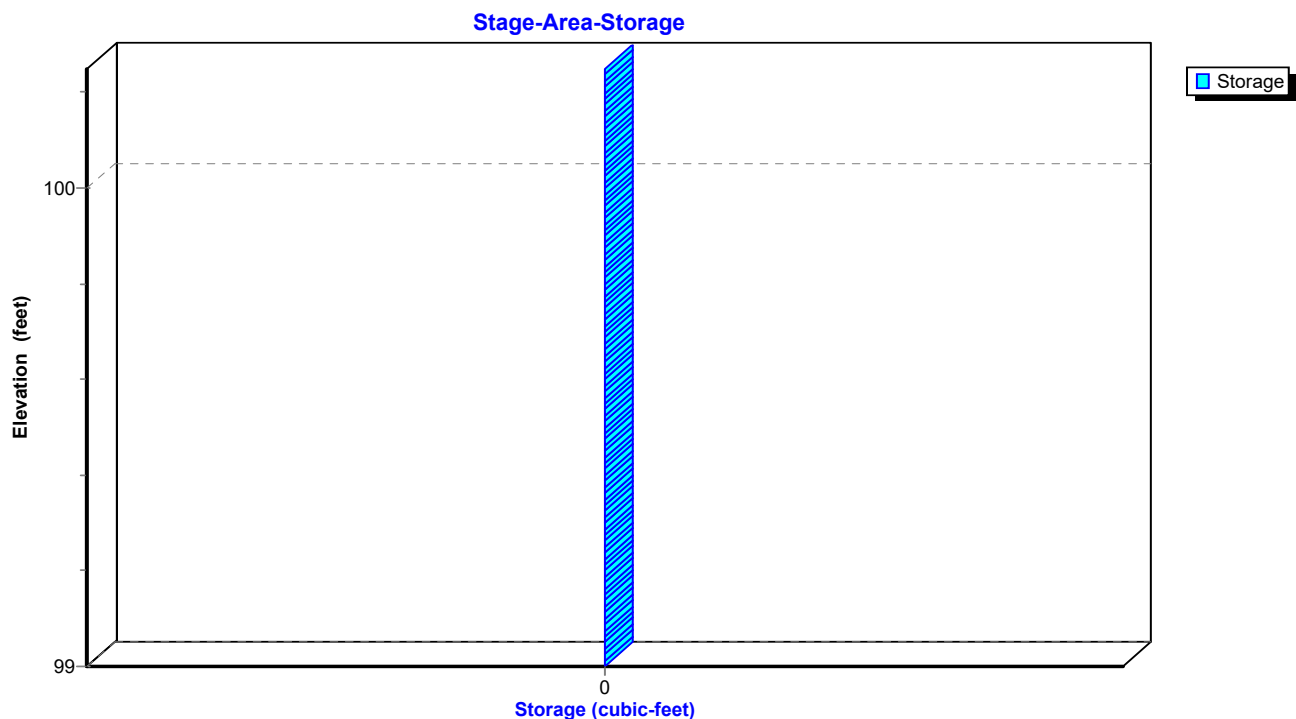
Hydrograph



Pond 8P: EX DI-1



Pond 8P: EX DI-1



Hydrograph for Pond 8P: EX DI-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	99.00	0.00	2.55	0.00	99.00	0.00
0.05	2.46	99.69	2.46	2.60	0.00	99.00	0.00
0.10	3.28	99.82	3.28	2.65	0.00	99.00	0.00
0.15	0.82	99.38	0.82	2.70	0.00	99.00	0.00
0.20	0.00	99.00	0.00	2.75	0.00	99.00	0.00
0.25	0.00	99.00	0.00	2.80	0.00	99.00	0.00
0.30	0.00	99.00	0.00	2.85	0.00	99.00	0.00
0.35	0.00	99.00	0.00	2.90	0.00	99.00	0.00
0.40	0.00	99.00	0.00	2.95	0.00	99.00	0.00
0.45	0.00	99.00	0.00	3.00	0.00	99.00	0.00
0.50	0.00	99.00	0.00				
0.55	0.00	99.00	0.00				
0.60	0.00	99.00	0.00				
0.65	0.00	99.00	0.00				
0.70	0.00	99.00	0.00				
0.75	0.00	99.00	0.00				
0.80	0.00	99.00	0.00				
0.85	0.00	99.00	0.00				
0.90	0.00	99.00	0.00				
0.95	0.00	99.00	0.00				
1.00	0.00	99.00	0.00				
1.05	0.00	99.00	0.00				
1.10	0.00	99.00	0.00				
1.15	0.00	99.00	0.00				
1.20	0.00	99.00	0.00				
1.25	0.00	99.00	0.00				
1.30	0.00	99.00	0.00				
1.35	0.00	99.00	0.00				
1.40	0.00	99.00	0.00				
1.45	0.00	99.00	0.00				
1.50	0.00	99.00	0.00				
1.55	0.00	99.00	0.00				
1.60	0.00	99.00	0.00				
1.65	0.00	99.00	0.00				
1.70	0.00	99.00	0.00				
1.75	0.00	99.00	0.00				
1.80	0.00	99.00	0.00				
1.85	0.00	99.00	0.00				
1.90	0.00	99.00	0.00				
1.95	0.00	99.00	0.00				
2.00	0.00	99.00	0.00				
2.05	0.00	99.00	0.00				
2.10	0.00	99.00	0.00				
2.15	0.00	99.00	0.00				
2.20	0.00	99.00	0.00				
2.25	0.00	99.00	0.00				
2.30	0.00	99.00	0.00				
2.35	0.00	99.00	0.00				
2.40	0.00	99.00	0.00				
2.45	0.00	99.00	0.00				
2.50	0.00	99.00	0.00				

Stage-Discharge for Pond 8P: EX DI-1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
99.00	0.00	99.51	1.43	100.02	4.61
99.01	0.00	99.52	1.48	100.03	4.67
99.02	0.00	99.53	1.53	100.04	4.74
99.03	0.00	99.54	1.59	100.05	4.80
99.04	0.01	99.55	1.64	100.06	4.86
99.05	0.01	99.56	1.70	100.07	4.92
99.06	0.02	99.57	1.75	100.08	4.98
99.07	0.03	99.58	1.81	100.09	5.05
99.08	0.04	99.59	1.86	100.10	5.11
99.09	0.05	99.60	1.92	100.11	5.16
99.10	0.06	99.61	1.98	100.12	5.22
99.11	0.07	99.62	2.04	100.13	5.28
99.12	0.09	99.63	2.09	100.14	5.34
99.13	0.10	99.64	2.15	100.15	5.39
99.14	0.12	99.65	2.21	100.16	5.44
99.15	0.14	99.66	2.27	100.17	5.50
99.16	0.16	99.67	2.33	100.18	5.55
99.17	0.18	99.68	2.39	100.19	5.60
99.18	0.20	99.69	2.46	100.20	5.64
99.19	0.22	99.70	2.52	100.21	5.69
99.20	0.24	99.71	2.58	100.22	5.73
99.21	0.27	99.72	2.64	100.23	5.77
99.22	0.29	99.73	2.71	100.24	5.81
99.23	0.32	99.74	2.77	100.25	5.84
99.24	0.34	99.75	2.83		
99.25	0.37	99.76	2.90		
99.26	0.40	99.77	2.96		
99.27	0.43	99.78	3.03		
99.28	0.46	99.79	3.09		
99.29	0.49	99.80	3.16		
99.30	0.53	99.81	3.22		
99.31	0.56	99.82	3.29		
99.32	0.60	99.83	3.35		
99.33	0.63	99.84	3.42		
99.34	0.67	99.85	3.49		
99.35	0.71	99.86	3.55		
99.36	0.75	99.87	3.62		
99.37	0.79	99.88	3.69		
99.38	0.83	99.89	3.75		
99.39	0.87	99.90	3.82		
99.40	0.91	99.91	3.89		
99.41	0.95	99.92	3.95		
99.42	1.00	99.93	4.02		
99.43	1.04	99.94	4.08		
99.44	1.09	99.95	4.15		
99.45	1.14	99.96	4.22		
99.46	1.18	99.97	4.28		
99.47	1.23	99.98	4.35		
99.48	1.28	99.99	4.41		
99.49	1.33	100.00	4.48		
99.50	1.38	100.01	4.54		

Summary for Pond 9P: Outlet 2 - EX. DI-2

[44] Hint: Outlet device #1 is below defined storage
 [81] Warning: Exceeded Pond 8P by 1.22' @ 0.17 hrs

Inflow Area = 125,704 sf, 86.92% Impervious, Inflow Depth = 0.31" for 25-Year event
 Inflow = 10.46 cfs @ 0.08 hrs, Volume= 3,247 cf
 Outflow = 5.31 cfs @ 0.13 hrs, Volume= 3,277 cf, Atten= 49%, Lag= 2.6 min
 Primary = 5.31 cfs @ 0.13 hrs, Volume= 3,277 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 100.37' @ 0.13 hrs Surf.Area= 3,830 sf Storage= 884 cf

Plug-Flow detention time= 1.4 min calculated for 3,244 cf (100% of inflow)
 Center-of-Mass det. time= 1.5 min (6.5 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	96.90'	6,140 cf	Custom Stage Data (Irregular) Listed below (Recalc)

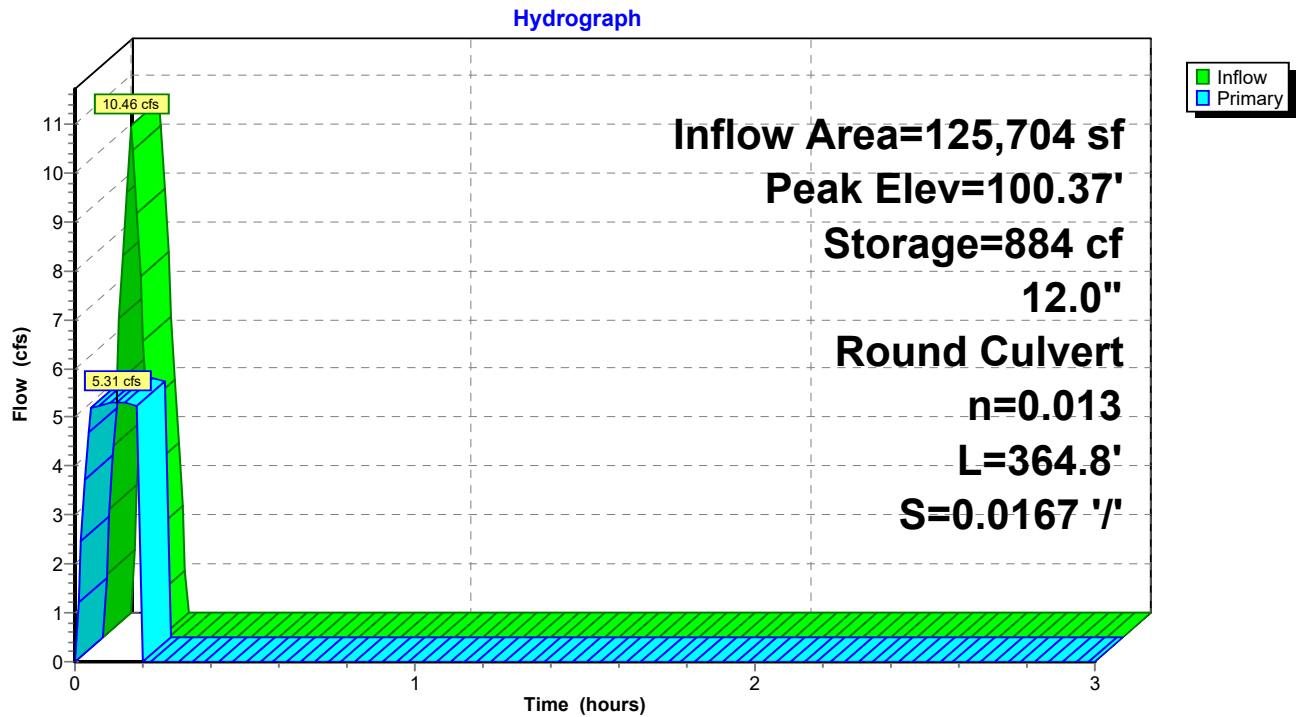
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
96.90	16	16.0	0	0	16
99.90	16	16.0	48	48	64
100.00	890	515.0	34	82	21,150
101.00	13,780	1,615.0	6,057	6,140	207,603

Device	Routing	Invert	Outlet Devices
#1	Primary	96.50'	12.0" Round Culvert L= 364.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 96.50' / 90.40' S= 0.0167 ' S= 0.0167 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

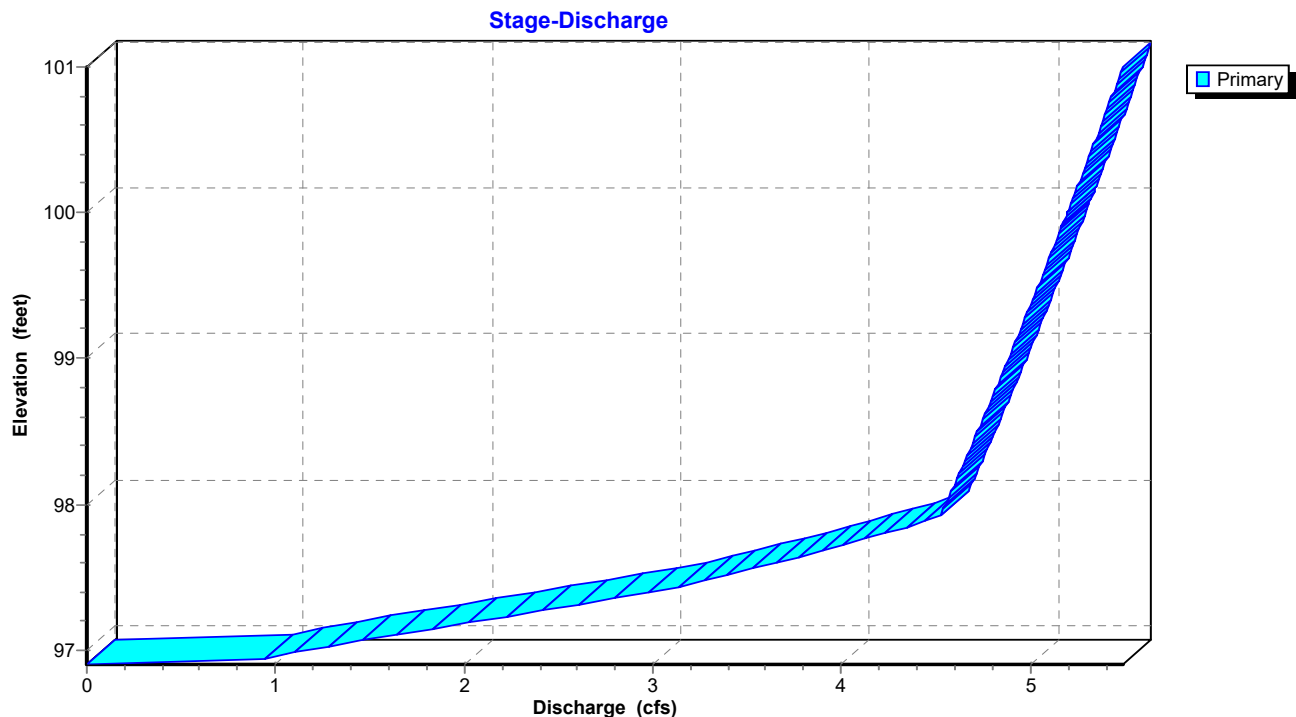
Primary OutFlow Max=5.31 cfs @ 0.13 hrs HW=100.36' (Free Discharge)
 ↑ **1=Culvert** (Barrel Controls 5.31 cfs @ 6.75 fps)

OUTLET 2 Q₂₅ = 5.31 CFS

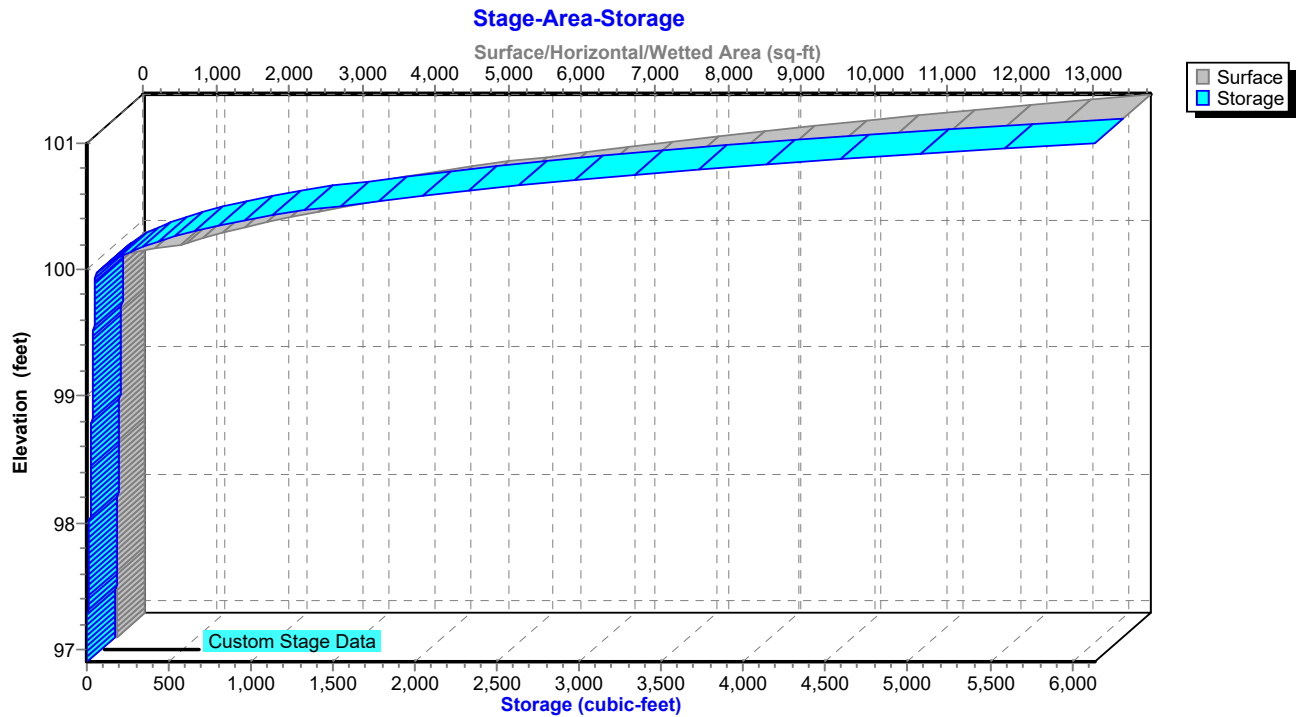
Pond 9P: Outlet 2 - EX. DI-2



Pond 9P: Outlet 2 - EX. DI-2



Pond 9P: Outlet 2 - EX. DI-2



Hydrograph for Pond 9P: Outlet 2 - EX. DI-2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	96.90	0.00
0.10	8.67	729	100.32	5.29
0.20	0.00	0	96.90	0.00
0.30	0.00	0	96.90	0.00
0.40	0.00	0	96.90	0.00
0.50	0.00	0	96.90	0.00
0.60	0.00	0	96.90	0.00
0.70	0.00	0	96.90	0.00
0.80	0.00	0	96.90	0.00
0.90	0.00	0	96.90	0.00
1.00	0.00	0	96.90	0.00
1.10	0.00	0	96.90	0.00
1.20	0.00	0	96.90	0.00
1.30	0.00	0	96.90	0.00
1.40	0.00	0	96.90	0.00
1.50	0.00	0	96.90	0.00
1.60	0.00	0	96.90	0.00
1.70	0.00	0	96.90	0.00
1.80	0.00	0	96.90	0.00
1.90	0.00	0	96.90	0.00
2.00	0.00	0	96.90	0.00
2.10	0.00	0	96.90	0.00
2.20	0.00	0	96.90	0.00
2.30	0.00	0	96.90	0.00
2.40	0.00	0	96.90	0.00
2.50	0.00	0	96.90	0.00
2.60	0.00	0	96.90	0.00
2.70	0.00	0	96.90	0.00
2.80	0.00	0	96.90	0.00
2.90	0.00	0	96.90	0.00
3.00	0.00	0	96.90	0.00

Stage-Discharge for Pond 9P: Outlet 2 - EX. DI-2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
96.90	0.00	99.45	5.03
96.95	0.98	99.50	5.04
97.00	1.18	99.55	5.06
97.05	1.40	99.60	5.07
97.10	1.62	99.65	5.09
97.15	1.85	99.70	5.10
97.20	2.09	99.75	5.12
97.25	2.33	99.80	5.14
97.30	2.56	99.85	5.15
97.35	2.79	99.90	5.17
97.40	3.01	99.95	5.18
97.45	3.20	100.00	5.20
97.50	3.34	100.05	5.21
97.55	3.51	100.10	5.23
97.60	3.66	100.15	5.24
97.65	3.81	100.20	5.26
97.70	3.95	100.25	5.27
97.75	4.09	100.30	5.29
97.80	4.23	100.35	5.30
97.85	4.36	100.40	5.32
97.90	4.48	100.45	5.33
97.95	4.53	100.50	5.34
98.00	4.55	100.55	5.36
98.05	4.57	100.60	5.37
98.10	4.59	100.65	5.39
98.15	4.60	100.70	5.40
98.20	4.62	100.75	5.42
98.25	4.64	100.80	5.43
98.30	4.65	100.85	5.45
98.35	4.67	100.90	5.46
98.40	4.69	100.95	5.48
98.45	4.70	101.00	5.49
98.50	4.72		
98.55	4.74		
98.60	4.75		
98.65	4.77		
98.70	4.79		
98.75	4.80		
98.80	4.82		
98.85	4.84		
98.90	4.85		
98.95	4.87		
99.00	4.88		
99.05	4.90		
99.10	4.92		
99.15	4.93		
99.20	4.95		
99.25	4.96		
99.30	4.98		
99.35	5.00		
99.40	5.01		

Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment5S: DA-1 Runoff Area=11,813 sf 38.25% Impervious Runoff Depth=0.41"
Flow Length=250' Slope=0.0300 '/' Tc=5.0 min C=0.80 Runoff=1.31 cfs 406 cf

Subcatchment7S: DA-2 Runoff Area=44,207 sf 93.68% Impervious Runoff Depth=0.43"
Flow Length=365' Slope=0.0100 '/' Tc=5.6 min C=0.93 Runoff=5.08 cfs 1,575 cf

Subcatchment10S: DA-3 Runoff Area=81,497 sf 83.25% Impervious Runoff Depth=0.38"
Flow Length=425' Slope=0.0180 '/' Tc=6.0 min C=0.89 Runoff=8.36 cfs 2,594 cf

Pond 6P: Outlet 1 Inflow=1.31 cfs 406 cf
Primary=1.31 cfs 406 cf

Pond 8P: EX DI-1 Peak Elev=100.09' Inflow=5.08 cfs 1,575 cf
15.0" Round Culvert n=0.013 L=103.0' S=0.0204 '/' Outflow=5.08 cfs 1,575 cf

Pond 9P: Outlet 2 - EX. DI-2 Peak Elev=100.52' Storage=1,621 cf Inflow=13.43 cfs 4,169 cf
12.0" Round Culvert n=0.013 L=364.8' S=0.0167 '/' Outflow=5.35 cfs 4,190 cf

Total Runoff Area = 137,517 sf Runoff Volume = 4,575 cf Average Runoff Depth = 0.40"
17.26% Pervious = 23,740 sf 82.74% Impervious = 113,777 sf

Summary for Subcatchment 5S: DA-1

Runoff = 1.31 cfs @ 0.08 hrs, Volume= 406 cf, Depth= 0.41"

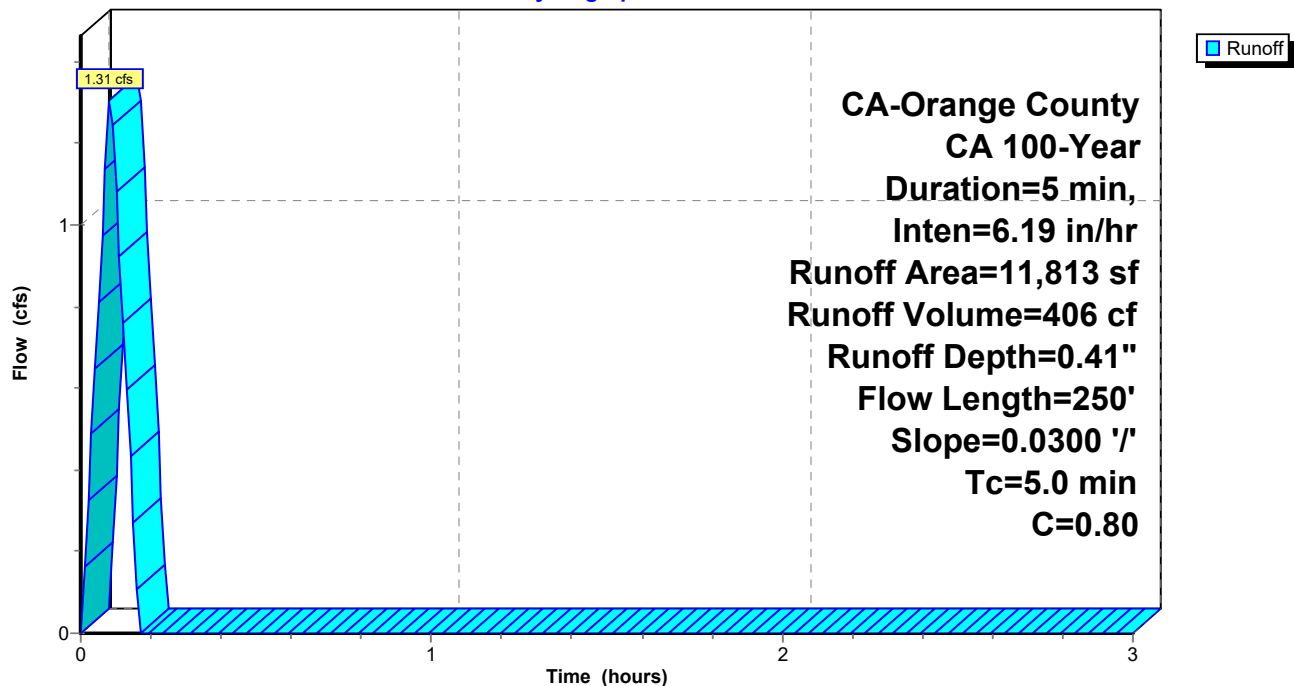
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 100-Year Duration=5 min, Inten=6.19 in/hr

Area (sf)	C	Description
4,518	0.95	
7,295	0.70	
11,813	0.80	Weighted Average
7,295		61.75% Pervious Area
4,518		38.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	250	0.0300	1.67		Sheet Flow, Smooth surfaces n= 0.011 P2= 2.37"
2.5	250	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 5S: DA-1

Hydrograph



Hydrograph for Subcatchment 5S: DA-1

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.32	1.04	0.00	2.06	0.00
0.04	0.65	1.06	0.00	2.08	0.00
0.06	0.97	1.08	0.00	2.10	0.00
0.08	1.30	1.10	0.00	2.12	0.00
0.10	1.08	1.12	0.00	2.14	0.00
0.12	0.76	1.14	0.00	2.16	0.00
0.14	0.43	1.16	0.00	2.18	0.00
0.16	0.11	1.18	0.00	2.20	0.00
0.18	0.00	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment 7S: DA-2

[48] Hint: Peak<CiA due to short duration

Runoff = 5.08 cfs @ 0.08 hrs, Volume= 1,575 cf, Depth= 0.43"

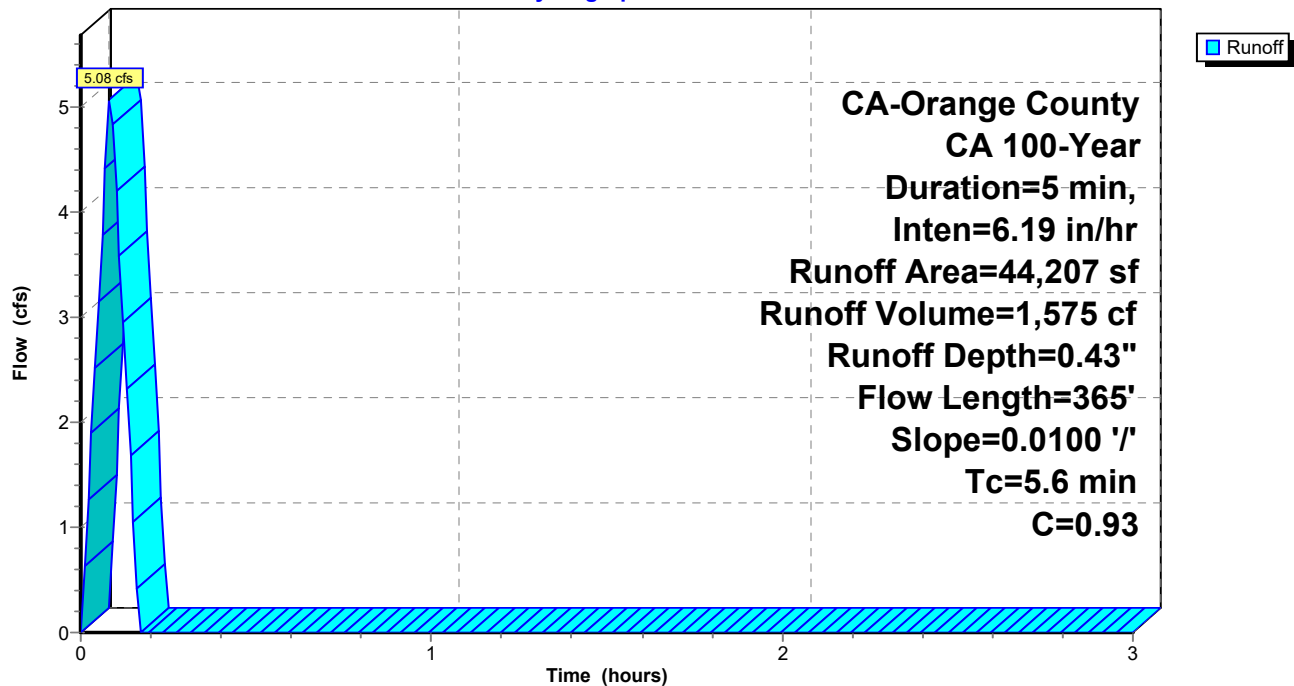
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 100-Year Duration=5 min, Inten=6.19 in/hr

Area (sf)	C	Description
41,413	0.95	Parking Lot
2,794	0.70	landscaping islands
44,207	0.93	Weighted Average
2,794		6.32% Pervious Area
41,413		93.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	365	0.0100	1.08		Sheet Flow, n= 0.012 P2= 2.37"

Subcatchment 7S: DA-2

Hydrograph



Hydrograph for Subcatchment 7S: DA-2

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	1.26	1.04	0.00	2.06	0.00
0.04	2.52	1.06	0.00	2.08	0.00
0.06	3.79	1.08	0.00	2.10	0.00
0.08	5.05	1.10	0.00	2.12	0.00
0.10	4.21	1.12	0.00	2.14	0.00
0.12	2.95	1.14	0.00	2.16	0.00
0.14	1.68	1.16	0.00	2.18	0.00
0.16	0.42	1.18	0.00	2.20	0.00
0.18	0.00	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment 10S: DA-3

[48] Hint: Peak<CiA due to short duration

Runoff = 8.36 cfs @ 0.08 hrs, Volume= 2,594 cf, Depth= 0.38"

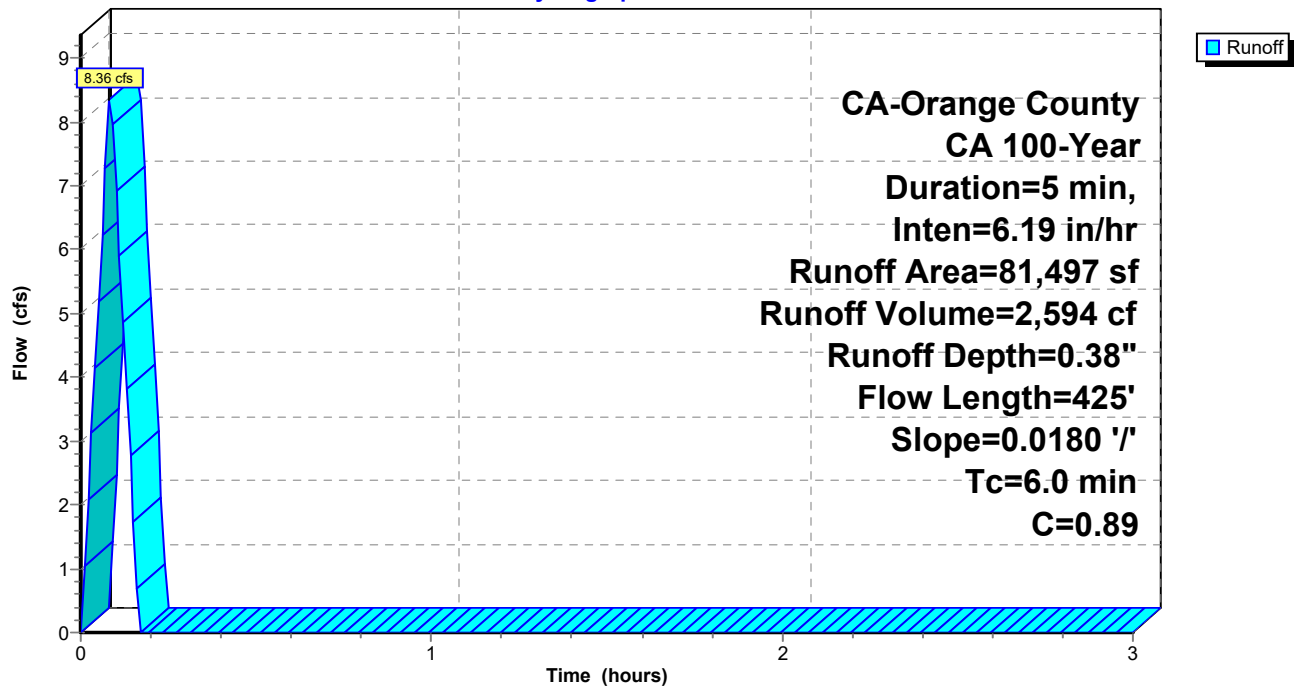
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 100-Year Duration=5 min, Inten=6.19 in/hr

Area (sf)	C	Description
67,846	0.95	Parking lot and drive aisles
13,651	0.60	landscape area
81,497	0.89	Weighted Average
13,651		16.75% Pervious Area
67,846		83.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	425	0.0180	1.18		Sheet Flow, n= 0.015 P2= 2.37"

Subcatchment 10S: DA-3

Hydrograph



Hydrograph for Subcatchment 10S: DA-3

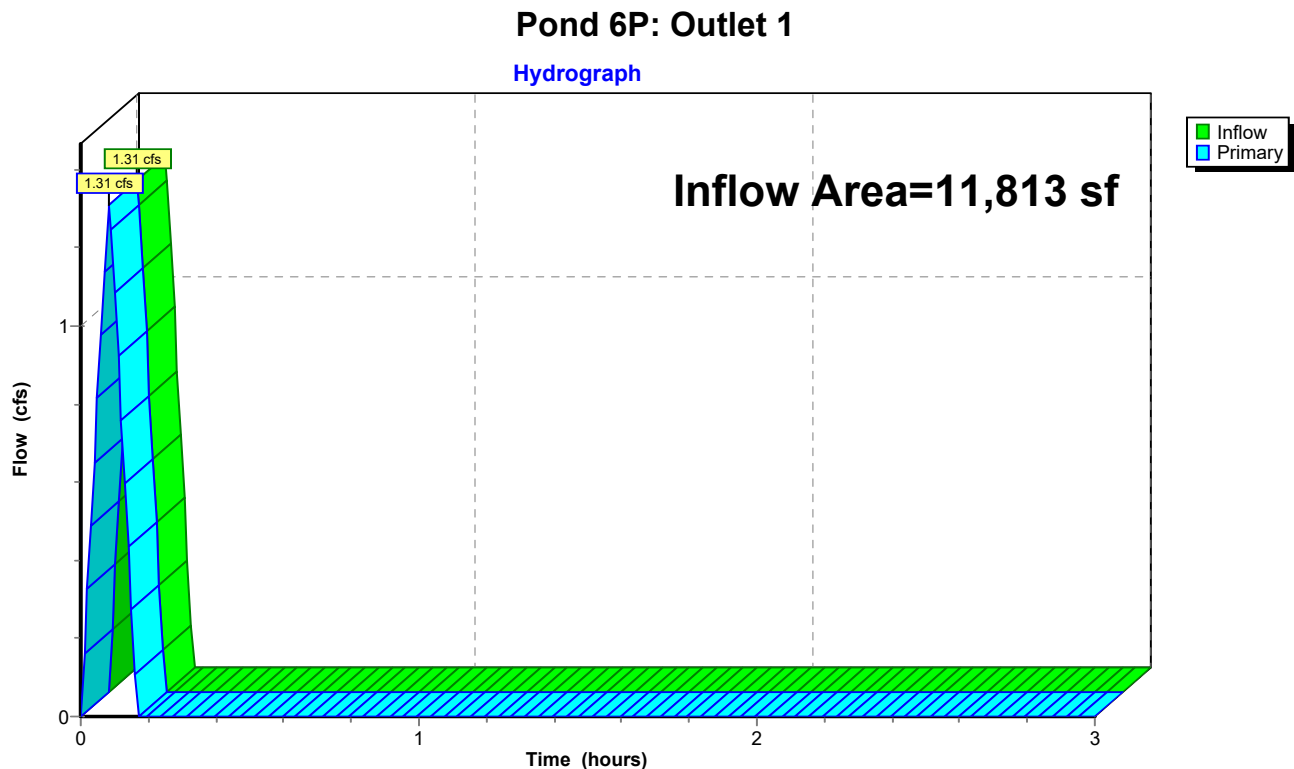
Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	2.08	1.04	0.00	2.06	0.00
0.04	4.16	1.06	0.00	2.08	0.00
0.06	6.24	1.08	0.00	2.10	0.00
0.08	8.31	1.10	0.00	2.12	0.00
0.10	6.93	1.12	0.00	2.14	0.00
0.12	4.85	1.14	0.00	2.16	0.00
0.14	2.77	1.16	0.00	2.18	0.00
0.16	0.69	1.18	0.00	2.20	0.00
0.18	0.00	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Pond 6P: Outlet 1

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 11,813 sf, 38.25% Impervious, Inflow Depth = 0.41" for 100-Year event
Inflow = 1.31 cfs @ 0.08 hrs, Volume= 406 cf
Primary = 1.31 cfs @ 0.08 hrs, Volume= 406 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs



Hydrograph for Pond 6P: Outlet 1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	2.55	0.00		0.00
0.05	0.81		0.81	2.60	0.00		0.00
0.10	1.08		1.08	2.65	0.00		0.00
0.15	0.27		0.27	2.70	0.00		0.00
0.20	0.00		0.00	2.75	0.00		0.00
0.25	0.00		0.00	2.80	0.00		0.00
0.30	0.00		0.00	2.85	0.00		0.00
0.35	0.00		0.00	2.90	0.00		0.00
0.40	0.00		0.00	2.95	0.00		0.00
0.45	0.00		0.00	3.00	0.00		0.00
0.50	0.00		0.00				
0.55	0.00		0.00				
0.60	0.00		0.00				
0.65	0.00		0.00				
0.70	0.00		0.00				
0.75	0.00		0.00				
0.80	0.00		0.00				
0.85	0.00		0.00				
0.90	0.00		0.00				
0.95	0.00		0.00				
1.00	0.00		0.00				
1.05	0.00		0.00				
1.10	0.00		0.00				
1.15	0.00		0.00				
1.20	0.00		0.00				
1.25	0.00		0.00				
1.30	0.00		0.00				
1.35	0.00		0.00				
1.40	0.00		0.00				
1.45	0.00		0.00				
1.50	0.00		0.00				
1.55	0.00		0.00				
1.60	0.00		0.00				
1.65	0.00		0.00				
1.70	0.00		0.00				
1.75	0.00		0.00				
1.80	0.00		0.00				
1.85	0.00		0.00				
1.90	0.00		0.00				
1.95	0.00		0.00				
2.00	0.00		0.00				
2.05	0.00		0.00				
2.10	0.00		0.00				
2.15	0.00		0.00				
2.20	0.00		0.00				
2.25	0.00		0.00				
2.30	0.00		0.00				
2.35	0.00		0.00				
2.40	0.00		0.00				
2.45	0.00		0.00				
2.50	0.00		0.00				

Summary for Pond 8P: EX DI-1

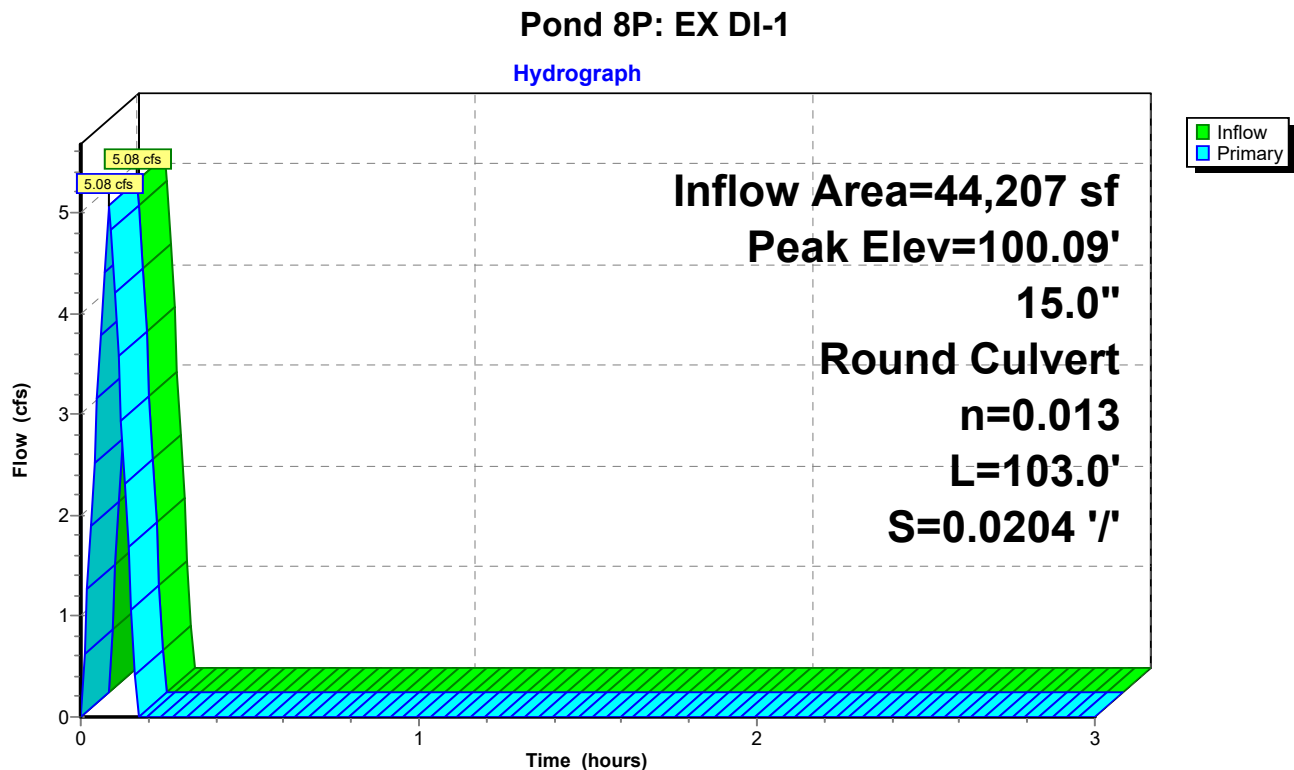
[57] Hint: Peaked at 100.09' (Flood elevation advised)

Inflow Area = 44,207 sf, 93.68% Impervious, Inflow Depth = 0.43" for 100-Year event
 Inflow = 5.08 cfs @ 0.08 hrs, Volume= 1,575 cf
 Outflow = 5.08 cfs @ 0.08 hrs, Volume= 1,575 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.08 cfs @ 0.08 hrs, Volume= 1,575 cf

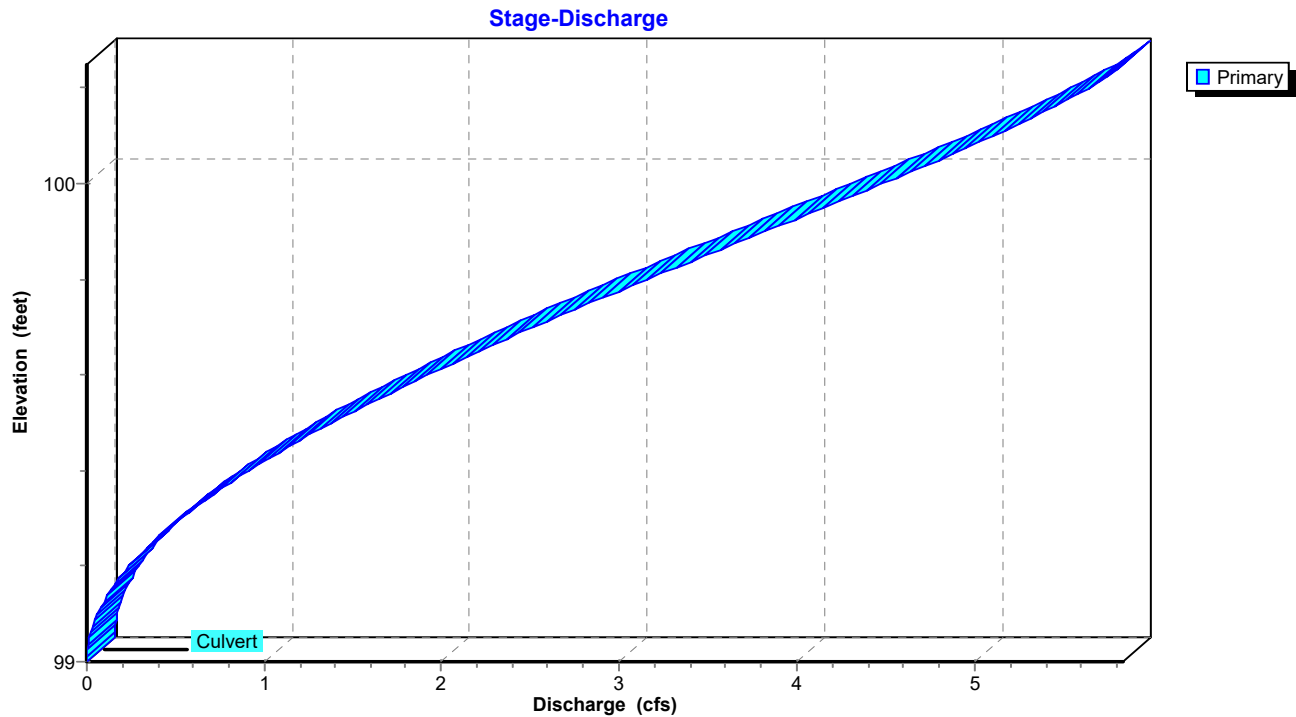
Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 100.09' @ 0.08 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	99.00'	15.0" Round Culvert L= 103.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 99.00' / 96.90' S= 0.0204 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

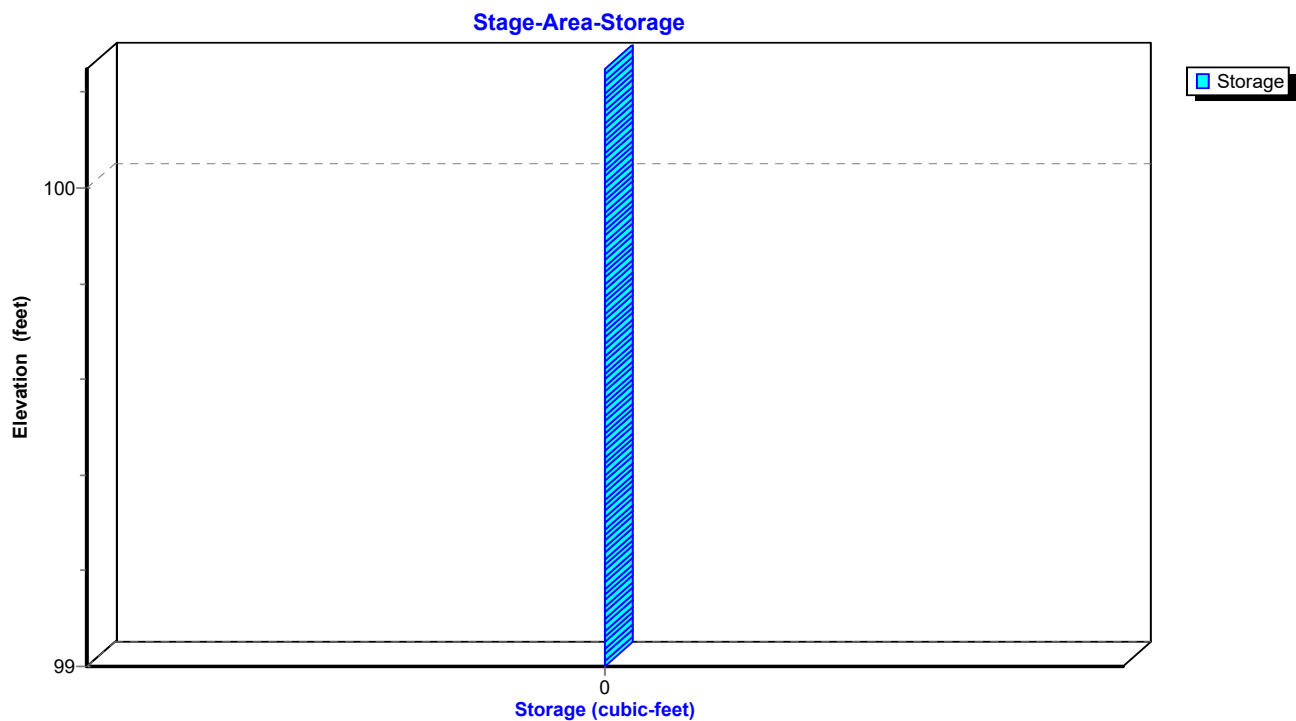
Primary OutFlow Max=5.00 cfs @ 0.08 hrs HW=100.08' (Free Discharge)
 ↑1=Culvert (Inlet Controls 5.00 cfs @ 4.43 fps)



Pond 8P: EX DI-1



Pond 8P: EX DI-1



Hydrograph for Pond 8P: EX DI-1

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	99.00	0.00	2.55	0.00	99.00	0.00
0.05	3.16	99.80	3.16	2.60	0.00	99.00	0.00
0.10	4.21	99.96	4.21	2.65	0.00	99.00	0.00
0.15	1.05	99.43	1.05	2.70	0.00	99.00	0.00
0.20	0.00	99.00	0.00	2.75	0.00	99.00	0.00
0.25	0.00	99.00	0.00	2.80	0.00	99.00	0.00
0.30	0.00	99.00	0.00	2.85	0.00	99.00	0.00
0.35	0.00	99.00	0.00	2.90	0.00	99.00	0.00
0.40	0.00	99.00	0.00	2.95	0.00	99.00	0.00
0.45	0.00	99.00	0.00	3.00	0.00	99.00	0.00
0.50	0.00	99.00	0.00				
0.55	0.00	99.00	0.00				
0.60	0.00	99.00	0.00				
0.65	0.00	99.00	0.00				
0.70	0.00	99.00	0.00				
0.75	0.00	99.00	0.00				
0.80	0.00	99.00	0.00				
0.85	0.00	99.00	0.00				
0.90	0.00	99.00	0.00				
0.95	0.00	99.00	0.00				
1.00	0.00	99.00	0.00				
1.05	0.00	99.00	0.00				
1.10	0.00	99.00	0.00				
1.15	0.00	99.00	0.00				
1.20	0.00	99.00	0.00				
1.25	0.00	99.00	0.00				
1.30	0.00	99.00	0.00				
1.35	0.00	99.00	0.00				
1.40	0.00	99.00	0.00				
1.45	0.00	99.00	0.00				
1.50	0.00	99.00	0.00				
1.55	0.00	99.00	0.00				
1.60	0.00	99.00	0.00				
1.65	0.00	99.00	0.00				
1.70	0.00	99.00	0.00				
1.75	0.00	99.00	0.00				
1.80	0.00	99.00	0.00				
1.85	0.00	99.00	0.00				
1.90	0.00	99.00	0.00				
1.95	0.00	99.00	0.00				
2.00	0.00	99.00	0.00				
2.05	0.00	99.00	0.00				
2.10	0.00	99.00	0.00				
2.15	0.00	99.00	0.00				
2.20	0.00	99.00	0.00				
2.25	0.00	99.00	0.00				
2.30	0.00	99.00	0.00				
2.35	0.00	99.00	0.00				
2.40	0.00	99.00	0.00				
2.45	0.00	99.00	0.00				
2.50	0.00	99.00	0.00				

Stage-Discharge for Pond 8P: EX DI-1

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
99.00	0.00	99.51	1.43	100.02	4.61
99.01	0.00	99.52	1.48	100.03	4.67
99.02	0.00	99.53	1.53	100.04	4.74
99.03	0.00	99.54	1.59	100.05	4.80
99.04	0.01	99.55	1.64	100.06	4.86
99.05	0.01	99.56	1.70	100.07	4.92
99.06	0.02	99.57	1.75	100.08	4.98
99.07	0.03	99.58	1.81	100.09	5.05
99.08	0.04	99.59	1.86	100.10	5.11
99.09	0.05	99.60	1.92	100.11	5.16
99.10	0.06	99.61	1.98	100.12	5.22
99.11	0.07	99.62	2.04	100.13	5.28
99.12	0.09	99.63	2.09	100.14	5.34
99.13	0.10	99.64	2.15	100.15	5.39
99.14	0.12	99.65	2.21	100.16	5.44
99.15	0.14	99.66	2.27	100.17	5.50
99.16	0.16	99.67	2.33	100.18	5.55
99.17	0.18	99.68	2.39	100.19	5.60
99.18	0.20	99.69	2.46	100.20	5.64
99.19	0.22	99.70	2.52	100.21	5.69
99.20	0.24	99.71	2.58	100.22	5.73
99.21	0.27	99.72	2.64	100.23	5.77
99.22	0.29	99.73	2.71	100.24	5.81
99.23	0.32	99.74	2.77	100.25	5.84
99.24	0.34	99.75	2.83		
99.25	0.37	99.76	2.90		
99.26	0.40	99.77	2.96		
99.27	0.43	99.78	3.03		
99.28	0.46	99.79	3.09		
99.29	0.49	99.80	3.16		
99.30	0.53	99.81	3.22		
99.31	0.56	99.82	3.29		
99.32	0.60	99.83	3.35		
99.33	0.63	99.84	3.42		
99.34	0.67	99.85	3.49		
99.35	0.71	99.86	3.55		
99.36	0.75	99.87	3.62		
99.37	0.79	99.88	3.69		
99.38	0.83	99.89	3.75		
99.39	0.87	99.90	3.82		
99.40	0.91	99.91	3.89		
99.41	0.95	99.92	3.95		
99.42	1.00	99.93	4.02		
99.43	1.04	99.94	4.08		
99.44	1.09	99.95	4.15		
99.45	1.14	99.96	4.22		
99.46	1.18	99.97	4.28		
99.47	1.23	99.98	4.35		
99.48	1.28	99.99	4.41		
99.49	1.33	100.00	4.48		
99.50	1.38	100.01	4.54		

Summary for Pond 9P: Outlet 2 - EX. DI-2

[44] Hint: Outlet device #1 is below defined storage
 [81] Warning: Exceeded Pond 8P by 1.45' @ 0.17 hrs

Inflow Area = 125,704 sf, 86.92% Impervious, Inflow Depth = 0.40" for 100-Year event
 Inflow = 13.43 cfs @ 0.08 hrs, Volume= 4,169 cf
 Outflow = 5.35 cfs @ 0.13 hrs, Volume= 4,190 cf, Atten= 60%, Lag= 3.1 min
 Primary = 5.35 cfs @ 0.13 hrs, Volume= 4,190 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 100.52' @ 0.13 hrs Surf.Area= 5,704 sf Storage= 1,621 cf

Plug-Flow detention time= 2.6 min calculated for 4,162 cf (100% of inflow)
 Center-of-Mass det. time= 2.6 min (7.6 - 5.0)

Volume	Invert	Avail.Storage	Storage Description
#1	96.90'	6,140 cf	Custom Stage Data (Irregular) Listed below (Recalc)

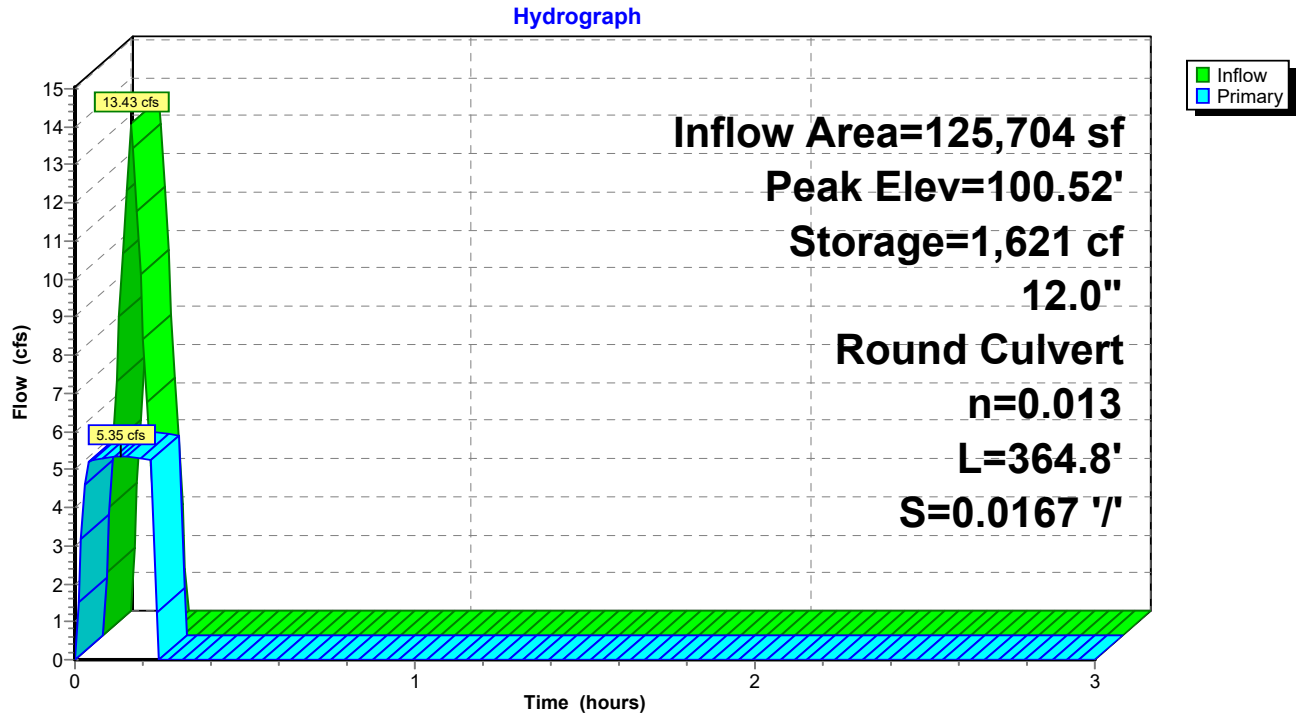
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
96.90	16	16.0	0	0	16
99.90	16	16.0	48	48	64
100.00	890	515.0	34	82	21,150
101.00	13,780	1,615.0	6,057	6,140	207,603

Device	Routing	Invert	Outlet Devices
#1	Primary	96.50'	12.0" Round Culvert L= 364.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 96.50' / 90.40' S= 0.0167 ' S= 0.0167 ' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

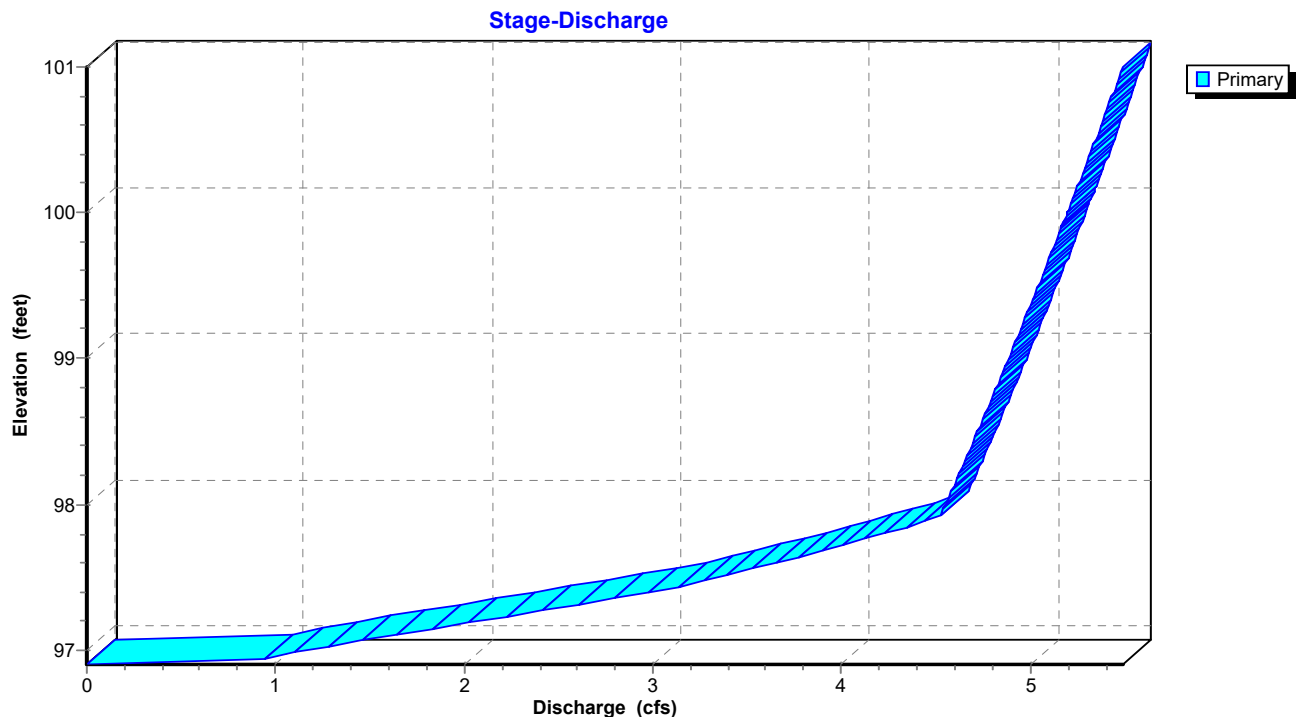
Primary OutFlow Max=5.35 cfs @ 0.13 hrs HW=100.52' (Free Discharge)
 ↑ **1=Culvert** (Barrel Controls 5.35 cfs @ 6.81 fps)

OUTLET 2 $Q_{100} = 5.35$ CFS

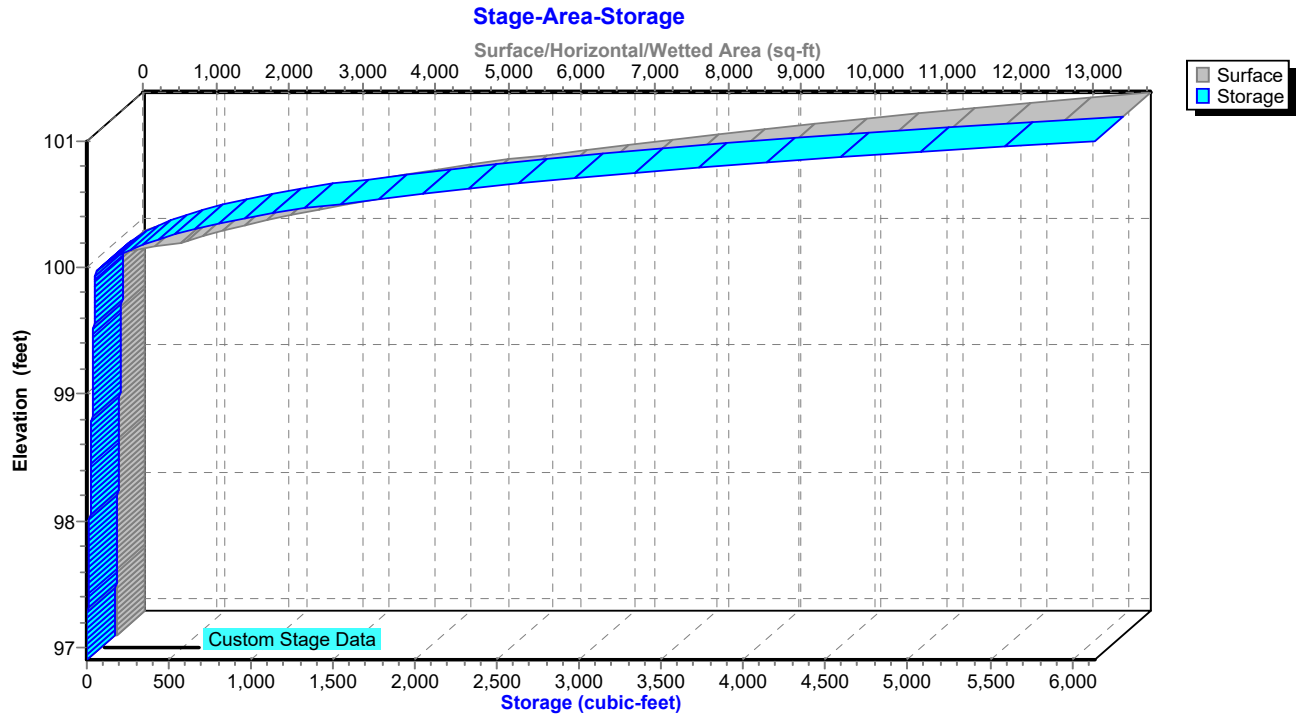
Pond 9P: Outlet 2 - EX. DI-2



Pond 9P: Outlet 2 - EX. DI-2



Pond 9P: Outlet 2 - EX. DI-2



Hydrograph for Pond 9P: Outlet 2 - EX. DI-2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	96.90	0.00
0.10	11.14	1,262	100.45	5.33
0.20	0.00	685	100.31	5.29
0.30	0.00	0	96.90	0.00
0.40	0.00	0	96.90	0.00
0.50	0.00	0	96.90	0.00
0.60	0.00	0	96.90	0.00
0.70	0.00	0	96.90	0.00
0.80	0.00	0	96.90	0.00
0.90	0.00	0	96.90	0.00
1.00	0.00	0	96.90	0.00
1.10	0.00	0	96.90	0.00
1.20	0.00	0	96.90	0.00
1.30	0.00	0	96.90	0.00
1.40	0.00	0	96.90	0.00
1.50	0.00	0	96.90	0.00
1.60	0.00	0	96.90	0.00
1.70	0.00	0	96.90	0.00
1.80	0.00	0	96.90	0.00
1.90	0.00	0	96.90	0.00
2.00	0.00	0	96.90	0.00
2.10	0.00	0	96.90	0.00
2.20	0.00	0	96.90	0.00
2.30	0.00	0	96.90	0.00
2.40	0.00	0	96.90	0.00
2.50	0.00	0	96.90	0.00
2.60	0.00	0	96.90	0.00
2.70	0.00	0	96.90	0.00
2.80	0.00	0	96.90	0.00
2.90	0.00	0	96.90	0.00
3.00	0.00	0	96.90	0.00

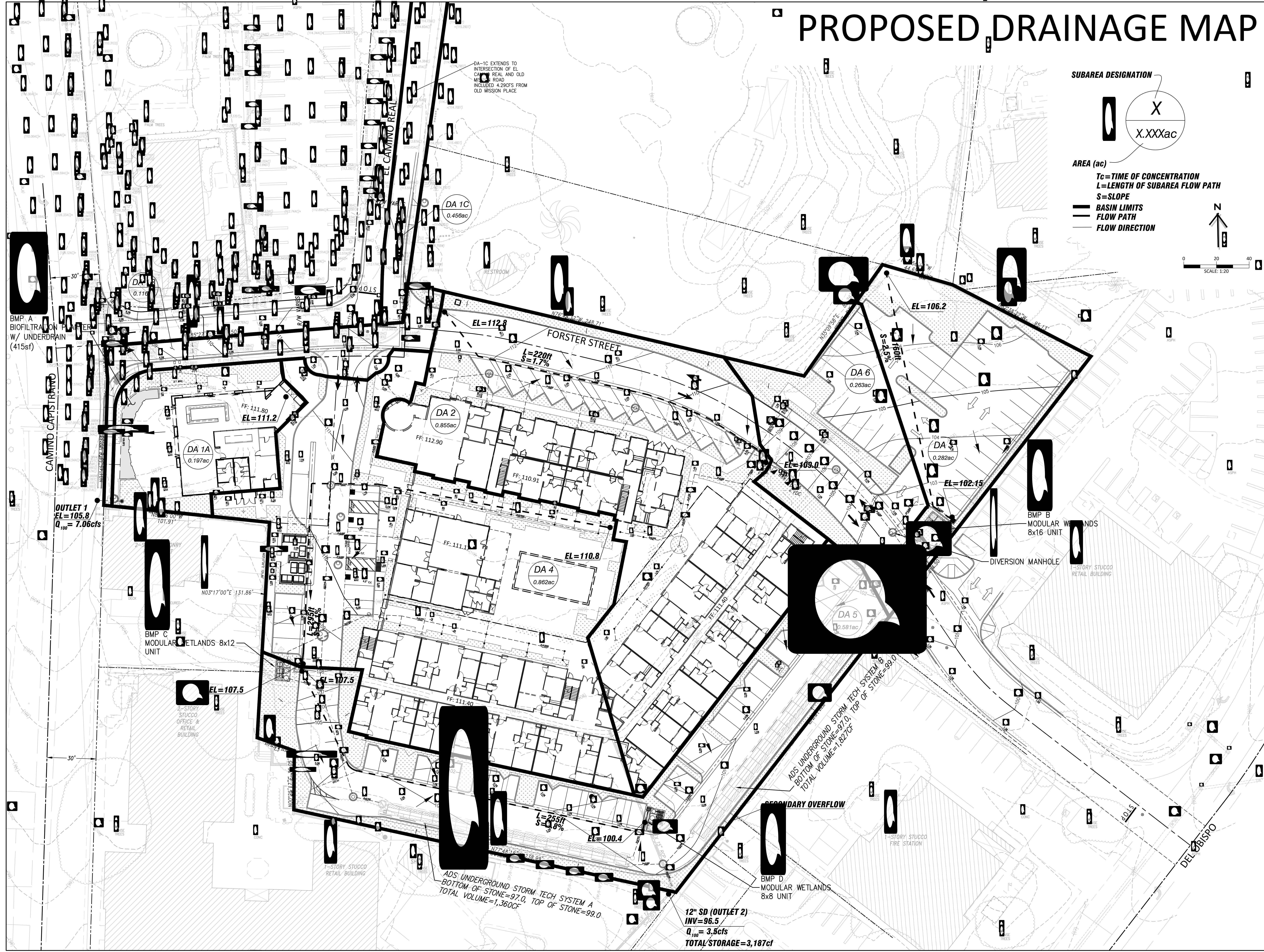
Stage-Discharge for Pond 9P: Outlet 2 - EX. DI-2

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
96.90	0.00	99.45	5.03
96.95	0.98	99.50	5.04
97.00	1.18	99.55	5.06
97.05	1.40	99.60	5.07
97.10	1.62	99.65	5.09
97.15	1.85	99.70	5.10
97.20	2.09	99.75	5.12
97.25	2.33	99.80	5.14
97.30	2.56	99.85	5.15
97.35	2.79	99.90	5.17
97.40	3.01	99.95	5.18
97.45	3.20	100.00	5.20
97.50	3.34	100.05	5.21
97.55	3.51	100.10	5.23
97.60	3.66	100.15	5.24
97.65	3.81	100.20	5.26
97.70	3.95	100.25	5.27
97.75	4.09	100.30	5.29
97.80	4.23	100.35	5.30
97.85	4.36	100.40	5.32
97.90	4.48	100.45	5.33
97.95	4.53	100.50	5.34
98.00	4.55	100.55	5.36
98.05	4.57	100.60	5.37
98.10	4.59	100.65	5.39
98.15	4.60	100.70	5.40
98.20	4.62	100.75	5.42
98.25	4.64	100.80	5.43
98.30	4.65	100.85	5.45
98.35	4.67	100.90	5.46
98.40	4.69	100.95	5.48
98.45	4.70	101.00	5.49
98.50	4.72		
98.55	4.74		
98.60	4.75		
98.65	4.77		
98.70	4.79		
98.75	4.80		
98.80	4.82		
98.85	4.84		
98.90	4.85		
98.95	4.87		
99.00	4.88		
99.05	4.90		
99.10	4.92		
99.15	4.93		
99.20	4.95		
99.25	4.96		
99.30	4.98		
99.35	5.00		
99.40	5.01		

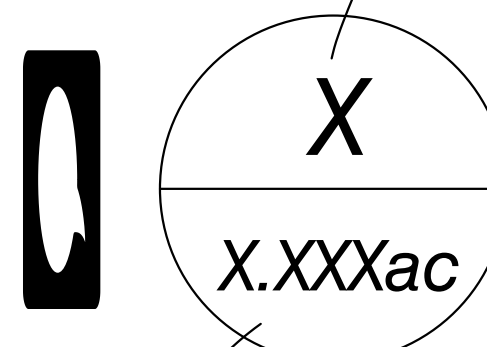


Proposed Development

PROPOSED DRAINAGE MAP



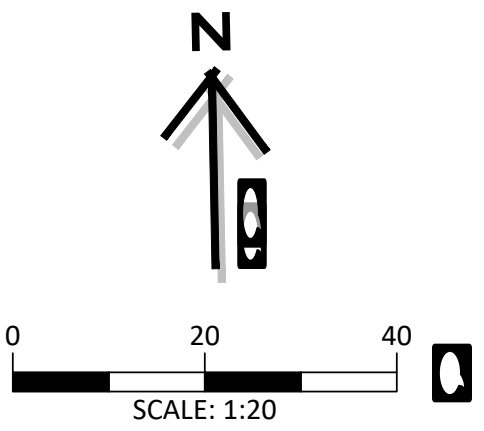
SUBAREA DESIGNATION



AREA (ac)

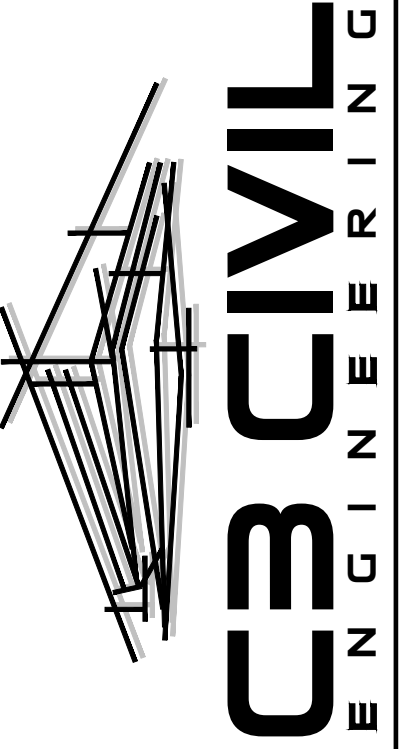
T_c=TIME OF CONCENTRATION
L=LENGTH OF SUBAREA FLOW PATH
S=SLOPE

— BASIN LIMITS
— FLOW PATH
— FLOW DIRECTION



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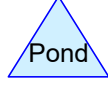
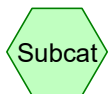
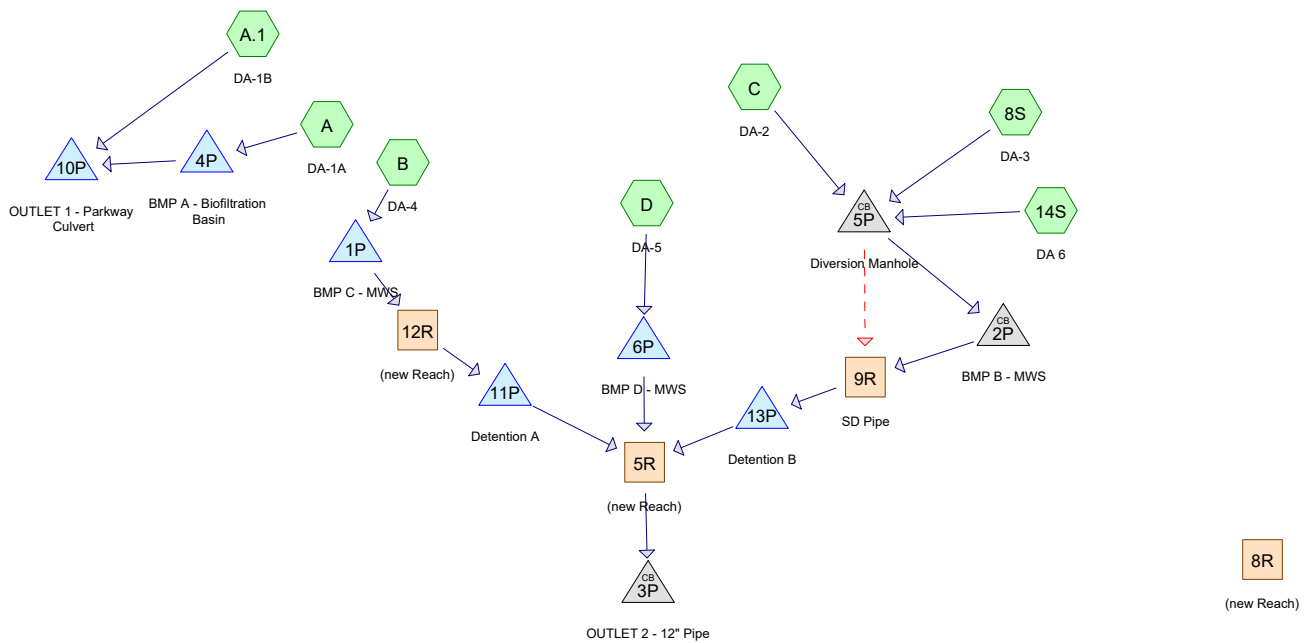


DATE: 07/01/2024
C3 JOB NO: 22-011
DRAWN BY: TH
CHECKED BY: TH

SHEET TITLE
PROPOSED DRAINAGE MAP

SHEET NUMBER
14 of 15

PROPOSED IMPROVEMENT CALCULATIONS



Routing Diagram for 22011-Drainage Calcs (PR)-5
 Prepared by C3 Civil Engineering, LLC, Printed 12/12/2023
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22011-Drainage Calcs (PR)-5

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Area Listing (all nodes)

Area (sq-ft)	C	Description (subcatchment-numbers)
5,061	0.95	STREET (A.1)
6,427	0.95	building, patio, sidewalk (A)
101,872	0.95	impervious (8S, 14S, B, C, D)
2,173	0.25	landscaping (A)
21,984	0.25	pervious (8S, 14S, B, C, D)
137,517	0.83	TOTAL AREA

22011-Drainage Calcs (PR)-5

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	5R	96.62	96.50	12.4	0.0097	0.009	12.0	0.0	0.0
2	8R	100.33	98.14	88.0	0.0249	0.010	12.0	0.0	0.0
3	9R	98.16	97.85	60.6	0.0051	0.009	24.0	0.0	0.0
4	12R	99.60	98.02	75.0	0.0211	0.010	12.0	0.0	0.0
5	2P	98.30	98.20	21.2	0.0047	0.009	4.0	0.0	0.0
6	3P	96.50	90.40	364.8	0.0167	0.013	12.0	0.0	0.0
7	4P	105.79	105.55	11.2	0.0214	0.009	24.0	4.0	0.0
8	5P	98.72	98.55	17.7	0.0096	0.009	4.0	0.0	0.0
9	11P	96.76	96.60	16.4	0.0098	0.010	6.0	0.0	0.0
10	13P	96.79	96.68	21.2	0.0052	0.010	8.0	0.0	0.0

Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment8S: DA-3	Runoff Area=12,295 sf 69.54% Impervious Runoff Depth=0.32" Flow Length=230' Slope=0.0240 '/' Tc=5.0 min C=0.74 Runoff=0.92 cfs 330 cf
Subcatchment14S: DA 6	Runoff Area=11,472 sf 80.52% Impervious Runoff Depth=0.35" Tc=5.0 min C=0.81 Runoff=0.94 cfs 337 cf
SubcatchmentA: DA-1A	Runoff Area=8,600 sf 74.73% Impervious Runoff Depth=0.33" Tc=5.0 min C=0.77 Runoff=0.67 cfs 240 cf
SubcatchmentA.1: DA-1B	Runoff Area=5,061 sf 100.00% Impervious Runoff Depth=0.41" Tc=5.0 min C=0.95 Runoff=0.49 cfs 174 cf
SubcatchmentB: DA-4	Runoff Area=37,536 sf 85.17% Impervious Runoff Depth=0.37" Flow Length=295' Slope=0.0110 '/' Tc=5.4 min C=0.85 Runoff=3.26 cfs 1,156 cf
SubcatchmentC: DA-2	Runoff Area=37,228 sf 88.96% Impervious Runoff Depth=0.38" Tc=5.0 min C=0.87 Runoff=3.28 cfs 1,174 cf
SubcatchmentD: DA-5	Runoff Area=25,325 sf 75.01% Impervious Runoff Depth=0.34" Flow Length=255' Slope=0.0280 '/' Tc=5.0 min C=0.78 Runoff=2.00 cfs 716 cf
Reach 5R: (new Reach)	Avg. Flow Depth=0.62' Max Vel=7.00 fps Inflow=3.64 cfs 3,561 cf 12.0" Round Pipe n=0.009 L=12.4' S=0.0097 '/' Capacity=5.06 cfs Outflow=3.60 cfs 3,562 cf
Reach 8R: (new Reach)	Avg. Flow Depth=0.00' Max Vel=0.00 fps 12.0" Round Pipe n=0.010 L=88.0' S=0.0249 '/' Capacity=7.31 cfs Outflow=0.00 cfs 0 cf
Reach 9R: SD Pipe	Avg. Flow Depth=0.64' Max Vel=5.96 fps Inflow=5.19 cfs 1,840 cf 24.0" Round Pipe n=0.009 L=60.6' S=0.0051 '/' Capacity=23.37 cfs Outflow=5.13 cfs 1,840 cf
Reach 12R: (new Reach)	Avg. Flow Depth=0.49' Max Vel=8.48 fps Inflow=3.26 cfs 1,156 cf 12.0" Round Pipe n=0.010 L=75.0' S=0.0211 '/' Capacity=6.72 cfs Outflow=3.22 cfs 1,156 cf
Pond 1P: BMP C - MWS	Inflow=3.26 cfs 1,156 cf Primary=3.26 cfs 1,156 cf
Pond 2P: BMP B - MWS	Peak Elev=99.95' Inflow=0.52 cfs 242 cf 4.0" Round Culvert n=0.009 L=21.2' S=0.0047 '/' Outflow=0.52 cfs 242 cf
Pond 3P: OUTLET 2 - 12" Pipe	Peak Elev=97.58' Inflow=3.60 cfs 3,562 cf 12.0" Round Culvert n=0.013 L=364.8' S=0.0167 '/' Outflow=3.60 cfs 3,562 cf
Pond 4P: BMP A - Biofiltration Basin	Peak Elev=106.04' Storage=38 cf Inflow=0.67 cfs 240 cf 24.0" x 4.0" Box Culvert n=0.009 L=11.2' S=0.0214 '/' Outflow=0.65 cfs 240 cf
Pond 5P: Diversion Manhole	Peak Elev=100.18' Inflow=5.14 cfs 1,840 cf Primary=0.52 cfs 242 cf Secondary=4.67 cfs 1,598 cf Outflow=5.19 cfs 1,840 cf

Pond 6P: BMP D - MWS

Inflow=2.00 cfs 716 cf
Primary=2.00 cfs 716 cf

Pond 10P: OUTLET 1 - Parkway Culvert

Inflow=1.13 cfs 414 cf
Primary=1.13 cfs 414 cf

Pond 11P: Detention A

Peak Elev=97.78' Storage=886 cf Inflow=3.22 cfs 1,156 cf
6.0" Round Culvert n=0.010 L=16.4' S=0.0098 '/ Outflow=0.83 cfs 1,017 cf

Pond 13P: Detention B

Peak Elev=98.08' Storage=1,290 cf Inflow=5.13 cfs 1,840 cf
8.0" Round Culvert n=0.010 L=21.2' S=0.0052 '/ Outflow=1.63 cfs 1,828 cf

Total Runoff Area = 137,517 sf Runoff Volume = 4,127 cf Average Runoff Depth = 0.36"
17.57% Pervious = 24,157 sf 82.43% Impervious = 113,360 sf

Summary for Subcatchment 8S: DA-3

Runoff = 0.92 cfs @ 0.09 hrs, Volume= 330 cf, Depth= 0.32"

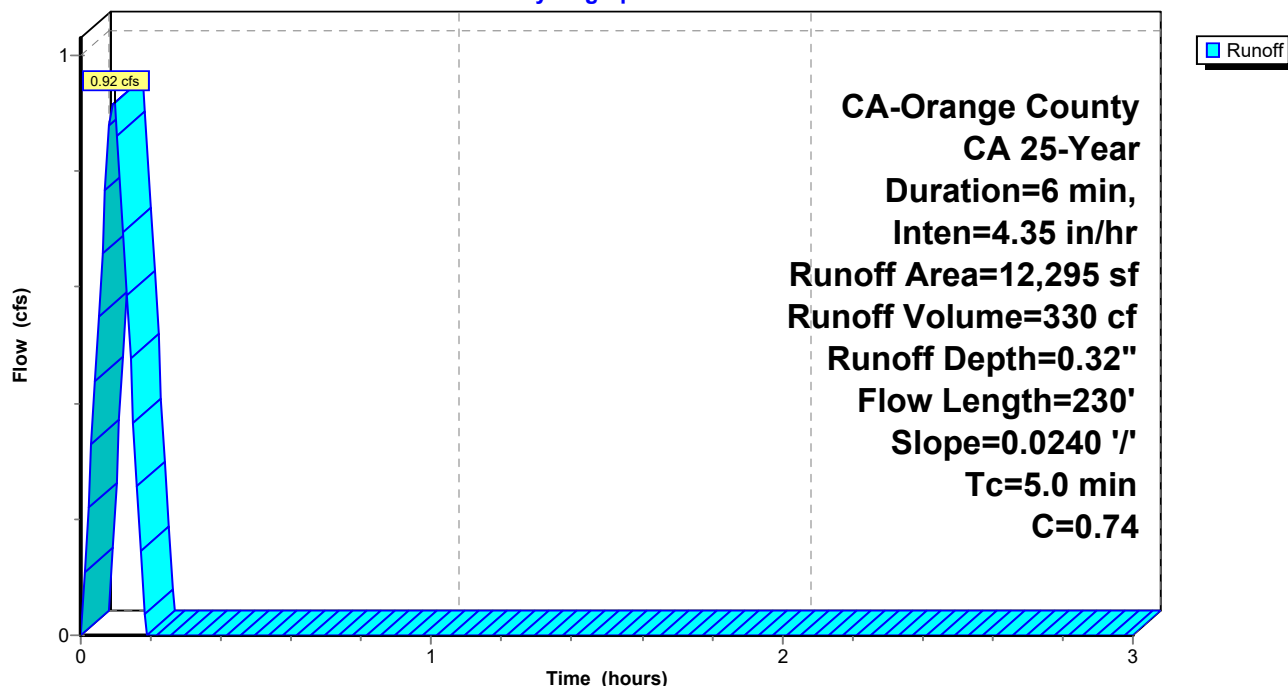
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 25-Year Duration=6 min, Inten=4.35 in/hr

Area (sf)	C	Description
8,550	0.95	impervious
3,745	0.25	pervious
12,295	0.74	Weighted Average
3,745		30.46% Pervious Area
8,550		69.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	230	0.0240	1.17		Sheet Flow, n= 0.015 P2= 2.37"
3.3	230	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: DA-3

Hydrograph



Hydrograph for Subcatchment 8S: DA-3

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.22	1.04	0.00	2.06	0.00
0.04	0.44	1.06	0.00	2.08	0.00
0.06	0.66	1.08	0.00	2.10	0.00
0.08	0.88	1.10	0.00	2.12	0.00
0.10	0.92	1.12	0.00	2.14	0.00
0.12	0.70	1.14	0.00	2.16	0.00
0.14	0.48	1.16	0.00	2.18	0.00
0.16	0.26	1.18	0.00	2.20	0.00
0.18	0.04	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment 14S: DA 6

Runoff = 0.94 cfs @ 0.09 hrs, Volume= 337 cf, Depth= 0.35"

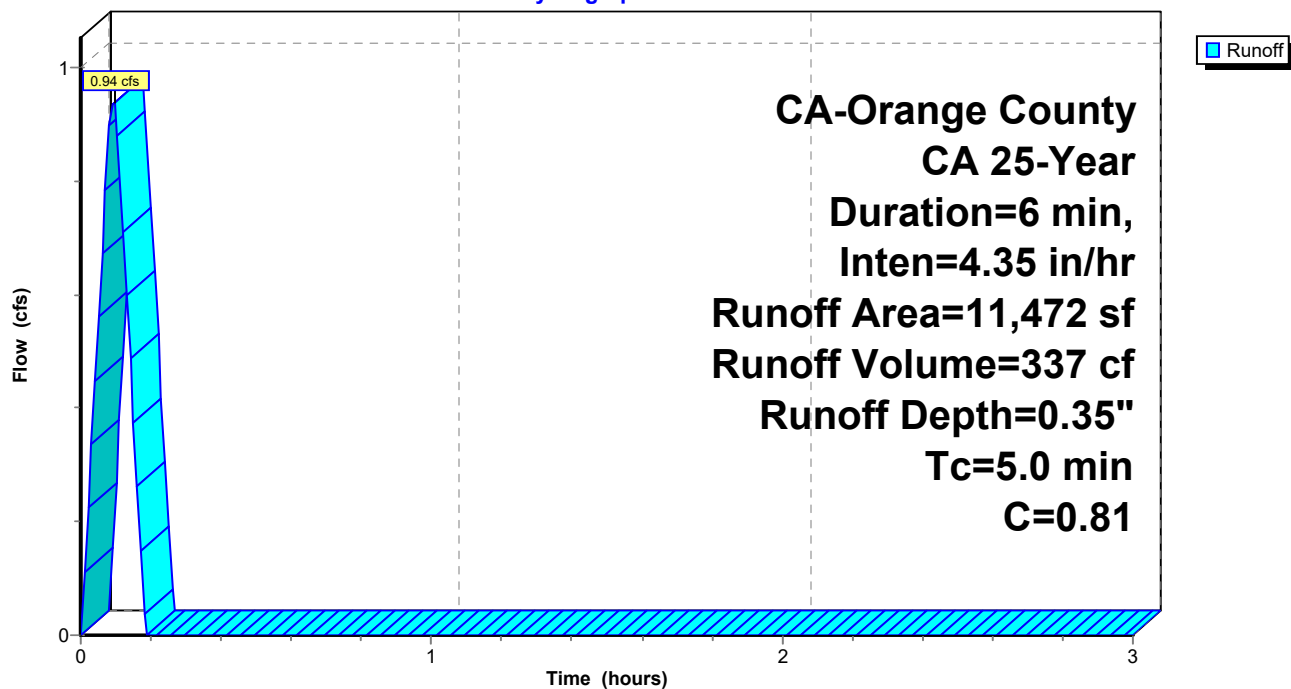
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 25-Year Duration=6 min, Inten=4.35 in/hr

Area (sf)	C	Description
9,237	0.95	impervious
2,235	0.25	pervious
11,472	0.81	Weighted Average
2,235		19.48% Pervious Area
9,237		80.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 14S: DA 6

Hydrograph



Hydrograph for Subcatchment 14S: DA 6

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.22	1.04	0.00	2.06	0.00
0.04	0.45	1.06	0.00	2.08	0.00
0.06	0.67	1.08	0.00	2.10	0.00
0.08	0.90	1.10	0.00	2.12	0.00
0.10	0.94	1.12	0.00	2.14	0.00
0.12	0.71	1.14	0.00	2.16	0.00
0.14	0.49	1.16	0.00	2.18	0.00
0.16	0.26	1.18	0.00	2.20	0.00
0.18	0.04	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment A: DA-1A

Runoff = 0.67 cfs @ 0.09 hrs, Volume= 240 cf, Depth= 0.33"

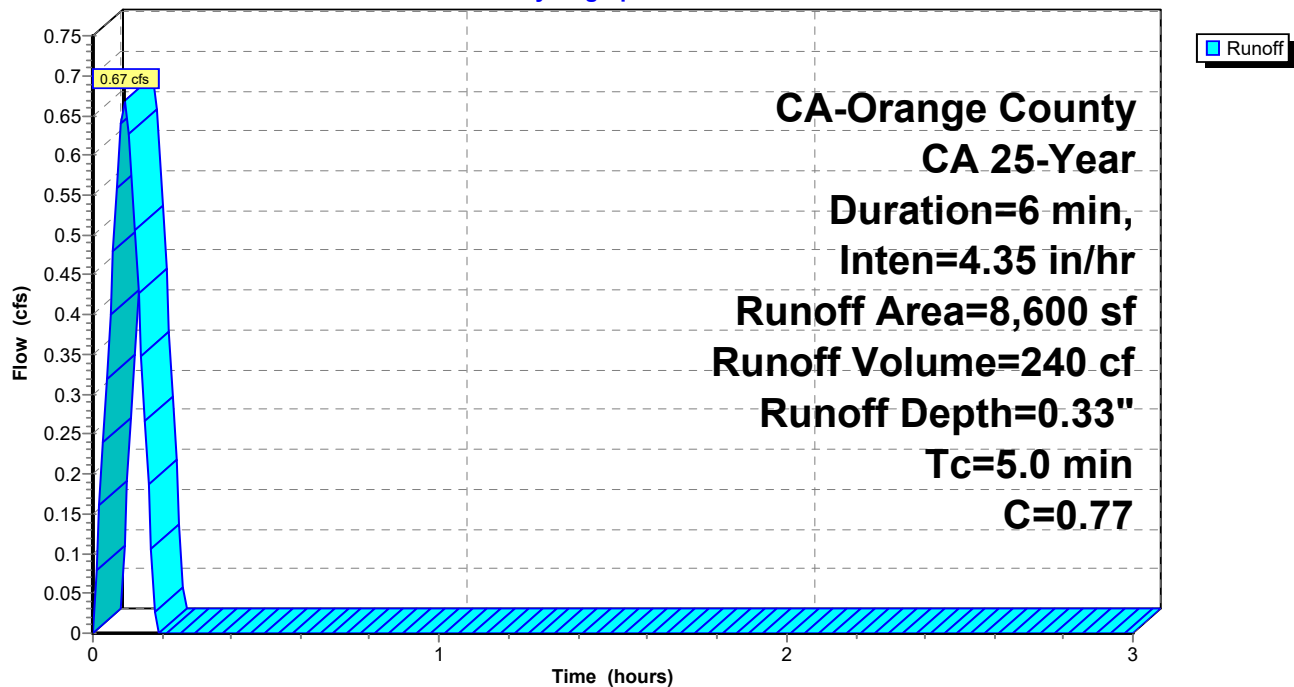
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
CA-Orange County, CA 25-Year Duration=6 min, Inten=4.35 in/hr

Area (sf)	C	Description
6,427	0.95	building, patio, sidewalk
2,173	0.25	landscaping
8,600	0.77	Weighted Average
2,173		25.27% Pervious Area
6,427		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment A: DA-1A

Hydrograph



Hydrograph for Subcatchment A: DA-1A

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.16	1.04	0.00	2.06	0.00
0.04	0.32	1.06	0.00	2.08	0.00
0.06	0.48	1.08	0.00	2.10	0.00
0.08	0.64	1.10	0.00	2.12	0.00
0.10	0.67	1.12	0.00	2.14	0.00
0.12	0.51	1.14	0.00	2.16	0.00
0.14	0.35	1.16	0.00	2.18	0.00
0.16	0.19	1.18	0.00	2.20	0.00
0.18	0.03	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment A.1: DA-1B

Runoff = 0.49 cfs @ 0.09 hrs, Volume= 174 cf, Depth= 0.41"

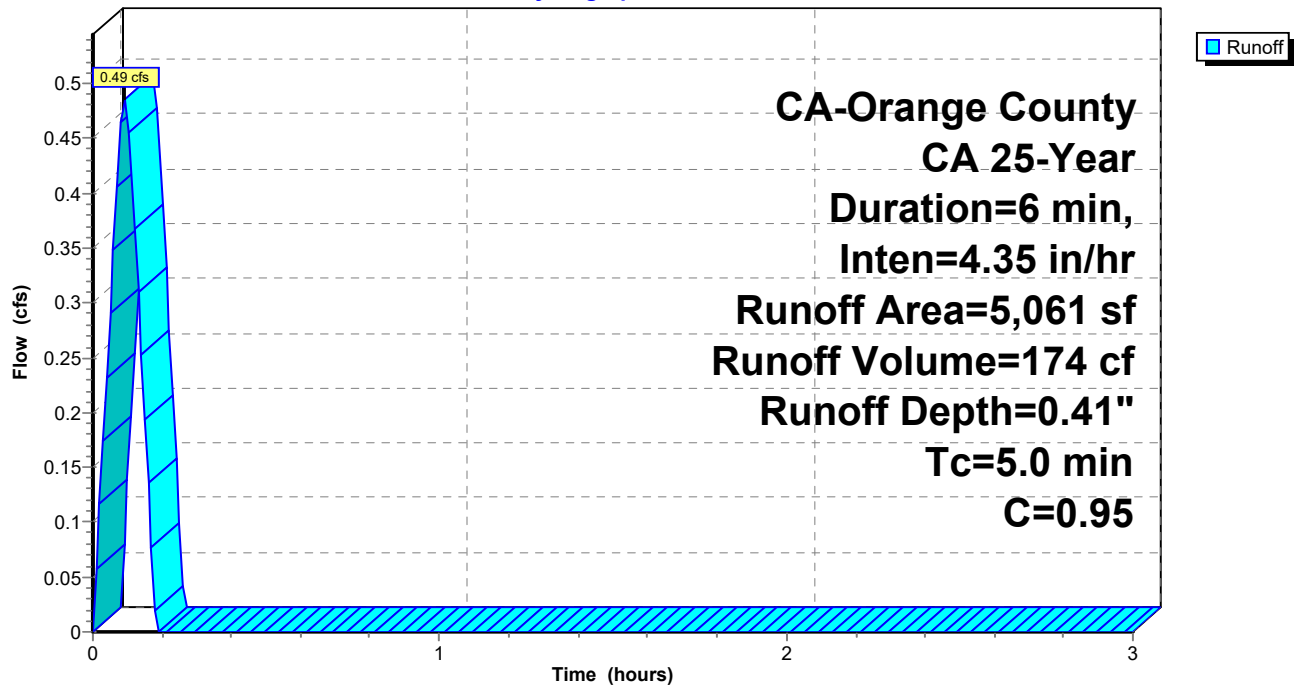
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 25-Year Duration=6 min, Inten=4.35 in/hr

Area (sf)	C	Description
5,061	0.95	STREET
5,061		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment A.1: DA-1B

Hydrograph



Hydrograph for Subcatchment A.1: DA-1B

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.12	1.04	0.00	2.06	0.00
0.04	0.23	1.06	0.00	2.08	0.00
0.06	0.35	1.08	0.00	2.10	0.00
0.08	0.46	1.10	0.00	2.12	0.00
0.10	0.48	1.12	0.00	2.14	0.00
0.12	0.37	1.14	0.00	2.16	0.00
0.14	0.25	1.16	0.00	2.18	0.00
0.16	0.14	1.18	0.00	2.20	0.00
0.18	0.02	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment B: DA-4

Runoff = 3.26 cfs @ 0.09 hrs, Volume= 1,156 cf, Depth= 0.37"

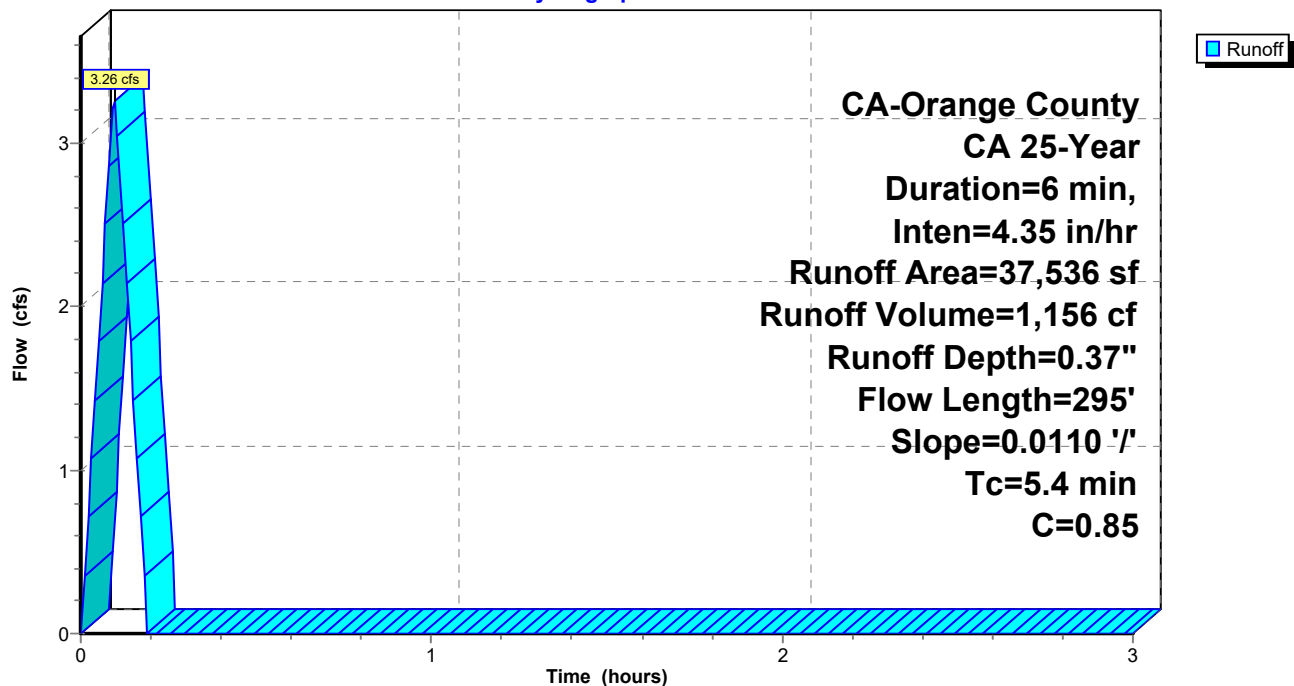
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
CA-Orange County, CA 25-Year Duration=6 min, Inten=4.35 in/hr

Area (sf)	C	Description
31,969	0.95	impervious
5,567	0.25	pervious
37,536	0.85	Weighted Average
5,567		14.83% Pervious Area
31,969		85.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	295	0.0110	0.90		Sheet Flow, DA-4
				n= 0.015	P2= 2.37"

Subcatchment B: DA-4

Hydrograph



Hydrograph for Subcatchment B: DA-4

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.71	1.04	0.00	2.06	0.00
0.04	1.43	1.06	0.00	2.08	0.00
0.06	2.14	1.08	0.00	2.10	0.00
0.08	2.86	1.10	0.00	2.12	0.00
0.10	3.21	1.12	0.00	2.14	0.00
0.12	2.50	1.14	0.00	2.16	0.00
0.14	1.78	1.16	0.00	2.18	0.00
0.16	1.07	1.18	0.00	2.20	0.00
0.18	0.36	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment C: DA-2

Runoff = 3.28 cfs @ 0.09 hrs, Volume= 1,174 cf, Depth= 0.38"

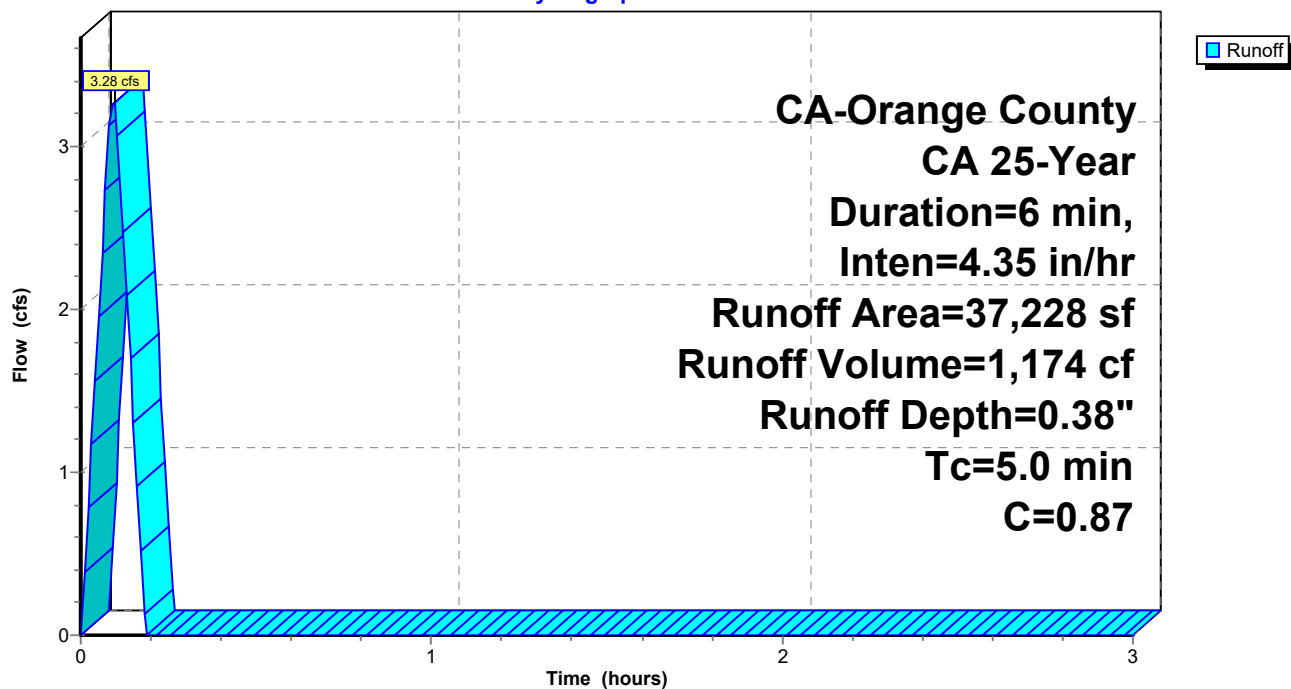
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 25-Year Duration=6 min, Inten=4.35 in/hr

Area (sf)	C	Description
33,119	0.95	impervious
4,109	0.25	pervious
37,228	0.87	Weighted Average
4,109		11.04% Pervious Area
33,119		88.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment C: DA-2

Hydrograph



Hydrograph for Subcatchment C: DA-2

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.78	1.04	0.00	2.06	0.00
0.04	1.57	1.06	0.00	2.08	0.00
0.06	2.35	1.08	0.00	2.10	0.00
0.08	3.13	1.10	0.00	2.12	0.00
0.10	3.26	1.12	0.00	2.14	0.00
0.12	2.48	1.14	0.00	2.16	0.00
0.14	1.70	1.16	0.00	2.18	0.00
0.16	0.91	1.18	0.00	2.20	0.00
0.18	0.13	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment D: DA-5

Runoff = 2.00 cfs @ 0.09 hrs, Volume= 716 cf, Depth= 0.34"

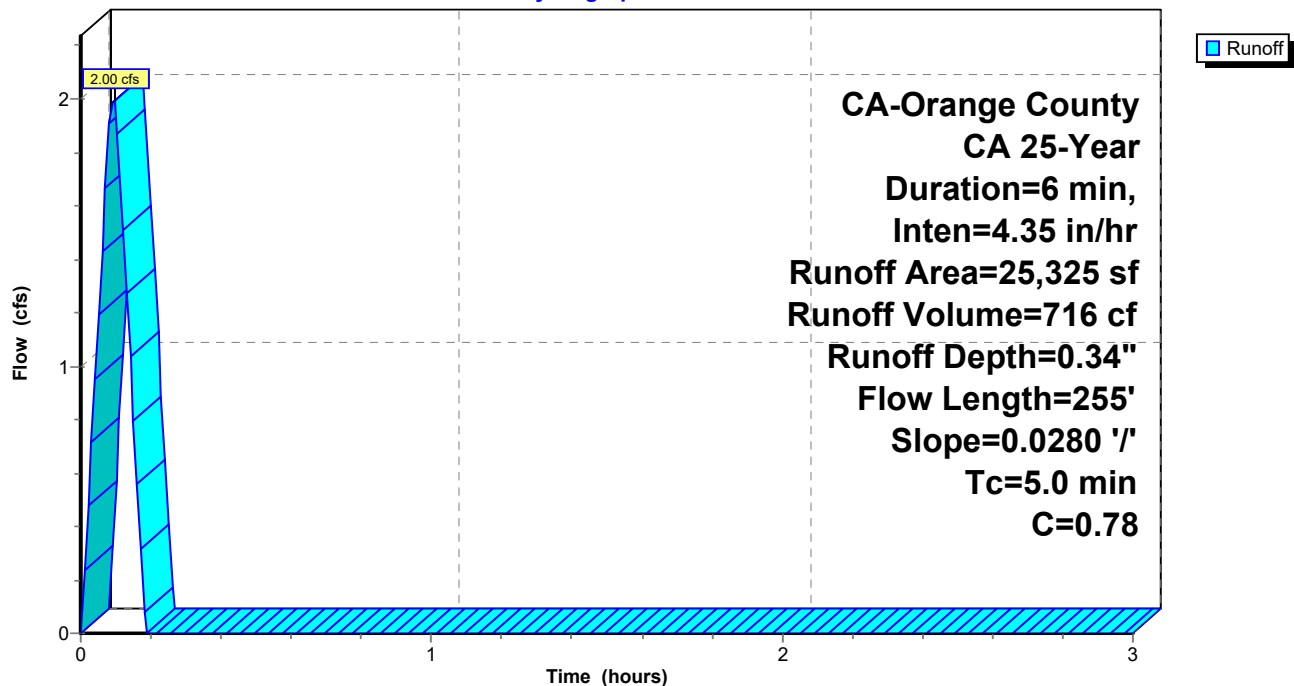
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 25-Year Duration=6 min, Inten=4.35 in/hr

Area (sf)	C	Description
18,997	0.95	impervious
6,328	0.25	pervious
25,325	0.78	Weighted Average
6,328		24.99% Pervious Area
18,997		75.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	255	0.0280	1.27		Sheet Flow, DA-2 n= 0.015 P2= 2.37"
3.3	255	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D: DA-5

Hydrograph



Hydrograph for Subcatchment D: DA-5

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.48	1.04	0.00	2.06	0.00
0.04	0.95	1.06	0.00	2.08	0.00
0.06	1.43	1.08	0.00	2.10	0.00
0.08	1.91	1.10	0.00	2.12	0.00
0.10	1.99	1.12	0.00	2.14	0.00
0.12	1.51	1.14	0.00	2.16	0.00
0.14	1.03	1.16	0.00	2.18	0.00
0.16	0.56	1.18	0.00	2.20	0.00
0.18	0.08	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Reach 5R: (new Reach)

[52] Hint: Inlet/Outlet conditions not evaluated

[81] Warning: Exceeded Pond 11P by 0.30' @ 0.03 hrs

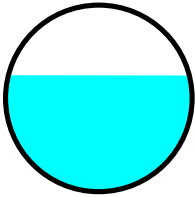
[79] Warning: Submerged Pond 13P Primary device # 1 INLET by 0.45'

Inflow Area = 123,856 sf, 82.25% Impervious, Inflow Depth > 0.35" for 25-Year event
Inflow = 3.64 cfs @ 0.10 hrs, Volume= 3,561 cf
Outflow = 3.60 cfs @ 0.11 hrs, Volume= 3,562 cf, Atten= 1%, Lag= 0.2 min

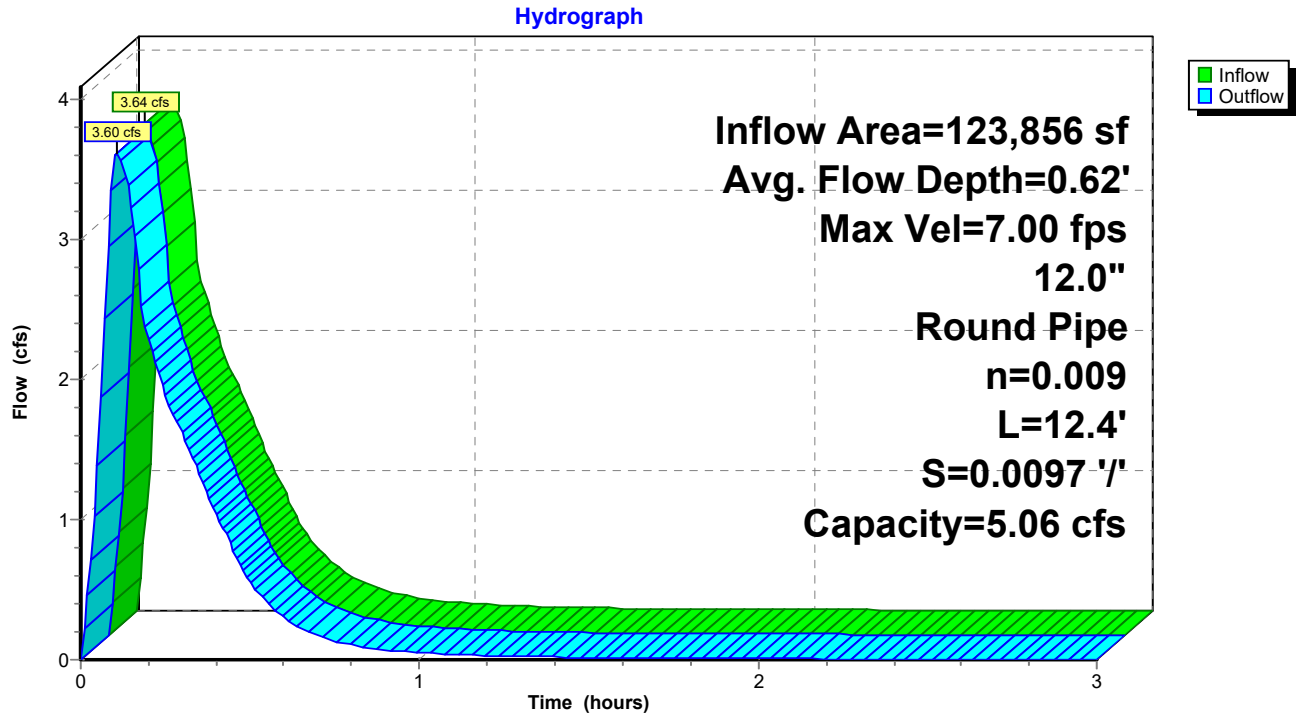
Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs / 2
Max. Velocity= 7.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity= 2.25 fps, Avg. Travel Time= 0.1 min

Peak Storage= 6 cf @ 0.10 hrs
Average Depth at Peak Storage= 0.62'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.06 cfs

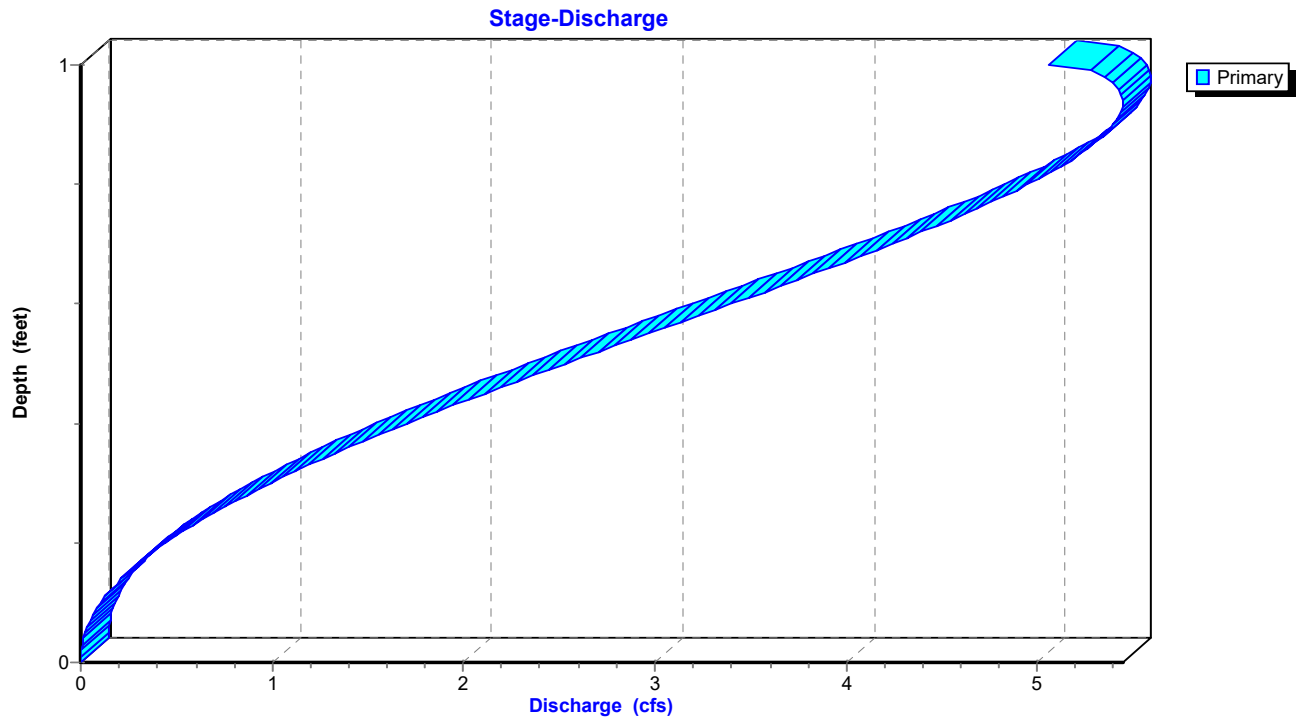
12.0" Round Pipe
n= 0.009
Length= 12.4' Slope= 0.0097 '
Inlet Invert= 96.62', Outlet Invert= 96.50'



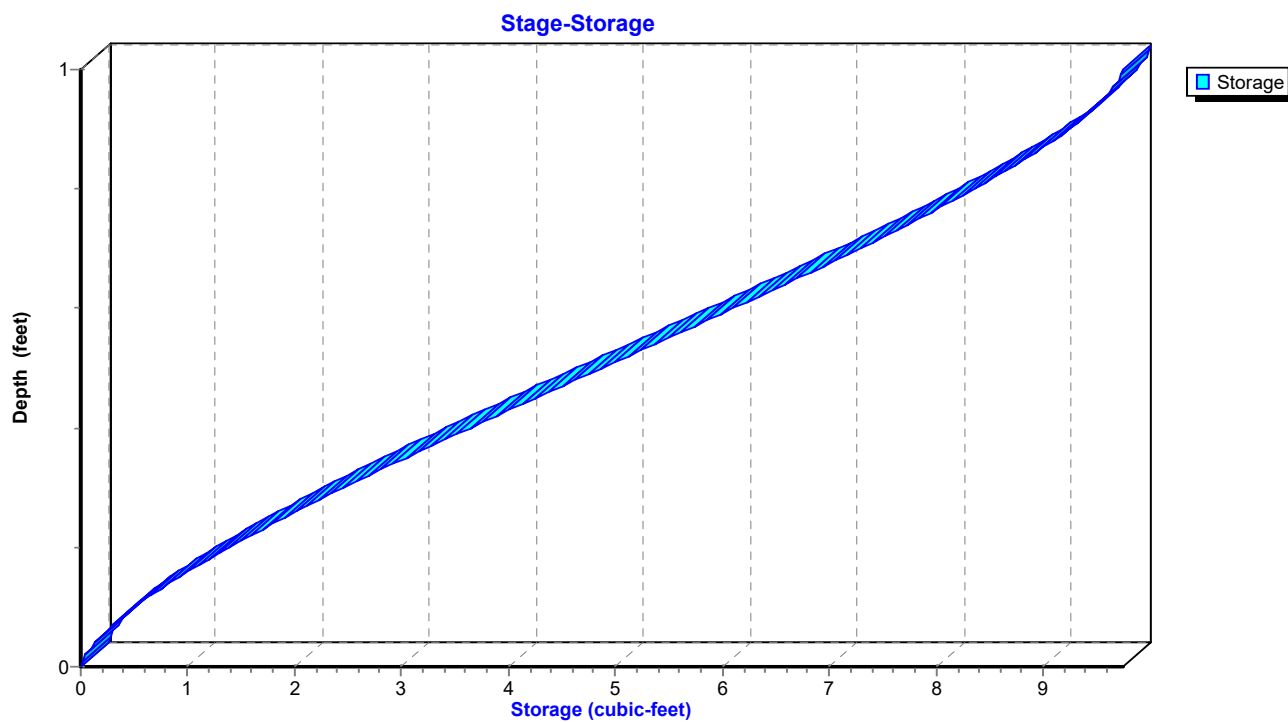
Reach 5R: (new Reach)



Reach 5R: (new Reach)



Reach 5R: (new Reach)



Hydrograph for Reach 5R: (new Reach)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	96.62	0.00
0.10	3.62	6	97.24	3.59
0.20	2.27	5	97.09	2.28
0.30	1.61	3	97.01	1.62
0.40	1.03	3	96.93	1.04
0.50	0.55	2	96.84	0.55
0.60	0.31	1	96.79	0.31
0.70	0.17	1	96.75	0.17
0.80	0.10	1	96.72	0.10
0.90	0.07	0	96.70	0.07
1.00	0.05	0	96.69	0.05
1.10	0.04	0	96.68	0.04
1.20	0.03	0	96.67	0.03
1.30	0.02	0	96.67	0.02
1.40	0.02	0	96.66	0.02
1.50	0.02	0	96.66	0.02
1.60	0.01	0	96.66	0.01
1.70	0.01	0	96.65	0.01
1.80	0.01	0	96.65	0.01
1.90	0.01	0	96.65	0.01
2.00	0.01	0	96.65	0.01
2.10	0.01	0	96.65	0.01
2.20	0.01	0	96.65	0.01
2.30	0.01	0	96.64	0.01
2.40	0.00	0	96.64	0.00
2.50	0.00	0	96.64	0.00
2.60	0.00	0	96.64	0.00
2.70	0.00	0	96.64	0.00
2.80	0.00	0	96.64	0.00
2.90	0.00	0	96.64	0.00
3.00	0.00	0	96.64	0.00

Stage-Discharge for Reach 5R: (new Reach)

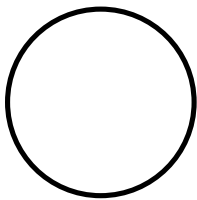
Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
96.62	0.00	0.00	97.13	6.50	2.62
96.63	0.57	0.00	97.14	6.55	2.70
96.64	0.91	0.00	97.15	6.60	2.79
96.65	1.19	0.01	97.16	6.65	2.88
96.66	1.43	0.02	97.17	6.70	2.97
96.67	1.66	0.02	97.18	6.75	3.05
96.68	1.86	0.04	97.19	6.79	3.14
96.69	2.06	0.05	97.20	6.83	3.23
96.70	2.24	0.07	97.21	6.87	3.31
96.71	2.42	0.08	97.22	6.91	3.40
96.72	2.59	0.11	97.23	6.95	3.49
96.73	2.75	0.13	97.24	6.99	3.57
96.74	2.90	0.15	97.25	7.02	3.66
96.75	3.05	0.18	97.26	7.05	3.74
96.76	3.19	0.21	97.27	7.09	3.83
96.77	3.33	0.25	97.28	7.12	3.91
96.78	3.47	0.28	97.29	7.14	4.00
96.79	3.60	0.32	97.30	7.17	4.08
96.80	3.72	0.36	97.31	7.19	4.16
96.81	3.85	0.40	97.32	7.22	4.24
96.82	3.96	0.44	97.33	7.24	4.32
96.83	4.08	0.49	97.34	7.26	4.39
96.84	4.19	0.54	97.35	7.28	4.47
96.85	4.30	0.59	97.36	7.29	4.54
96.86	4.41	0.64	97.37	7.31	4.62
96.87	4.52	0.69	97.38	7.32	4.69
96.88	4.62	0.75	97.39	7.33	4.76
96.89	4.72	0.81	97.40	7.34	4.82
96.90	4.82	0.87	97.41	7.34	4.89
96.91	4.91	0.93	97.42	7.35	4.95
96.92	5.00	0.99	97.43	7.35	5.01
96.93	5.09	1.06	97.44	7.35	5.06
96.94	5.18	1.12	97.45	7.35	5.12
96.95	5.27	1.19	97.46	7.34	5.17
96.96	5.35	1.26	97.47	7.33	5.22
96.97	5.43	1.33	97.48	7.32	5.26
96.98	5.51	1.40	97.49	7.31	5.30
96.99	5.59	1.48	97.50	7.29	5.34
97.00	5.67	1.55	97.51	7.27	5.37
97.01	5.74	1.63	97.52	7.25	5.40
97.02	5.82	1.71	97.53	7.22	5.42
97.03	5.89	1.78	97.54	7.19	5.43
97.04	5.96	1.86	97.55	7.15	5.44
97.05	6.02	1.94	97.56	7.11	5.45
97.06	6.09	2.03	97.57	7.06	5.44
97.07	6.15	2.11	97.58	7.00	5.42
97.08	6.21	2.19	97.59	6.93	5.40
97.09	6.27	2.28	97.60	6.84	5.35
97.10	6.33	2.36	97.61	6.73	5.28
97.11	6.39	2.45	97.62	6.45	5.06
97.12	6.45	2.53			

Summary for Reach 8R: (new Reach)

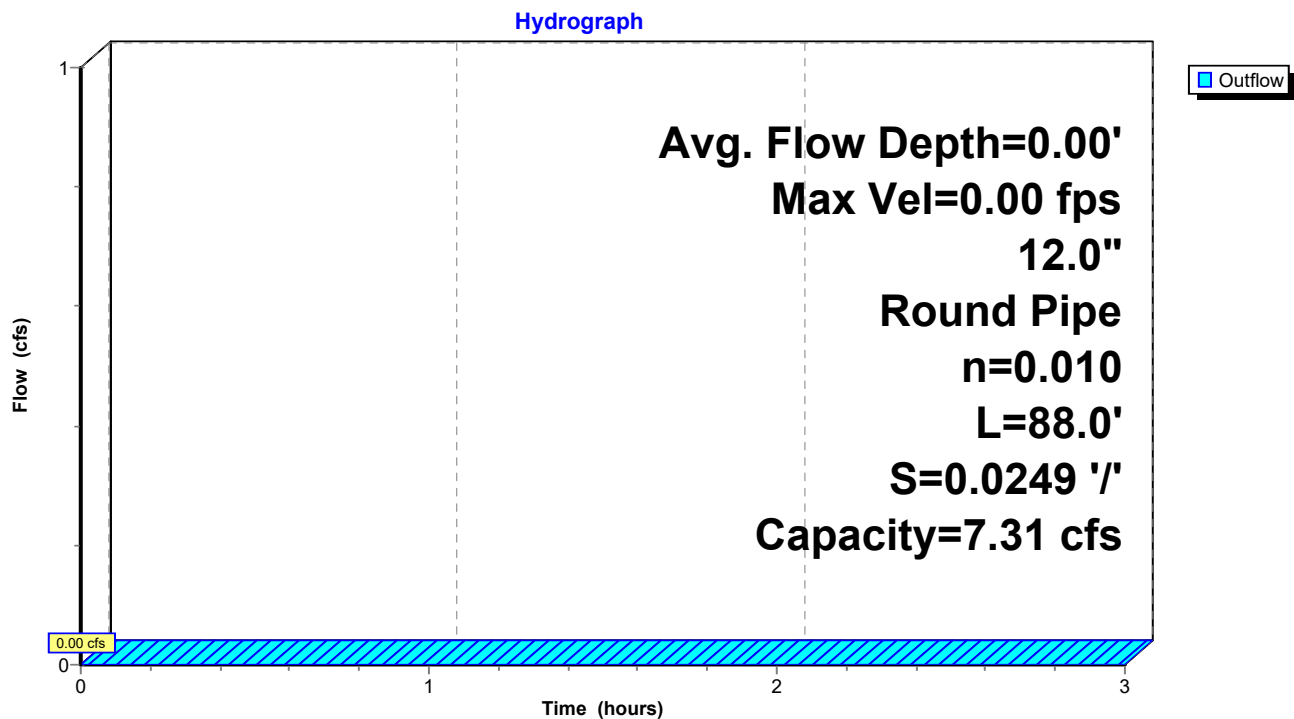
[43] Hint: Has no inflow (Outflow=Zero)

Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 7.31 cfs

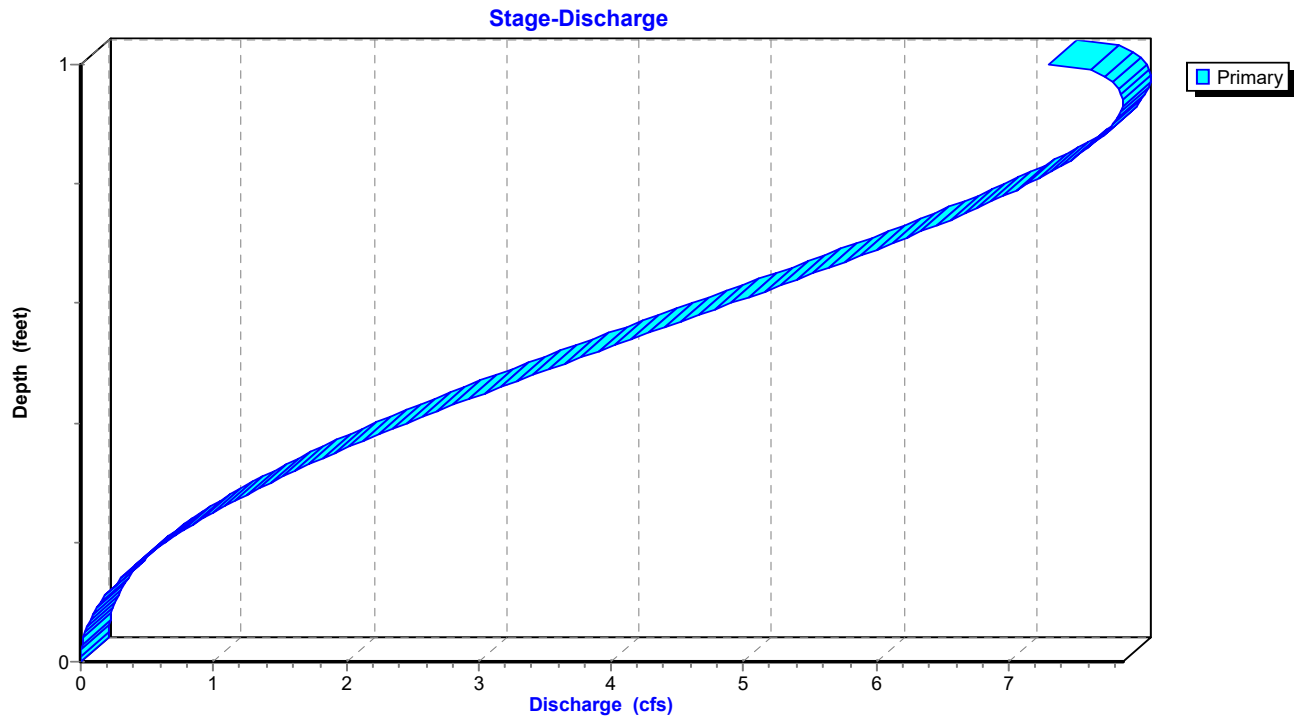
12.0" Round Pipe
 n= 0.010 PVC, smooth interior
 Length= 88.0' Slope= 0.0249 '/'
 Inlet Invert= 100.33', Outlet Invert= 98.14'



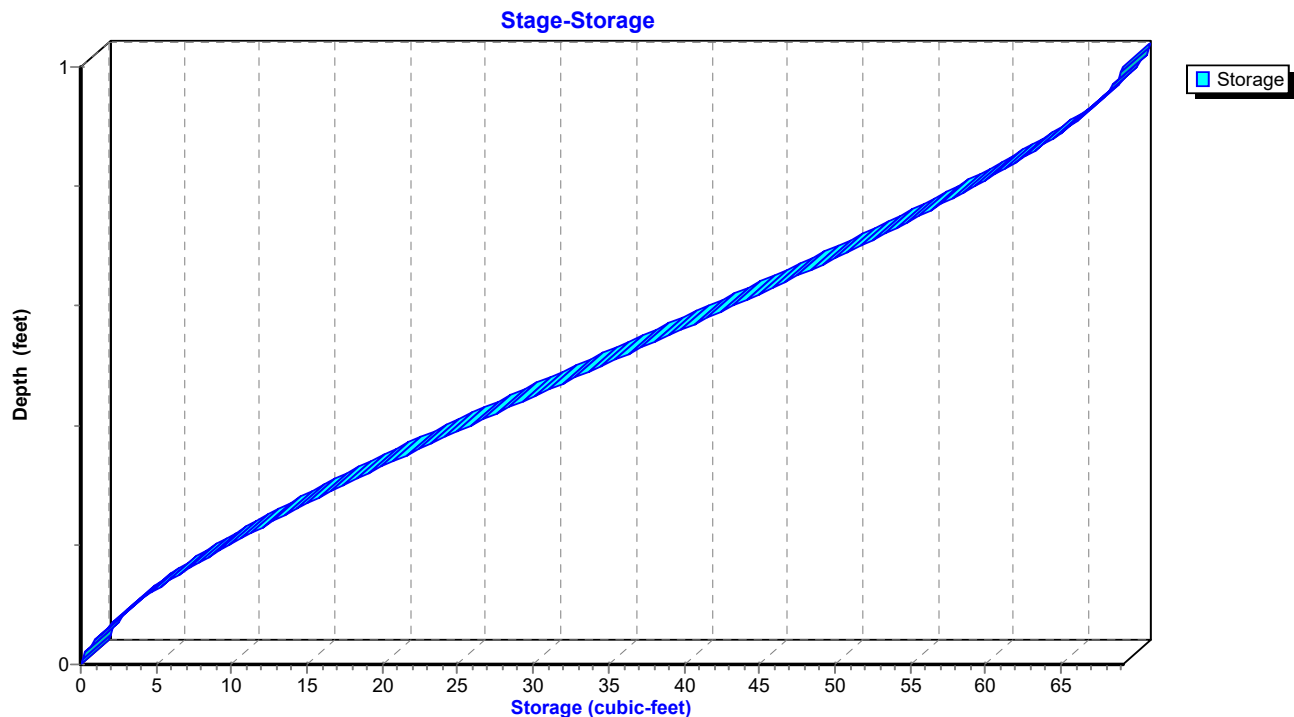
Reach 8R: (new Reach)



Reach 8R: (new Reach)



Reach 8R: (new Reach)



Stage-Discharge for Reach 8R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
100.33	0.00	0.00	100.84	9.38	3.78
100.34	0.83	0.00	100.85	9.46	3.90
100.35	1.31	0.00	100.86	9.53	4.03
100.36	1.71	0.01	100.87	9.60	4.15
100.37	2.07	0.02	100.88	9.67	4.28
100.38	2.39	0.04	100.89	9.74	4.41
100.39	2.69	0.05	100.90	9.80	4.53
100.40	2.97	0.07	100.91	9.86	4.66
100.41	3.24	0.10	100.92	9.92	4.78
100.42	3.49	0.12	100.93	9.98	4.91
100.43	3.73	0.15	100.94	10.03	5.03
100.44	3.96	0.19	100.95	10.08	5.16
100.45	4.19	0.22	100.96	10.13	5.28
100.46	4.40	0.26	100.97	10.18	5.40
100.47	4.61	0.31	100.98	10.23	5.53
100.48	4.81	0.36	100.99	10.27	5.65
100.49	5.00	0.41	101.00	10.31	5.77
100.50	5.19	0.46	101.01	10.35	5.89
100.51	5.37	0.52	101.02	10.38	6.00
100.52	5.55	0.58	101.03	10.42	6.12
100.53	5.72	0.64	101.04	10.45	6.23
100.54	5.89	0.71	101.05	10.48	6.34
100.55	6.05	0.78	101.06	10.50	6.45
100.56	6.21	0.85	101.07	10.52	6.56
100.57	6.37	0.92	101.08	10.54	6.66
100.58	6.52	1.00	101.09	10.56	6.76
100.59	6.67	1.08	101.10	10.58	6.86
100.60	6.81	1.17	101.11	10.59	6.96
100.61	6.95	1.25	101.12	10.60	7.05
100.62	7.09	1.34	101.13	10.60	7.14
100.63	7.22	1.43	101.14	10.61	7.23
100.64	7.35	1.52	101.15	10.60	7.31
100.65	7.48	1.62	101.16	10.60	7.39
100.66	7.60	1.72	101.17	10.59	7.46
100.67	7.72	1.82	101.18	10.58	7.53
100.68	7.84	1.92	101.19	10.57	7.59
100.69	7.96	2.03	101.20	10.55	7.65
100.70	8.07	2.13	101.21	10.52	7.70
100.71	8.18	2.24	101.22	10.49	7.75
100.72	8.29	2.35	101.23	10.46	7.79
100.73	8.39	2.46	101.24	10.42	7.82
100.74	8.50	2.58	101.25	10.37	7.84
100.75	8.59	2.69	101.26	10.32	7.86
100.76	8.69	2.81	101.27	10.26	7.86
100.77	8.79	2.92	101.28	10.19	7.85
100.78	8.88	3.04	101.29	10.10	7.83
100.79	8.97	3.16	101.30	10.00	7.79
100.80	9.06	3.28	101.31	9.88	7.72
100.81	9.14	3.41	101.32	9.71	7.61
100.82	9.22	3.53	101.33	9.30	7.31
100.83	9.30	3.65			

Summary for Reach 9R: SD Pipe

[52] Hint: Inlet/Outlet conditions not evaluated

[79] Warning: Submerged Pond 2P Primary device # 1 INLET by 0.50'

Inflow Area = 60,995 sf, 83.46% Impervious, Inflow Depth = 0.36" for 25-Year event
Inflow = 5.19 cfs @ 0.10 hrs, Volume= 1,840 cf
Outflow = 5.13 cfs @ 0.10 hrs, Volume= 1,840 cf, Atten= 1%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Max. Velocity= 5.96 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 3.05 fps, Avg. Travel Time= 0.3 min

Peak Storage= 52 cf @ 0.10 hrs

Average Depth at Peak Storage= 0.64'

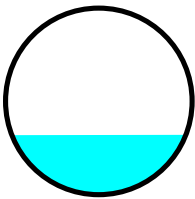
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 23.37 cfs

24.0" Round Pipe

n= 0.009

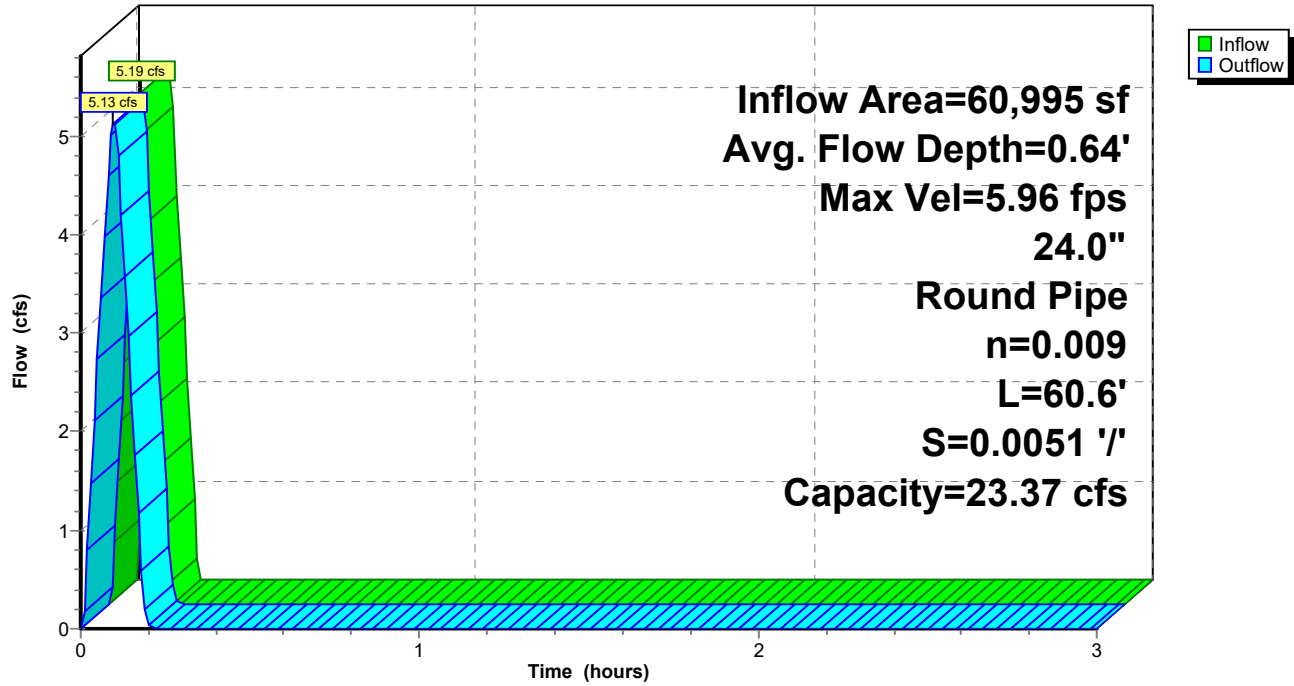
Length= 60.6' Slope= 0.0051 '/'

Inlet Invert= 98.16', Outlet Invert= 97.85'



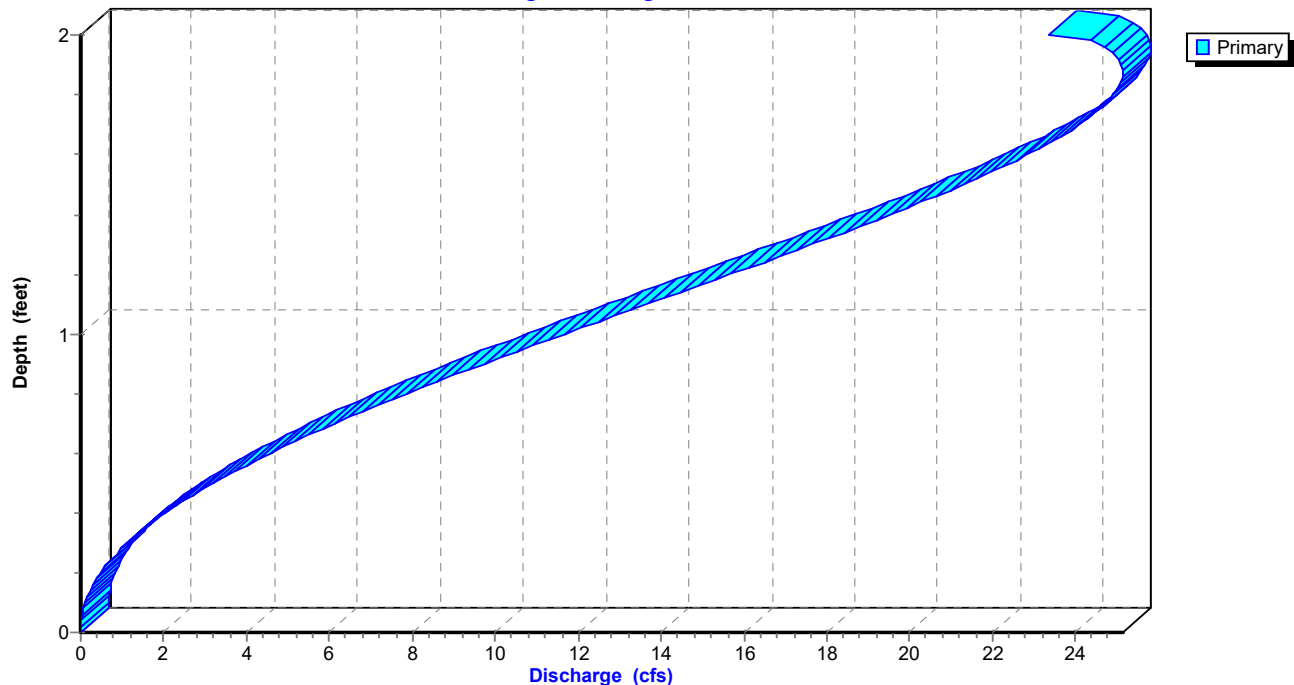
Reach 9R: SD Pipe

Hydrograph

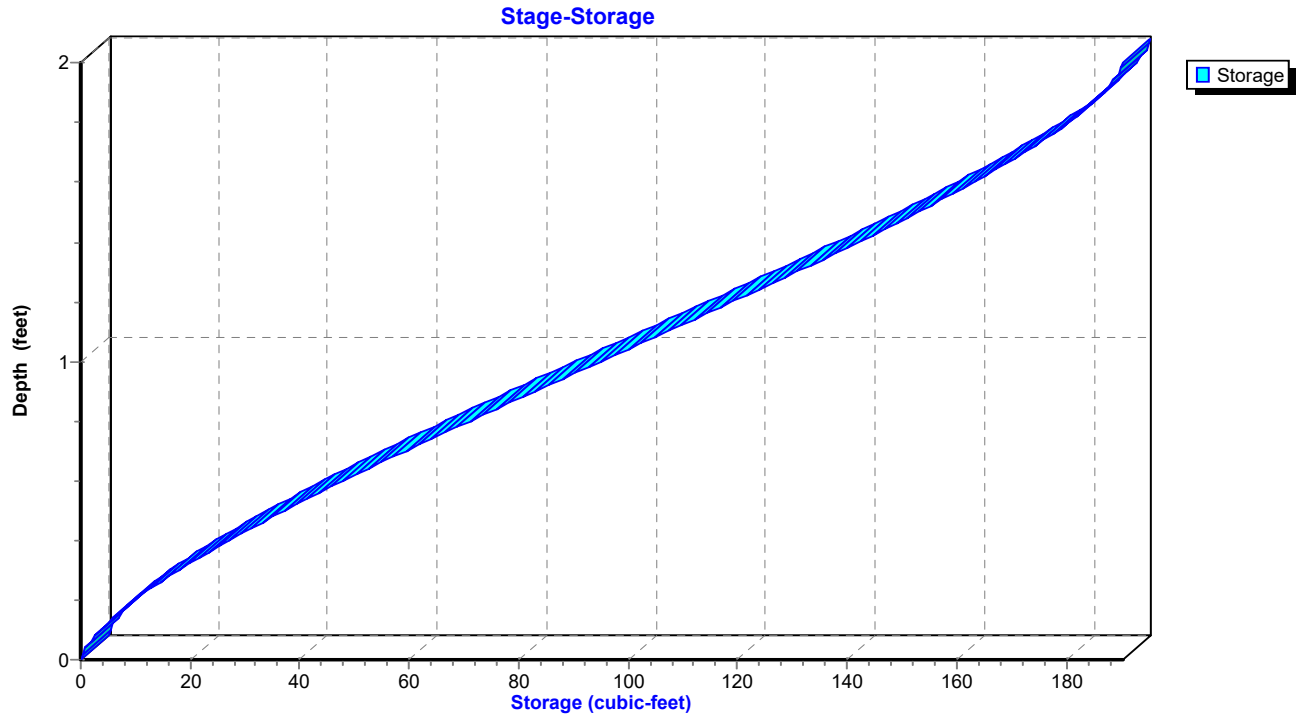


Reach 9R: SD Pipe

Stage-Discharge



Reach 9R: SD Pipe



Hydrograph for Reach 9R: SD Pipe

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	98.16	0.00
0.10	5.11	52	98.80	5.11
0.20	0.00	1	98.20	0.04
0.30	0.00	0	98.16	0.00
0.40	0.00	0	98.16	0.00
0.50	0.00	0	98.16	0.00
0.60	0.00	0	98.16	0.00
0.70	0.00	0	98.16	0.00
0.80	0.00	0	98.16	0.00
0.90	0.00	0	98.16	0.00
1.00	0.00	0	98.16	0.00
1.10	0.00	0	98.16	0.00
1.20	0.00	0	98.16	0.00
1.30	0.00	0	98.16	0.00
1.40	0.00	0	98.16	0.00
1.50	0.00	0	98.16	0.00
1.60	0.00	0	98.16	0.00
1.70	0.00	0	98.16	0.00
1.80	0.00	0	98.16	0.00
1.90	0.00	0	98.16	0.00
2.00	0.00	0	98.16	0.00
2.10	0.00	0	98.16	0.00
2.20	0.00	0	98.16	0.00
2.30	0.00	0	98.16	0.00
2.40	0.00	0	98.16	0.00
2.50	0.00	0	98.16	0.00
2.60	0.00	0	98.16	0.00
2.70	0.00	0	98.16	0.00
2.80	0.00	0	98.16	0.00
2.90	0.00	0	98.16	0.00
3.00	0.00	0	98.16	0.00

Stage-Discharge for Reach 9R: SD Pipe

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
98.16	0.00	0.00	99.18	7.50	12.08
98.18	0.66	0.00	99.20	7.56	12.48
98.20	1.05	0.02	99.22	7.62	12.88
98.22	1.37	0.04	99.24	7.68	13.29
98.24	1.65	0.07	99.26	7.73	13.69
98.26	1.91	0.11	99.28	7.78	14.09
98.28	2.15	0.17	99.30	7.84	14.50
98.30	2.38	0.23	99.32	7.89	14.90
98.32	2.59	0.30	99.34	7.93	15.30
98.34	2.79	0.39	99.36	7.98	15.70
98.36	2.98	0.49	99.38	8.02	16.10
98.38	3.17	0.60	99.40	8.06	16.50
98.40	3.35	0.71	99.42	8.10	16.90
98.42	3.52	0.84	99.44	8.14	17.29
98.44	3.68	0.98	99.46	8.18	17.68
98.46	3.84	1.14	99.48	8.21	18.06
98.48	4.00	1.30	99.50	8.24	18.45
98.50	4.15	1.47	99.52	8.28	18.83
98.52	4.30	1.65	99.54	8.30	19.20
98.54	4.44	1.84	99.56	8.33	19.57
98.56	4.58	2.05	99.58	8.35	19.93
98.58	4.71	2.26	99.60	8.38	20.29
98.60	4.84	2.48	99.62	8.40	20.64
98.62	4.97	2.71	99.64	8.42	20.98
98.64	5.09	2.95	99.66	8.43	21.31
98.66	5.21	3.20	99.68	8.45	21.64
98.68	5.33	3.46	99.70	8.46	21.95
98.70	5.45	3.73	99.72	8.47	22.26
98.72	5.56	4.00	99.74	8.47	22.56
98.74	5.67	4.29	99.76	8.48	22.84
98.76	5.77	4.58	99.78	8.48	23.12
98.78	5.88	4.88	99.80	8.48	23.38
98.80	5.98	5.18	99.82	8.48	23.63
98.82	6.08	5.50	99.84	8.47	23.86
98.84	6.18	5.82	99.86	8.46	24.08
98.86	6.27	6.15	99.88	8.45	24.29
98.88	6.36	6.48	99.90	8.43	24.47
98.90	6.45	6.82	99.92	8.41	24.64
98.92	6.54	7.17	99.94	8.39	24.78
98.94	6.63	7.52	99.96	8.36	24.91
98.96	6.71	7.88	99.98	8.33	25.01
98.98	6.79	8.24	100.00	8.30	25.08
99.00	6.87	8.61	100.02	8.25	25.13
99.02	6.95	8.98	100.04	8.20	25.14
99.04	7.03	9.35	100.06	8.15	25.11
99.06	7.10	9.73	100.08	8.08	25.04
99.08	7.17	10.12	100.10	8.00	24.91
99.10	7.24	10.51	100.12	7.90	24.70
99.12	7.31	10.90	100.14	7.76	24.35
99.14	7.38	11.29	100.16	7.44	23.37
99.16	7.44	11.69			

Summary for Reach 12R: (new Reach)

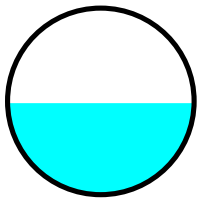
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 37,536 sf, 85.17% Impervious, Inflow Depth = 0.37" for 25-Year event
Inflow = 3.26 cfs @ 0.09 hrs, Volume= 1,156 cf
Outflow = 3.22 cfs @ 0.10 hrs, Volume= 1,156 cf, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.48 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.71 fps, Avg. Travel Time= 0.3 min

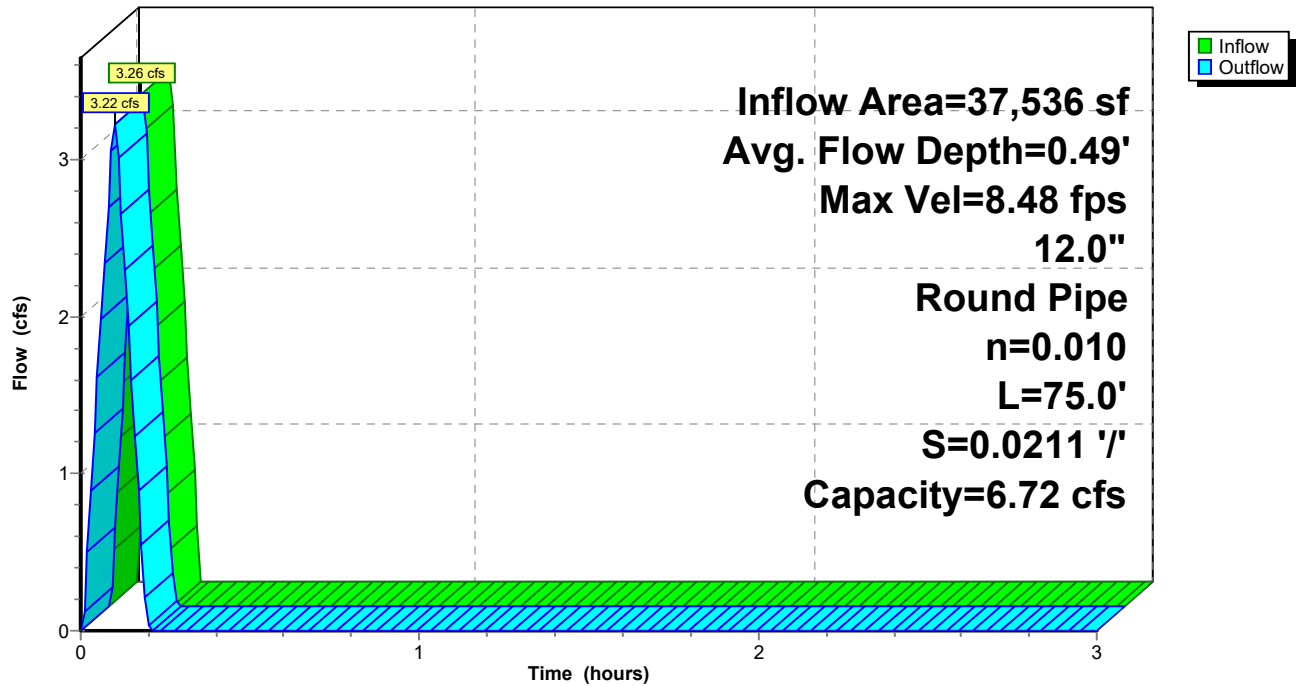
Peak Storage= 29 cf @ 0.10 hrs
Average Depth at Peak Storage= 0.49'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.72 cfs

12.0" Round Pipe
n= 0.010 PVC, smooth interior
Length= 75.0' Slope= 0.0211 '/
Inlet Invert= 99.60', Outlet Invert= 98.02'



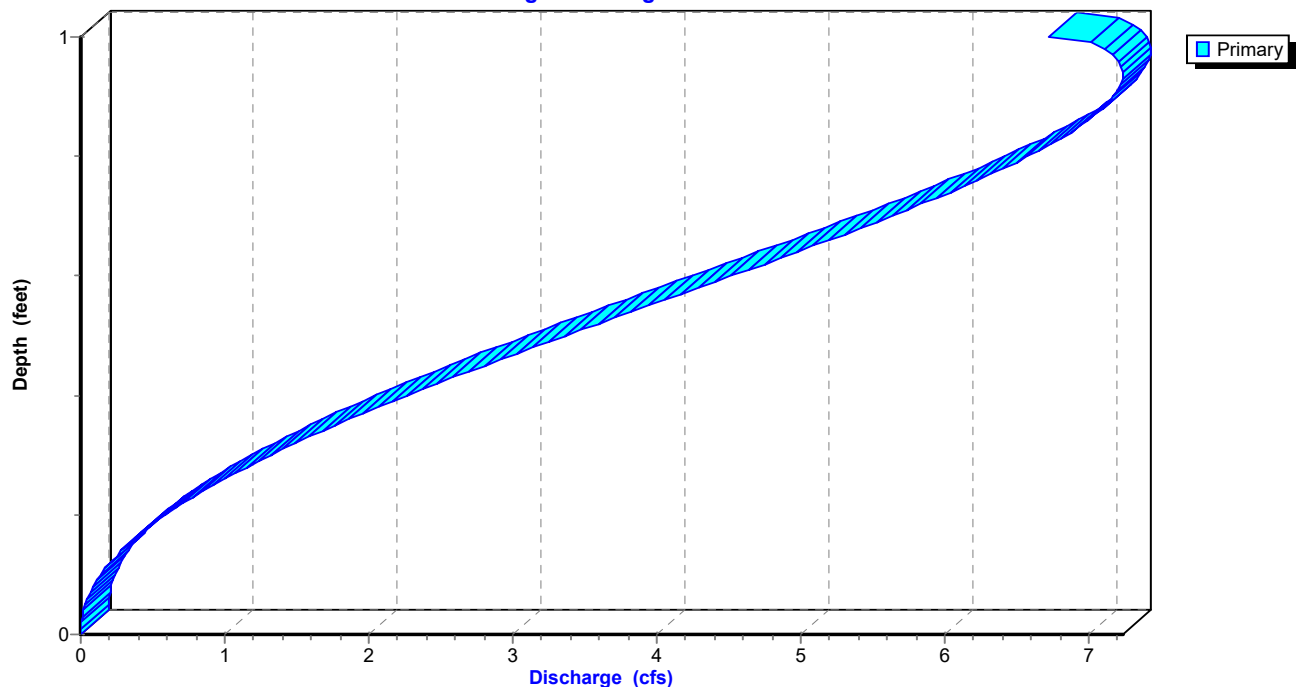
Reach 12R: (new Reach)

Hydrograph

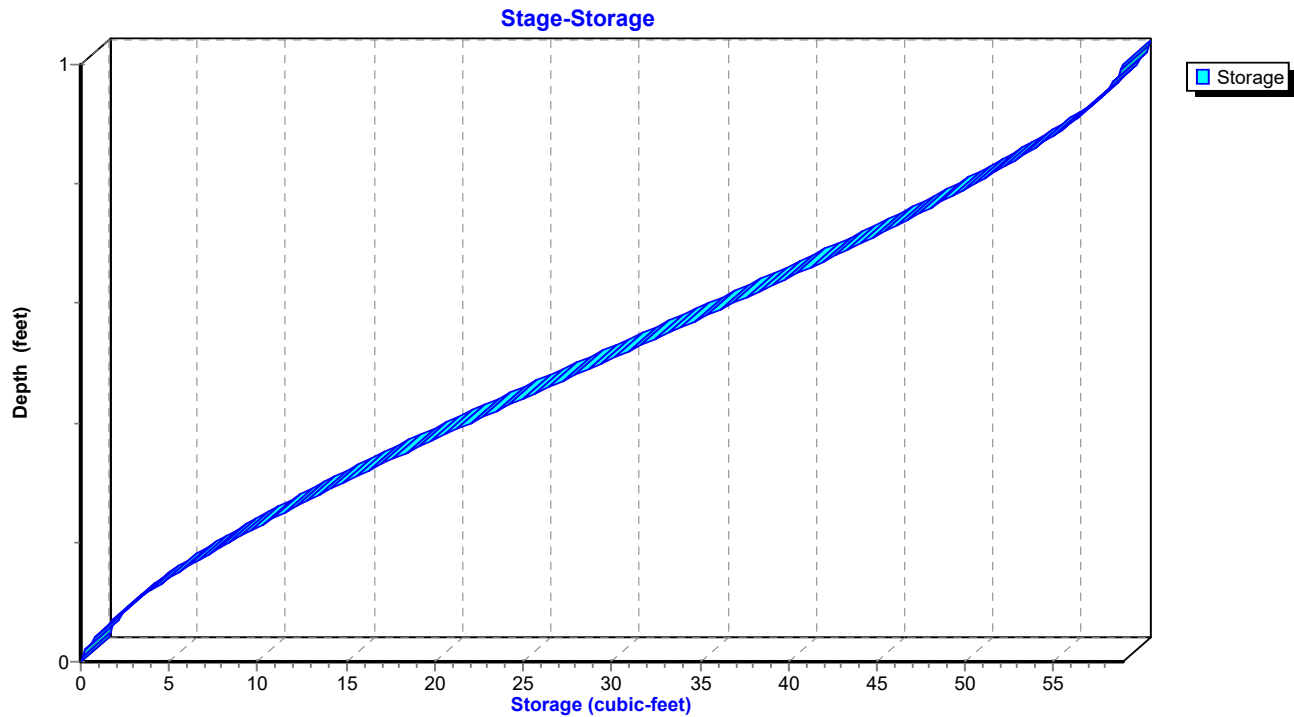


Reach 12R: (new Reach)

Stage-Discharge



Reach 12R: (new Reach)



Hydrograph for Reach 12R: (new Reach)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	99.60	0.00
0.10	3.21	29	100.09	3.22
0.20	0.00	0	99.63	0.04
0.30	0.00	0	99.60	0.00
0.40	0.00	0	99.60	0.00
0.50	0.00	0	99.60	0.00
0.60	0.00	0	99.60	0.00
0.70	0.00	0	99.60	0.00
0.80	0.00	0	99.60	0.00
0.90	0.00	0	99.60	0.00
1.00	0.00	0	99.60	0.00
1.10	0.00	0	99.60	0.00
1.20	0.00	0	99.60	0.00
1.30	0.00	0	99.60	0.00
1.40	0.00	0	99.60	0.00
1.50	0.00	0	99.60	0.00
1.60	0.00	0	99.60	0.00
1.70	0.00	0	99.60	0.00
1.80	0.00	0	99.60	0.00
1.90	0.00	0	99.60	0.00
2.00	0.00	0	99.60	0.00
2.10	0.00	0	99.60	0.00
2.20	0.00	0	99.60	0.00
2.30	0.00	0	99.60	0.00
2.40	0.00	0	99.60	0.00
2.50	0.00	0	99.60	0.00
2.60	0.00	0	99.60	0.00
2.70	0.00	0	99.60	0.00
2.80	0.00	0	99.60	0.00
2.90	0.00	0	99.60	0.00
3.00	0.00	0	99.60	0.00

Stage-Discharge for Reach 12R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
99.60	0.00	0.00	100.11	8.63	3.48
99.61	0.76	0.00	100.12	8.70	3.59
99.62	1.21	0.00	100.13	8.77	3.71
99.63	1.57	0.01	100.14	8.83	3.82
99.64	1.90	0.02	100.15	8.90	3.94
99.65	2.20	0.03	100.16	8.96	4.05
99.66	2.48	0.05	100.17	9.02	4.17
99.67	2.73	0.07	100.18	9.07	4.29
99.68	2.98	0.09	100.19	9.13	4.40
99.69	3.21	0.11	100.20	9.18	4.52
99.70	3.43	0.14	100.21	9.23	4.63
99.71	3.65	0.17	100.22	9.28	4.75
99.72	3.85	0.21	100.23	9.32	4.86
99.73	4.05	0.24	100.24	9.37	4.97
99.74	4.24	0.28	100.25	9.41	5.08
99.75	4.42	0.33	100.26	9.45	5.20
99.76	4.60	0.37	100.27	9.49	5.31
99.77	4.77	0.42	100.28	9.52	5.42
99.78	4.94	0.48	100.29	9.55	5.52
99.79	5.11	0.53	100.30	9.58	5.63
99.80	5.26	0.59	100.31	9.61	5.73
99.81	5.42	0.65	100.32	9.64	5.84
99.82	5.57	0.71	100.33	9.66	5.94
99.83	5.72	0.78	100.34	9.68	6.03
99.84	5.86	0.85	100.35	9.70	6.13
99.85	6.00	0.92	100.36	9.72	6.22
99.86	6.13	1.00	100.37	9.73	6.32
99.87	6.27	1.07	100.38	9.74	6.40
99.88	6.39	1.15	100.39	9.75	6.49
99.89	6.52	1.23	100.40	9.76	6.57
99.90	6.64	1.32	100.41	9.76	6.65
99.91	6.76	1.40	100.42	9.76	6.73
99.92	6.88	1.49	100.43	9.75	6.80
99.93	6.99	1.58	100.44	9.75	6.86
99.94	7.11	1.67	100.45	9.74	6.93
99.95	7.22	1.77	100.46	9.72	6.99
99.96	7.32	1.86	100.47	9.70	7.04
99.97	7.43	1.96	100.48	9.68	7.09
99.98	7.53	2.06	100.49	9.65	7.13
99.99	7.63	2.16	100.50	9.62	7.16
100.00	7.72	2.27	100.51	9.59	7.19
100.01	7.82	2.37	100.52	9.54	7.22
100.02	7.91	2.48	100.53	9.50	7.23
100.03	8.00	2.58	100.54	9.44	7.23
100.04	8.08	2.69	100.55	9.37	7.22
100.05	8.17	2.80	100.56	9.30	7.20
100.06	8.25	2.91	100.57	9.20	7.16
100.07	8.33	3.02	100.58	9.09	7.10
100.08	8.41	3.13	100.59	8.93	7.00
100.09	8.49	3.25	100.60	8.56	6.72
100.10	8.56	3.36			

Summary for Pond 1P: BMP C - MWS

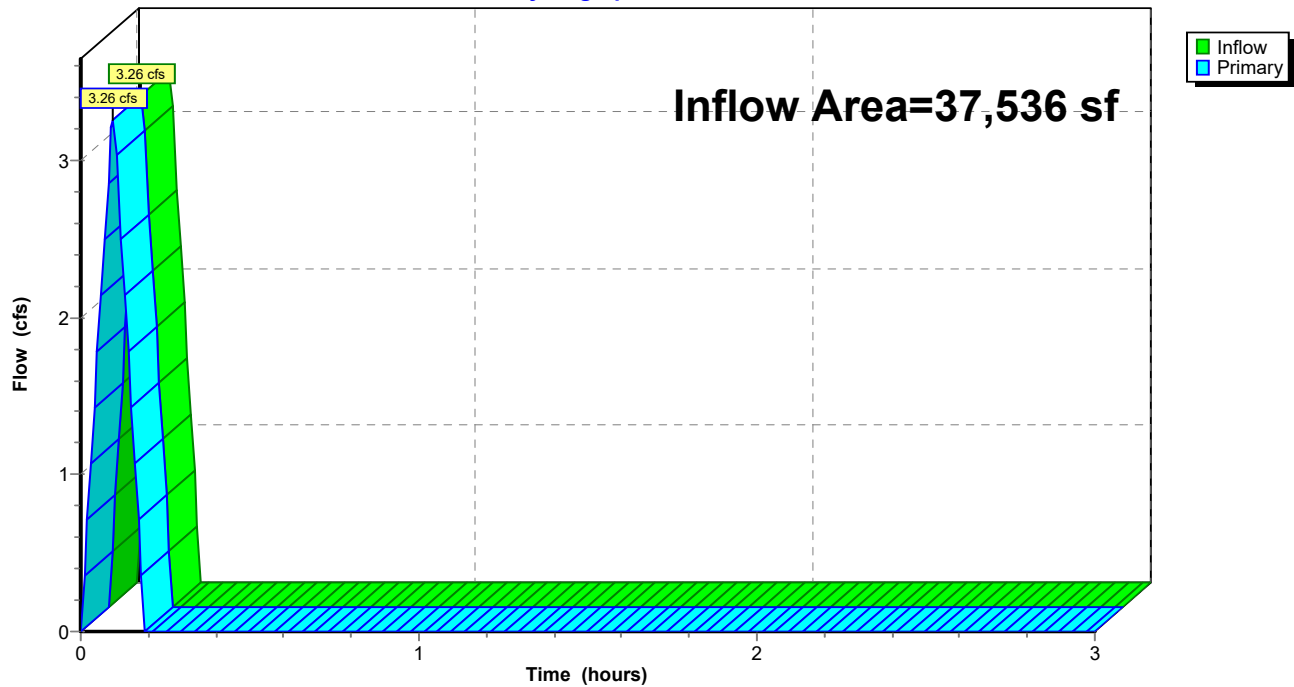
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 37,536 sf, 85.17% Impervious, Inflow Depth = 0.37" for 25-Year event
Inflow = 3.26 cfs @ 0.09 hrs, Volume= 1,156 cf
Primary = 3.26 cfs @ 0.09 hrs, Volume= 1,156 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Pond 1P: BMP C - MWS

Hydrograph



Hydrograph for Pond 1P: BMP C - MWS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	2.55	0.00		0.00
0.05	1.78		1.78	2.60	0.00		0.00
0.10	3.21		3.21	2.65	0.00		0.00
0.15	1.43		1.43	2.70	0.00		0.00
0.20	0.00		0.00	2.75	0.00		0.00
0.25	0.00		0.00	2.80	0.00		0.00
0.30	0.00		0.00	2.85	0.00		0.00
0.35	0.00		0.00	2.90	0.00		0.00
0.40	0.00		0.00	2.95	0.00		0.00
0.45	0.00		0.00	3.00	0.00		0.00
0.50	0.00		0.00				
0.55	0.00		0.00				
0.60	0.00		0.00				
0.65	0.00		0.00				
0.70	0.00		0.00				
0.75	0.00		0.00				
0.80	0.00		0.00				
0.85	0.00		0.00				
0.90	0.00		0.00				
0.95	0.00		0.00				
1.00	0.00		0.00				
1.05	0.00		0.00				
1.10	0.00		0.00				
1.15	0.00		0.00				
1.20	0.00		0.00				
1.25	0.00		0.00				
1.30	0.00		0.00				
1.35	0.00		0.00				
1.40	0.00		0.00				
1.45	0.00		0.00				
1.50	0.00		0.00				
1.55	0.00		0.00				
1.60	0.00		0.00				
1.65	0.00		0.00				
1.70	0.00		0.00				
1.75	0.00		0.00				
1.80	0.00		0.00				
1.85	0.00		0.00				
1.90	0.00		0.00				
1.95	0.00		0.00				
2.00	0.00		0.00				
2.05	0.00		0.00				
2.10	0.00		0.00				
2.15	0.00		0.00				
2.20	0.00		0.00				
2.25	0.00		0.00				
2.30	0.00		0.00				
2.35	0.00		0.00				
2.40	0.00		0.00				
2.45	0.00		0.00				
2.50	0.00		0.00				

Summary for Pond 2P: BMP B - MWS

[57] Hint: Peaked at 99.95' (Flood elevation advised)

[79] Warning: Submerged Pond 5P Primary device # 1 INLET by 1.22'

Inflow Area = 60,995 sf, 83.46% Impervious, Inflow Depth = 0.05" for 25-Year event
 Inflow = 0.52 cfs @ 0.09 hrs, Volume= 242 cf
 Outflow = 0.52 cfs @ 0.09 hrs, Volume= 242 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.52 cfs @ 0.09 hrs, Volume= 242 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 99.95' @ 0.09 hrs

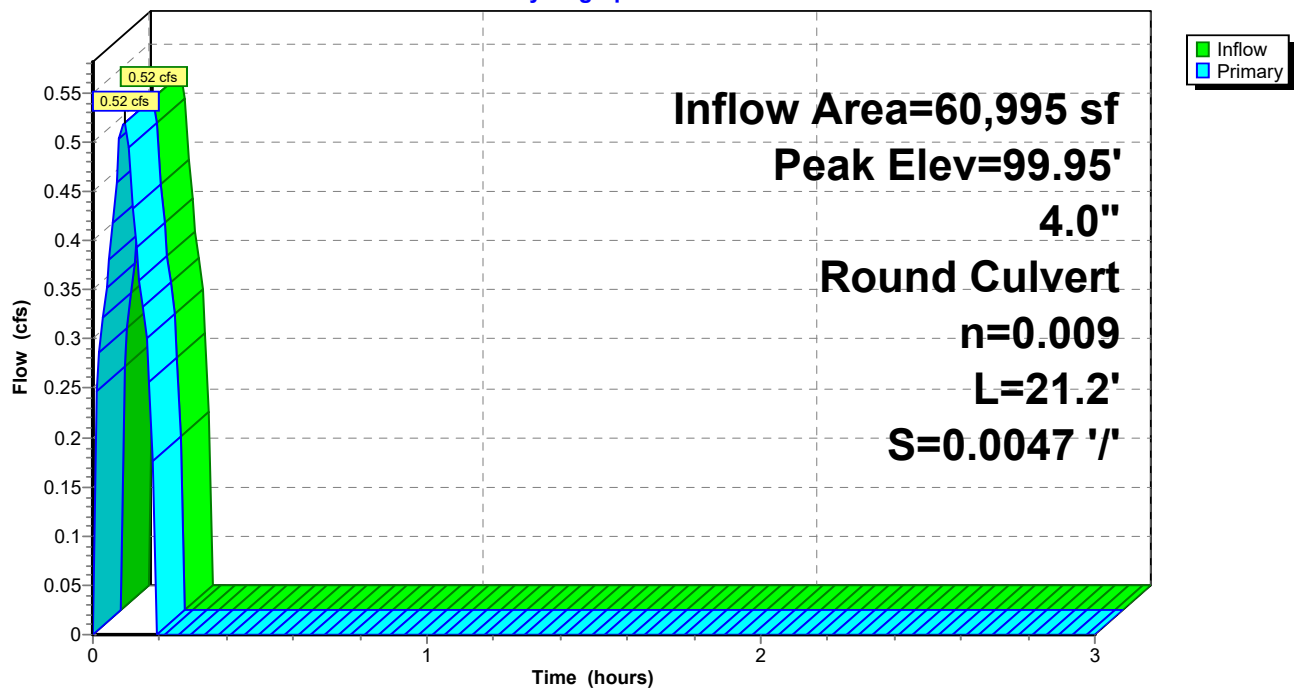
Device	Routing	Invert	Outlet Devices
#1	Primary	98.30'	4.0" Round Culvert L= 21.2' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 98.30' / 98.20' S= 0.0047 '/' Cc= 0.900 n= 0.009, Flow Area= 0.09 sf

Primary OutFlow Max=0.52 cfs @ 0.09 hrs HW=99.94' (Free Discharge)

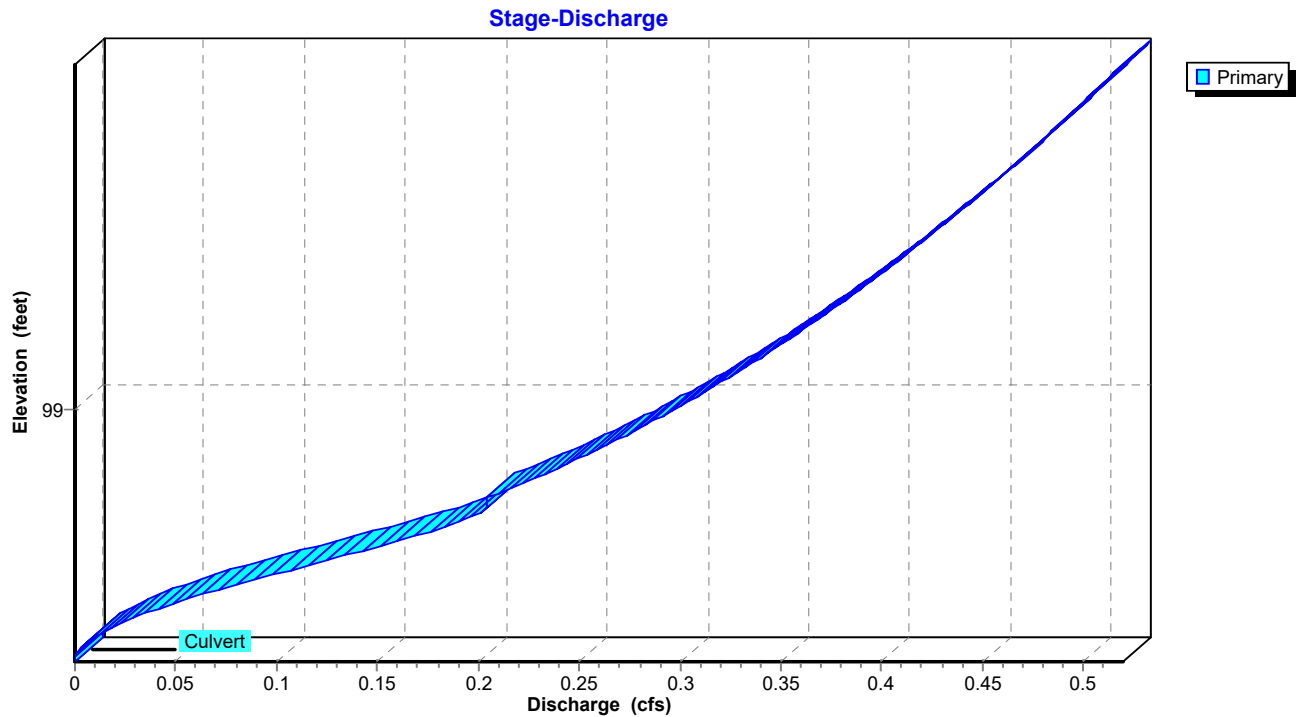
1=Culvert (Barrel Controls 0.52 cfs @ 5.93 fps)

Pond 2P: BMP B - MWS

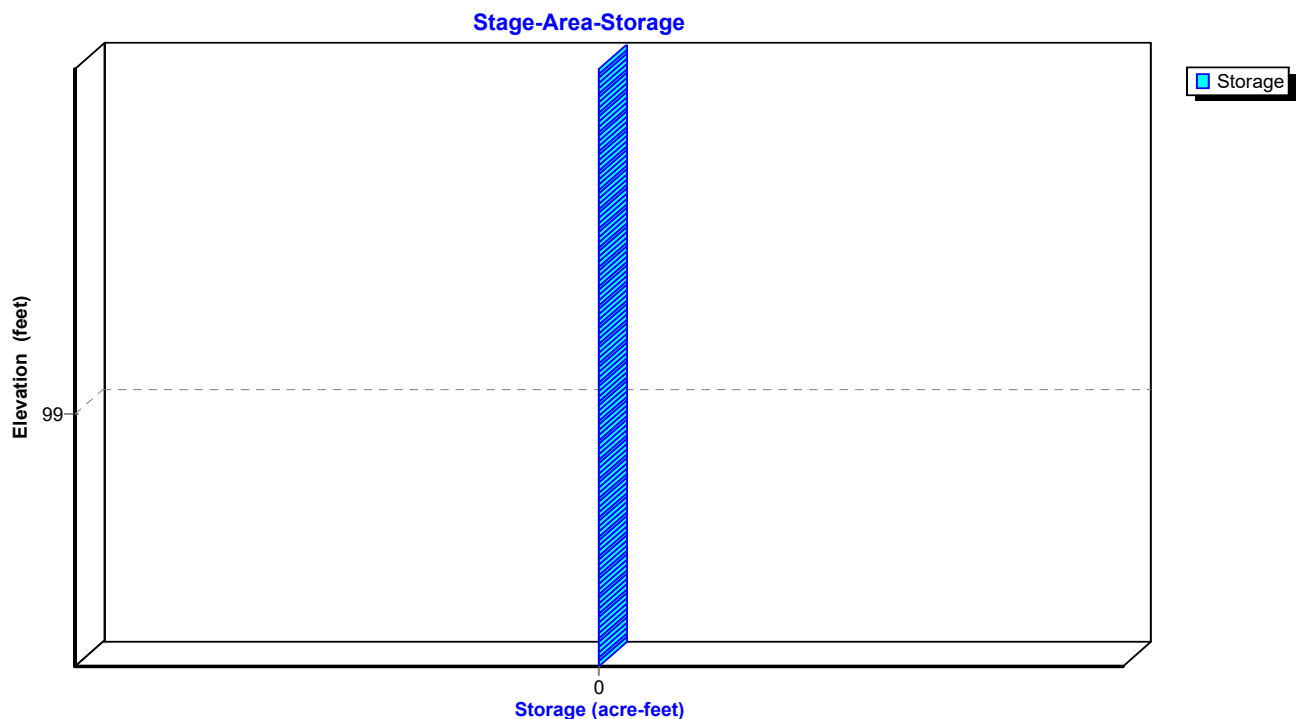
Hydrograph



Pond 2P: BMP B - MWS



Pond 2P: BMP B - MWS



Hydrograph for Pond 2P: BMP B - MWS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	98.30	0.00	2.55	0.00	98.30	0.00
0.05	0.38	99.30	0.38	2.60	0.00	98.30	0.00
0.10	0.52	99.94	0.52	2.65	0.00	98.30	0.00
0.15	0.33	99.12	0.33	2.70	0.00	98.30	0.00
0.20	0.00	98.30	0.00	2.75	0.00	98.30	0.00
0.25	0.00	98.30	0.00	2.80	0.00	98.30	0.00
0.30	0.00	98.30	0.00	2.85	0.00	98.30	0.00
0.35	0.00	98.30	0.00	2.90	0.00	98.30	0.00
0.40	0.00	98.30	0.00	2.95	0.00	98.30	0.00
0.45	0.00	98.30	0.00	3.00	0.00	98.30	0.00
0.50	0.00	98.30	0.00				
0.55	0.00	98.30	0.00				
0.60	0.00	98.30	0.00				
0.65	0.00	98.30	0.00				
0.70	0.00	98.30	0.00				
0.75	0.00	98.30	0.00				
0.80	0.00	98.30	0.00				
0.85	0.00	98.30	0.00				
0.90	0.00	98.30	0.00				
0.95	0.00	98.30	0.00				
1.00	0.00	98.30	0.00				
1.05	0.00	98.30	0.00				
1.10	0.00	98.30	0.00				
1.15	0.00	98.30	0.00				
1.20	0.00	98.30	0.00				
1.25	0.00	98.30	0.00				
1.30	0.00	98.30	0.00				
1.35	0.00	98.30	0.00				
1.40	0.00	98.30	0.00				
1.45	0.00	98.30	0.00				
1.50	0.00	98.30	0.00				
1.55	0.00	98.30	0.00				
1.60	0.00	98.30	0.00				
1.65	0.00	98.30	0.00				
1.70	0.00	98.30	0.00				
1.75	0.00	98.30	0.00				
1.80	0.00	98.30	0.00				
1.85	0.00	98.30	0.00				
1.90	0.00	98.30	0.00				
1.95	0.00	98.30	0.00				
2.00	0.00	98.30	0.00				
2.05	0.00	98.30	0.00				
2.10	0.00	98.30	0.00				
2.15	0.00	98.30	0.00				
2.20	0.00	98.30	0.00				
2.25	0.00	98.30	0.00				
2.30	0.00	98.30	0.00				
2.35	0.00	98.30	0.00				
2.40	0.00	98.30	0.00				
2.45	0.00	98.30	0.00				
2.50	0.00	98.30	0.00				

Stage-Discharge for Pond 2P: BMP B - MWS

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
98.30	0.00	98.81	0.23	99.32	0.39	99.83	0.50
98.31	0.00	98.82	0.23	99.33	0.39	99.84	0.50
98.32	0.00	98.83	0.24	99.34	0.39	99.85	0.50
98.33	0.00	98.84	0.24	99.35	0.39	99.86	0.50
98.34	0.00	98.85	0.25	99.36	0.40	99.87	0.50
98.35	0.00	98.86	0.25	99.37	0.40	99.88	0.51
98.36	0.01	98.87	0.25	99.38	0.40	99.89	0.51
98.37	0.01	98.88	0.26	99.39	0.40	99.90	0.51
98.38	0.01	98.89	0.26	99.40	0.41	99.91	0.51
98.39	0.02	98.90	0.26	99.41	0.41	99.92	0.51
98.40	0.02	98.91	0.27	99.42	0.41	99.93	0.52
98.41	0.02	98.92	0.27	99.43	0.41	99.94	0.52
98.42	0.03	98.93	0.27	99.44	0.42	99.95	0.52
98.43	0.03	98.94	0.28	99.45	0.42		
98.44	0.04	98.95	0.28	99.46	0.42		
98.45	0.04	98.96	0.28	99.47	0.42		
98.46	0.05	98.97	0.29	99.48	0.42		
98.47	0.05	98.98	0.29	99.49	0.43		
98.48	0.06	98.99	0.29	99.50	0.43		
98.49	0.07	99.00	0.30	99.51	0.43		
98.50	0.07	99.01	0.30	99.52	0.43		
98.51	0.08	99.02	0.30	99.53	0.44		
98.52	0.08	99.03	0.31	99.54	0.44		
98.53	0.09	99.04	0.31	99.55	0.44		
98.54	0.10	99.05	0.31	99.56	0.44		
98.55	0.10	99.06	0.32	99.57	0.44		
98.56	0.11	99.07	0.32	99.58	0.45		
98.57	0.12	99.08	0.32	99.59	0.45		
98.58	0.12	99.09	0.33	99.60	0.45		
98.59	0.13	99.10	0.33	99.61	0.45		
98.60	0.14	99.11	0.33	99.62	0.45		
98.61	0.14	99.12	0.33	99.63	0.46		
98.62	0.15	99.13	0.34	99.64	0.46		
98.63	0.16	99.14	0.34	99.65	0.46		
98.64	0.16	99.15	0.34	99.66	0.46		
98.65	0.17	99.16	0.35	99.67	0.46		
98.66	0.18	99.17	0.35	99.68	0.47		
98.67	0.18	99.18	0.35	99.69	0.47		
98.68	0.19	99.19	0.35	99.70	0.47		
98.69	0.19	99.20	0.36	99.71	0.47		
98.70	0.20	99.21	0.36	99.72	0.47		
98.71	0.20	99.22	0.36	99.73	0.48		
98.72	0.20	99.23	0.36	99.74	0.48		
98.73	0.20	99.24	0.37	99.75	0.48		
98.74	0.20	99.25	0.37	99.76	0.48		
98.75	0.20	99.26	0.37	99.77	0.48		
98.76	0.21	99.27	0.37	99.78	0.49		
98.77	0.21	99.28	0.38	99.79	0.49		
98.78	0.22	99.29	0.38	99.80	0.49		
98.79	0.22	99.30	0.38	99.81	0.49		
98.80	0.23	99.31	0.38	99.82	0.49		

Summary for Pond 3P: OUTLET 2 - 12" Pipe

[57] Hint: Peaked at 97.58' (Flood elevation advised)
 [63] Warning: Exceeded Reach 5R INLET depth by 0.34' @ 0.11 hrs

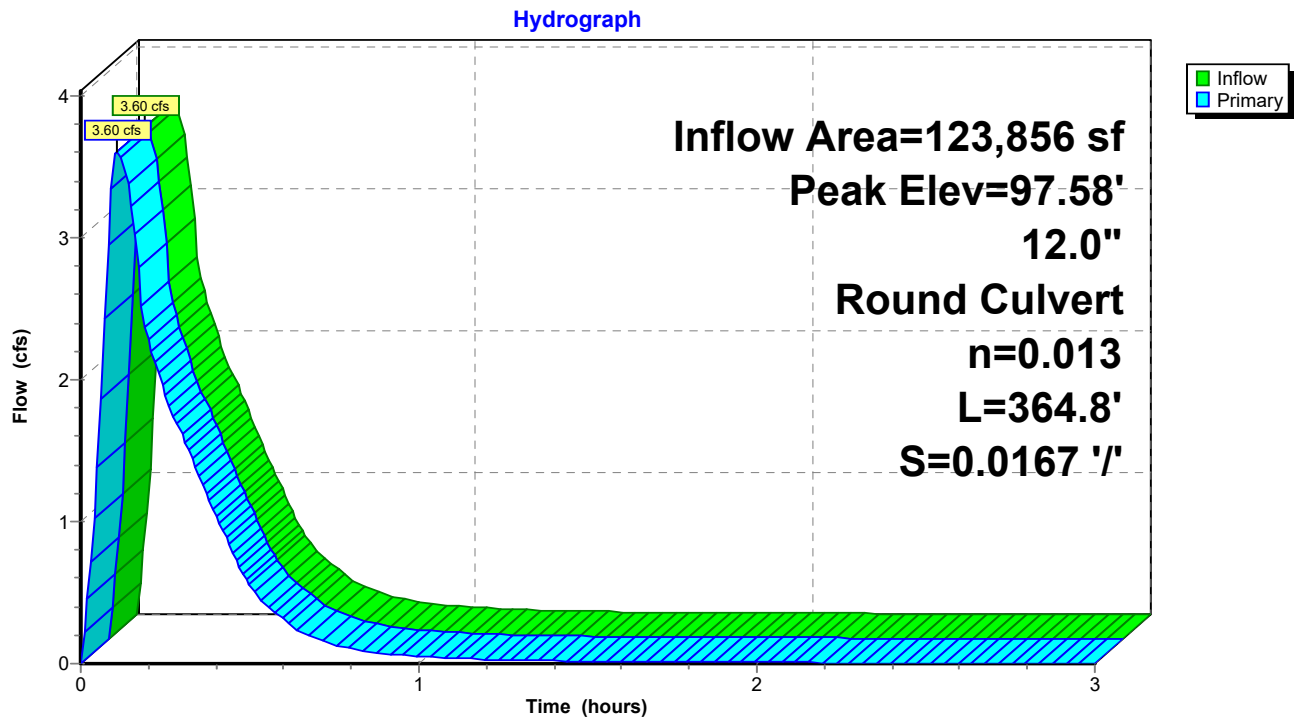
Inflow Area = 123,856 sf, 82.25% Impervious, Inflow Depth > 0.35" for 25-Year event
 Inflow = 3.60 cfs @ 0.11 hrs, Volume= 3,562 cf
 Outflow = 3.60 cfs @ 0.11 hrs, Volume= 3,562 cf, Atten= 0%, Lag= 0.0 min
 Primary = 3.60 cfs @ 0.11 hrs, Volume= 3,562 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 97.58' @ 0.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	96.50'	12.0" Round Culvert L= 364.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 96.50' / 90.40' S= 0.0167 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

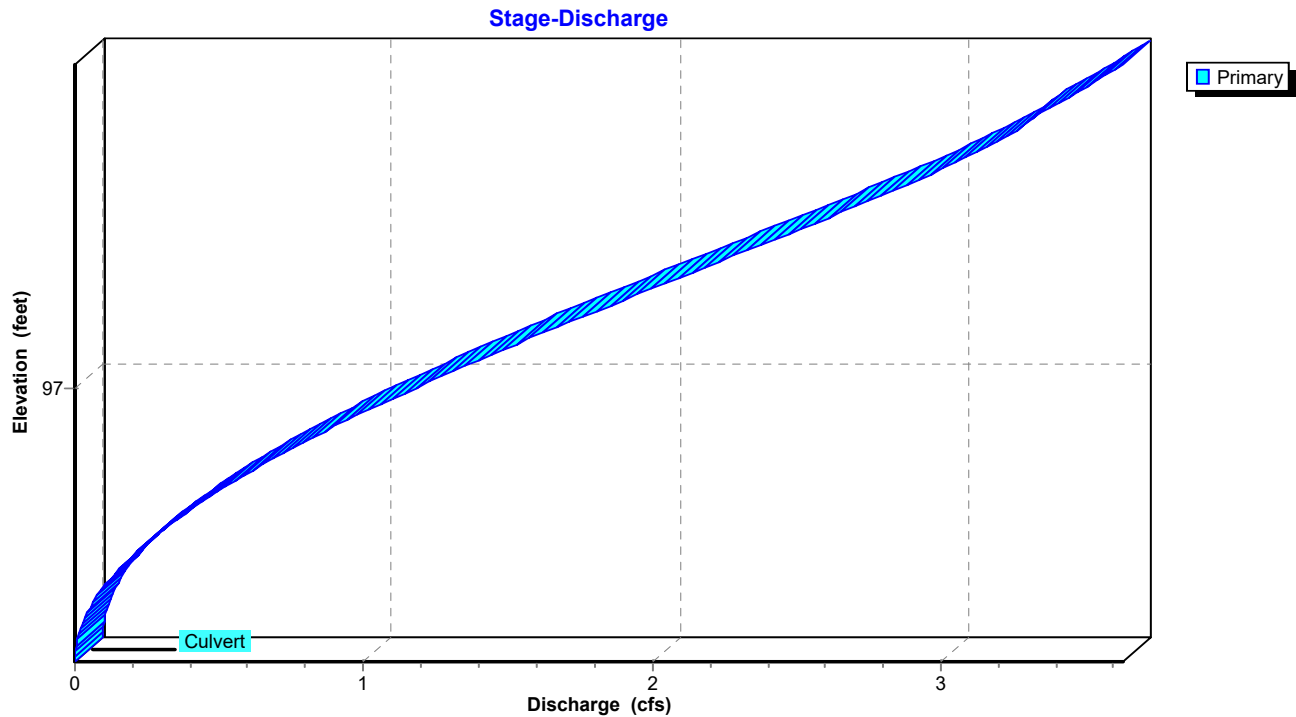
Primary OutFlow Max=3.60 cfs @ 0.11 hrs HW=97.58' (Free Discharge)
 ↑1=Culvert (Inlet Controls 3.60 cfs @ 4.58 fps)

Pond 3P: OUTLET 2 - 12" Pipe

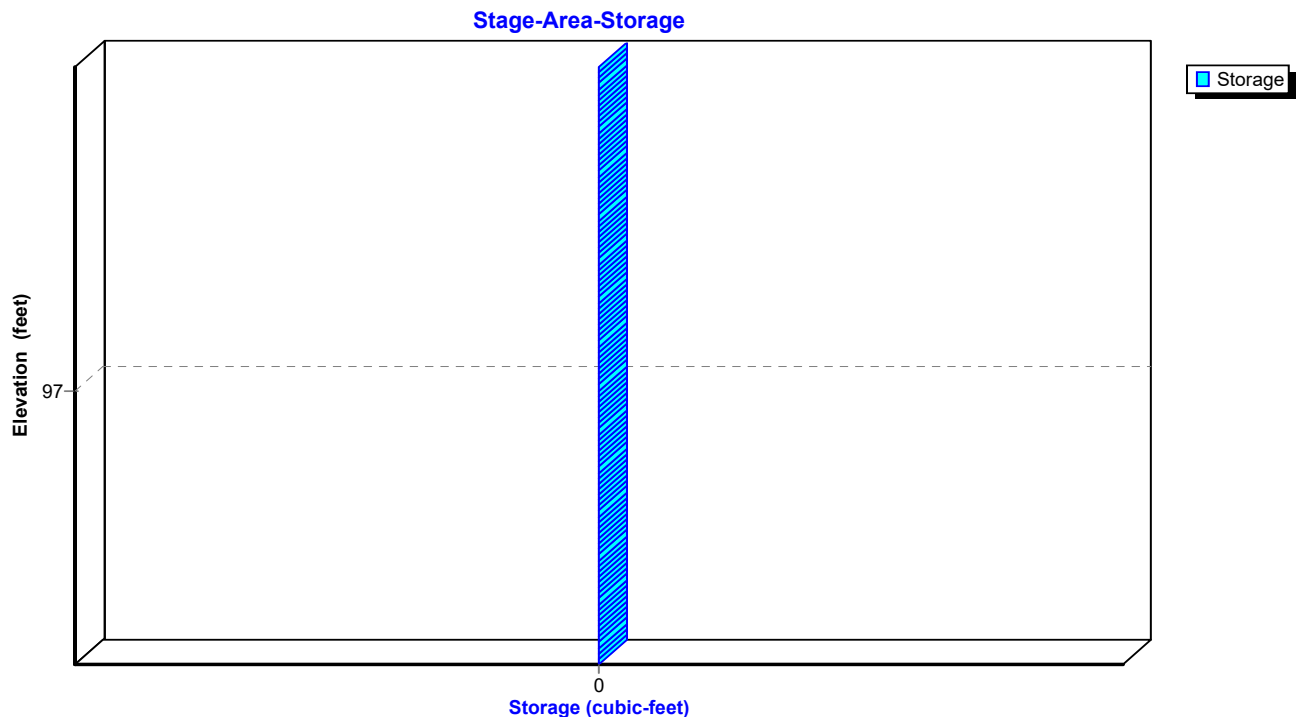


OUTLET 2 Q_{25} = 3.60 CFS

Pond 3P: OUTLET 2 - 12" Pipe



Pond 3P: OUTLET 2 - 12" Pipe



Hydrograph for Pond 3P: OUTLET 2 - 12" Pipe

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	96.50	0.00	2.55	0.00	96.53	0.00
0.05	1.38	97.05	1.38	2.60	0.00	96.53	0.00
0.10	3.59	97.58	3.59	2.65	0.00	96.53	0.00
0.15	3.22	97.46	3.22	2.70	0.00	96.53	0.00
0.20	2.28	97.24	2.28	2.75	0.00	96.53	0.00
0.25	1.89	97.16	1.89	2.80	0.00	96.53	0.00
0.30	1.62	97.10	1.62	2.85	0.00	96.53	0.00
0.35	1.32	97.03	1.32	2.90	0.00	96.53	0.00
0.40	1.04	96.96	1.04	2.95	0.00	96.53	0.00
0.45	0.78	96.90	0.78	3.00	0.00	96.53	0.00
0.50	0.55	96.83	0.55				
0.55	0.41	96.78	0.41				
0.60	0.31	96.74	0.31				
0.65	0.23	96.71	0.23				
0.70	0.17	96.68	0.17				
0.75	0.13	96.66	0.13				
0.80	0.10	96.64	0.10				
0.85	0.08	96.63	0.08				
0.90	0.07	96.62	0.07				
0.95	0.06	96.61	0.06				
1.00	0.05	96.60	0.05				
1.05	0.04	96.59	0.04				
1.10	0.04	96.59	0.04				
1.15	0.03	96.58	0.03				
1.20	0.03	96.58	0.03				
1.25	0.03	96.57	0.03				
1.30	0.02	96.57	0.02				
1.35	0.02	96.56	0.02				
1.40	0.02	96.56	0.02				
1.45	0.02	96.56	0.02				
1.50	0.02	96.56	0.02				
1.55	0.01	96.55	0.01				
1.60	0.01	96.55	0.01				
1.65	0.01	96.55	0.01				
1.70	0.01	96.55	0.01				
1.75	0.01	96.55	0.01				
1.80	0.01	96.55	0.01				
1.85	0.01	96.54	0.01				
1.90	0.01	96.54	0.01				
1.95	0.01	96.54	0.01				
2.00	0.01	96.54	0.01				
2.05	0.01	96.54	0.01				
2.10	0.01	96.54	0.01				
2.15	0.01	96.54	0.01				
2.20	0.01	96.54	0.01				
2.25	0.01	96.54	0.01				
2.30	0.01	96.53	0.01				
2.35	0.01	96.53	0.01				
2.40	0.00	96.53	0.00				
2.45	0.00	96.53	0.00				
2.50	0.00	96.53	0.00				

Stage-Discharge for Pond 3P: OUTLET 2 - 12" Pipe

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
96.50	0.00	97.01	1.22	97.52	3.41
96.51	0.00	97.02	1.27	97.53	3.44
96.52	0.00	97.03	1.31	97.54	3.47
96.53	0.00	97.04	1.35	97.55	3.51
96.54	0.01	97.05	1.40	97.56	3.54
96.55	0.01	97.06	1.44	97.57	3.57
96.56	0.02	97.07	1.49	97.58	3.60
96.57	0.02	97.08	1.53	97.59	3.63
96.58	0.03	97.09	1.58		
96.59	0.04	97.10	1.62		
96.60	0.05	97.11	1.67		
96.61	0.06	97.12	1.71		
96.62	0.08	97.13	1.76		
96.63	0.09	97.14	1.81		
96.64	0.11	97.15	1.85		
96.65	0.12	97.16	1.90		
96.66	0.14	97.17	1.95		
96.67	0.16	97.18	2.00		
96.68	0.17	97.19	2.04		
96.69	0.19	97.20	2.09		
96.70	0.21	97.21	2.14		
96.71	0.23	97.22	2.19		
96.72	0.26	97.23	2.23		
96.73	0.28	97.24	2.28		
96.74	0.30	97.25	2.33		
96.75	0.33	97.26	2.38		
96.76	0.35	97.27	2.42		
96.77	0.38	97.28	2.47		
96.78	0.41	97.29	2.52		
96.79	0.43	97.30	2.56		
96.80	0.46	97.31	2.61		
96.81	0.49	97.32	2.66		
96.82	0.52	97.33	2.70		
96.83	0.55	97.34	2.75		
96.84	0.58	97.35	2.79		
96.85	0.62	97.36	2.84		
96.86	0.65	97.37	2.88		
96.87	0.68	97.38	2.92		
96.88	0.72	97.39	2.96		
96.89	0.75	97.40	3.01		
96.90	0.79	97.41	3.05		
96.91	0.83	97.42	3.09		
96.92	0.86	97.43	3.12		
96.93	0.90	97.44	3.16		
96.94	0.94	97.45	3.20		
96.95	0.98	97.46	3.23		
96.96	1.02	97.47	3.26		
96.97	1.06	97.48	3.29		
96.98	1.10	97.49	3.32		
96.99	1.14	97.50	3.34		
97.00	1.18	97.51	3.38		

Summary for Pond 4P: BMP A - Biofiltration Basin

Inflow Area = 8,600 sf, 74.73% Impervious, Inflow Depth = 0.33" for 25-Year event
 Inflow = 0.67 cfs @ 0.09 hrs, Volume= 240 cf
 Outflow = 0.65 cfs @ 0.10 hrs, Volume= 240 cf, Atten= 4%, Lag= 0.5 min
 Primary = 0.65 cfs @ 0.10 hrs, Volume= 240 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 106.04' @ 0.10 hrs Surf.Area= 380 sf Storage= 38 cf

Plug-Flow detention time= 1.2 min calculated for 239 cf (100% of inflow)

Center-of-Mass det. time= 1.2 min (6.7 - 5.5)

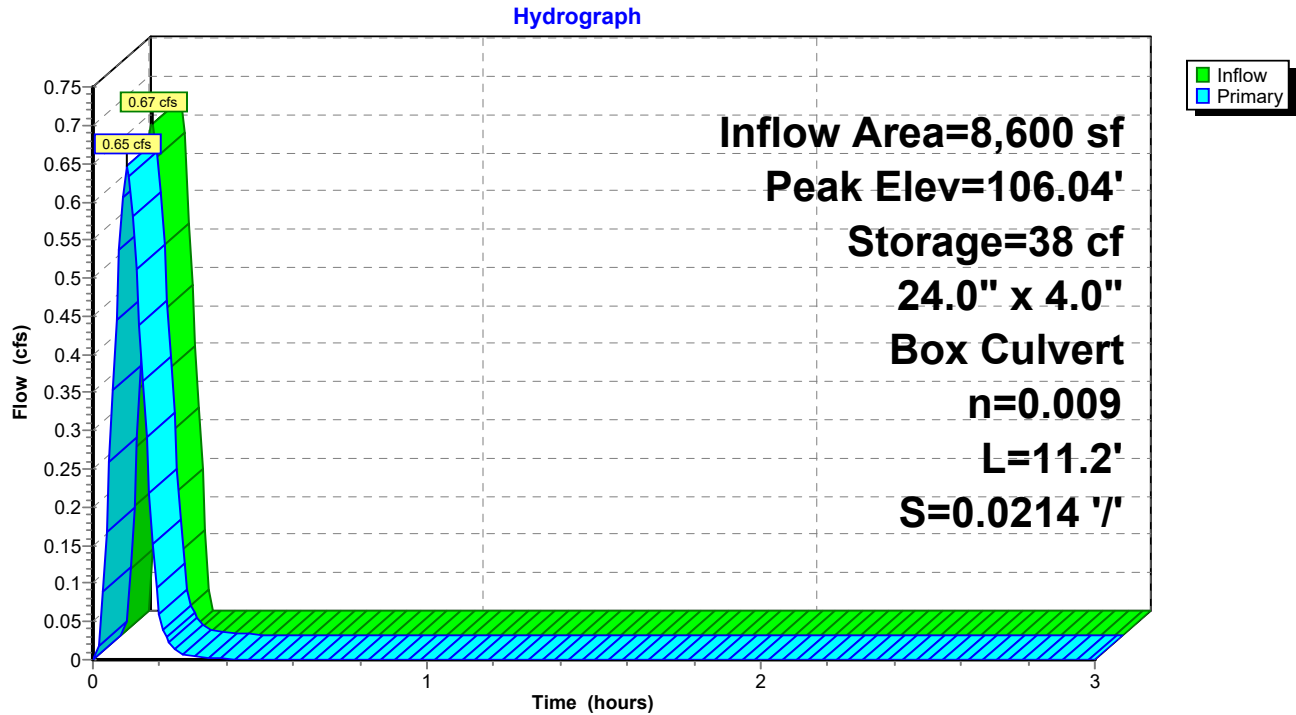
Volume	Invert	Avail.Storage	Storage Description	
#1	105.79'	612 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
105.79	380	0.0	0	0
105.80	380	40.0	2	2
106.79	380	40.0	150	152
106.80	380	10.0	0	152
108.79	380	10.0	76	228
108.80	380	100.0	4	232
109.80	380	100.0	380	612

Device	Routing	Invert	Outlet Devices
#1	Primary	105.79'	24.0" W x 4.0" H Box Culvert L= 11.2' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.79' / 105.55' S= 0.0214 '/' Cc= 0.900 n= 0.009, Flow Area= 0.67 sf

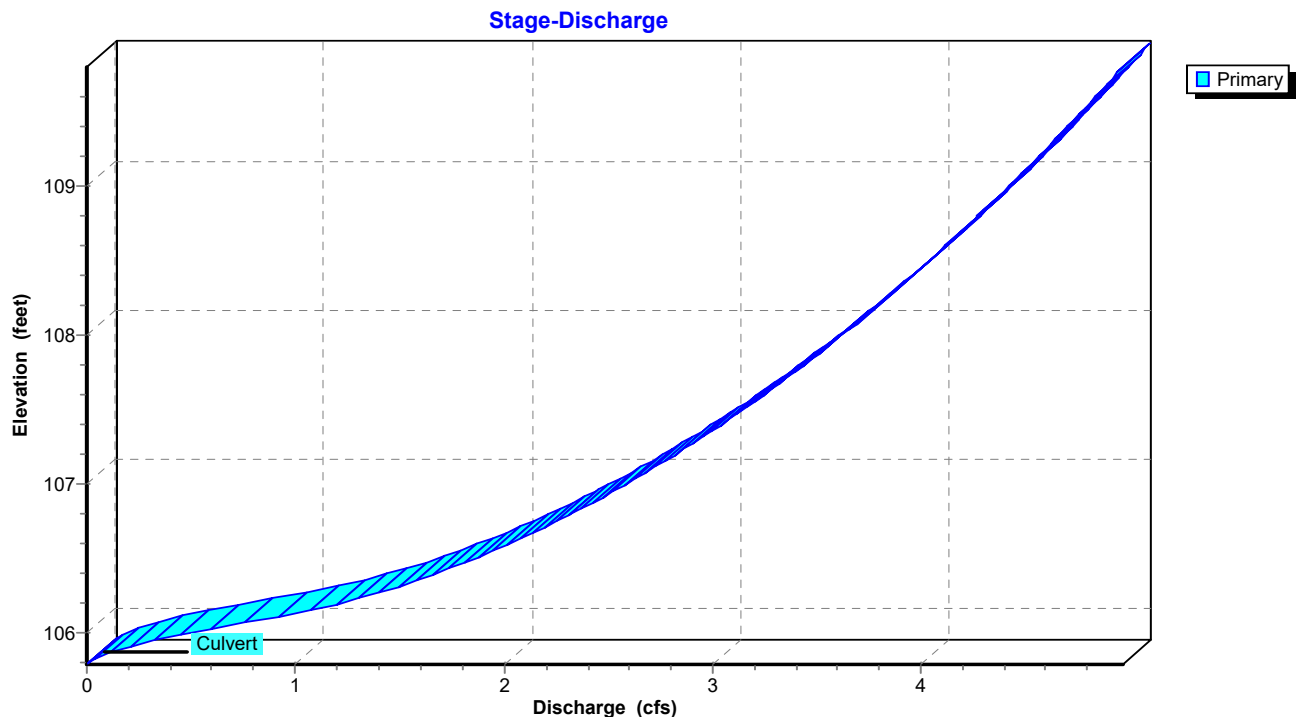
Primary OutFlow Max=0.64 cfs @ 0.10 hrs HW=106.04' (Free Discharge)

↑**1=Culvert** (Inlet Controls 0.64 cfs @ 1.27 fps)

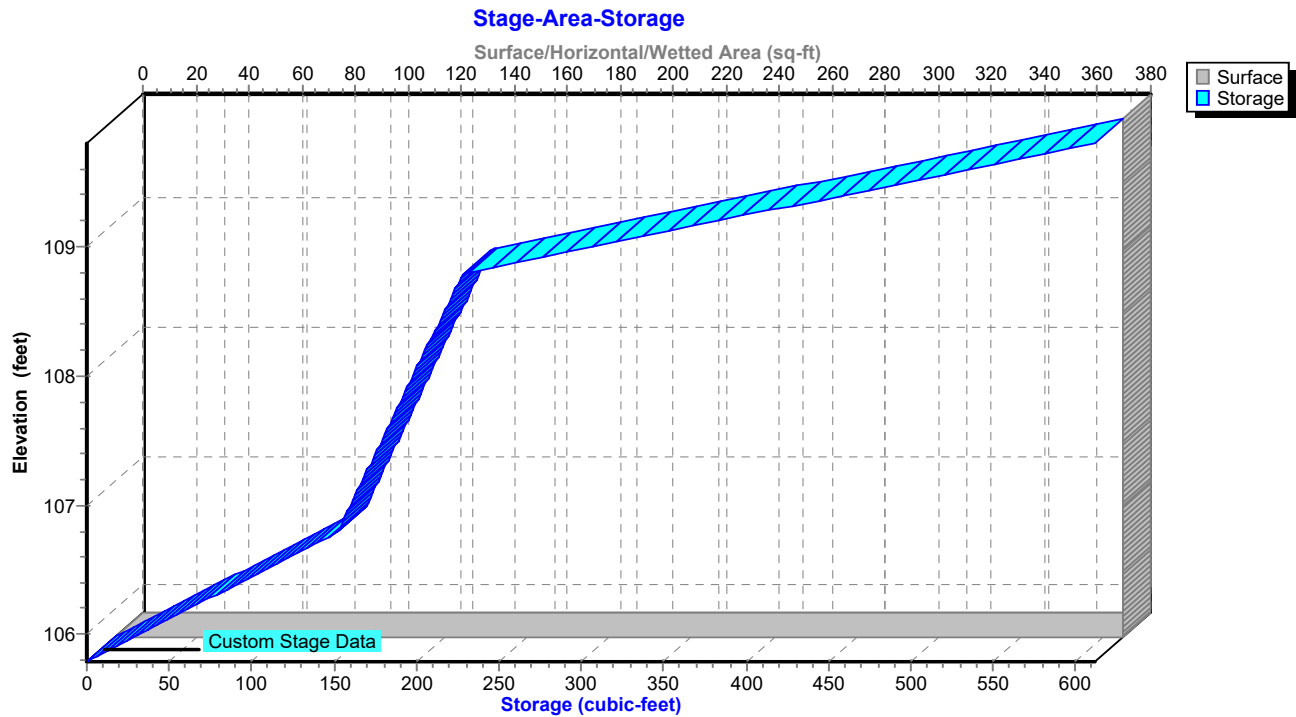
Pond 4P: BMP A - Biofiltration Basin



Pond 4P: BMP A - Biofiltration Basin



Pond 4P: BMP A - Biofiltration Basin



Hydrograph for Pond 4P: BMP A - Biofiltration Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	105.79	0.00
0.10	0.67	38	106.04	0.64
0.20	0.00	8	105.84	0.06
0.30	0.00	1	105.80	0.00
0.40	0.00	0	105.79	0.00
0.50	0.00	0	105.79	0.00
0.60	0.00	0	105.79	0.00
0.70	0.00	0	105.79	0.00
0.80	0.00	0	105.79	0.00
0.90	0.00	0	105.79	0.00
1.00	0.00	0	105.79	0.00
1.10	0.00	0	105.79	0.00
1.20	0.00	0	105.79	0.00
1.30	0.00	0	105.79	0.00
1.40	0.00	0	105.79	0.00
1.50	0.00	0	105.79	0.00
1.60	0.00	0	105.79	0.00
1.70	0.00	0	105.79	0.00
1.80	0.00	0	105.79	0.00
1.90	0.00	0	105.79	0.00
2.00	0.00	0	105.79	0.00
2.10	0.00	0	105.79	0.00
2.20	0.00	0	105.79	0.00
2.30	0.00	0	105.79	0.00
2.40	0.00	0	105.79	0.00
2.50	0.00	0	105.79	0.00
2.60	0.00	0	105.79	0.00
2.70	0.00	0	105.79	0.00
2.80	0.00	0	105.79	0.00
2.90	0.00	0	105.79	0.00
3.00	0.00	0	105.79	0.00

Stage-Discharge for Pond 4P: BMP A - Biofiltration Basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
105.79	0.00	106.81	2.34	107.83	3.47	108.85	4.31
105.81	0.01	106.83	2.36	107.85	3.49	108.87	4.32
105.83	0.04	106.85	2.39	107.87	3.50	108.89	4.34
105.85	0.07	106.87	2.42	107.89	3.52	108.91	4.35
105.87	0.11	106.89	2.44	107.91	3.54	108.93	4.37
105.89	0.16	106.91	2.47	107.93	3.56	108.95	4.38
105.91	0.21	106.93	2.50	107.95	3.58	108.97	4.40
105.93	0.27	106.95	2.52	107.97	3.59	108.99	4.41
105.95	0.32	106.97	2.55	107.99	3.61	109.01	4.43
105.97	0.39	106.99	2.57	108.01	3.63	109.03	4.44
105.99	0.45	107.01	2.60	108.03	3.65	109.05	4.46
106.01	0.52	107.03	2.62	108.05	3.67	109.07	4.47
106.03	0.60	107.05	2.65	108.07	3.68	109.09	4.49
106.05	0.67	107.07	2.67	108.09	3.70	109.11	4.50
106.07	0.75	107.09	2.70	108.11	3.72	109.13	4.51
106.09	0.83	107.11	2.72	108.13	3.74	109.15	4.53
106.11	0.92	107.13	2.74	108.15	3.75	109.17	4.54
106.13	1.00	107.15	2.77	108.17	3.77	109.19	4.56
106.15	1.07	107.17	2.79	108.19	3.79	109.21	4.57
106.17	1.14	107.19	2.81	108.21	3.80	109.23	4.58
106.19	1.19	107.21	2.83	108.23	3.82	109.25	4.60
106.21	1.25	107.23	2.86	108.25	3.84	109.27	4.61
106.23	1.30	107.25	2.88	108.27	3.85	109.29	4.63
106.25	1.35	107.27	2.90	108.29	3.87	109.31	4.64
106.27	1.40	107.29	2.92	108.31	3.89	109.33	4.65
106.29	1.45	107.31	2.95	108.33	3.90	109.35	4.67
106.31	1.49	107.33	2.97	108.35	3.92	109.37	4.68
106.33	1.54	107.35	2.99	108.37	3.94	109.39	4.70
106.35	1.58	107.37	3.01	108.39	3.95	109.41	4.71
106.37	1.62	107.39	3.03	108.41	3.97	109.43	4.72
106.39	1.66	107.41	3.05	108.43	3.98	109.45	4.74
106.41	1.70	107.43	3.07	108.45	4.00	109.47	4.75
106.43	1.73	107.45	3.10	108.47	4.02	109.49	4.76
106.45	1.77	107.47	3.12	108.49	4.03	109.51	4.78
106.47	1.81	107.49	3.14	108.51	4.05	109.53	4.79
106.49	1.84	107.51	3.16	108.53	4.06	109.55	4.80
106.51	1.88	107.53	3.18	108.55	4.08	109.57	4.82
106.53	1.91	107.55	3.20	108.57	4.10	109.59	4.83
106.55	1.95	107.57	3.22	108.59	4.11	109.61	4.84
106.57	1.98	107.59	3.24	108.61	4.13	109.63	4.86
106.59	2.01	107.61	3.26	108.63	4.14	109.65	4.87
106.61	2.04	107.63	3.28	108.65	4.16	109.67	4.88
106.63	2.07	107.65	3.30	108.67	4.17	109.69	4.90
106.65	2.11	107.67	3.32	108.69	4.19	109.71	4.91
106.67	2.14	107.69	3.34	108.71	4.20	109.73	4.92
106.69	2.17	107.71	3.35	108.73	4.22	109.75	4.94
106.71	2.20	107.73	3.37	108.75	4.23	109.77	4.95
106.73	2.22	107.75	3.39	108.77	4.25	109.79	4.96
106.75	2.25	107.77	3.41	108.79	4.27		
106.77	2.28	107.79	3.43	108.81	4.28		
106.79	2.31	107.81	3.45	108.83	4.30		

Summary for Pond 5P: Diversion Manhole

[57] Hint: Peaked at 100.18' (Flood elevation advised)

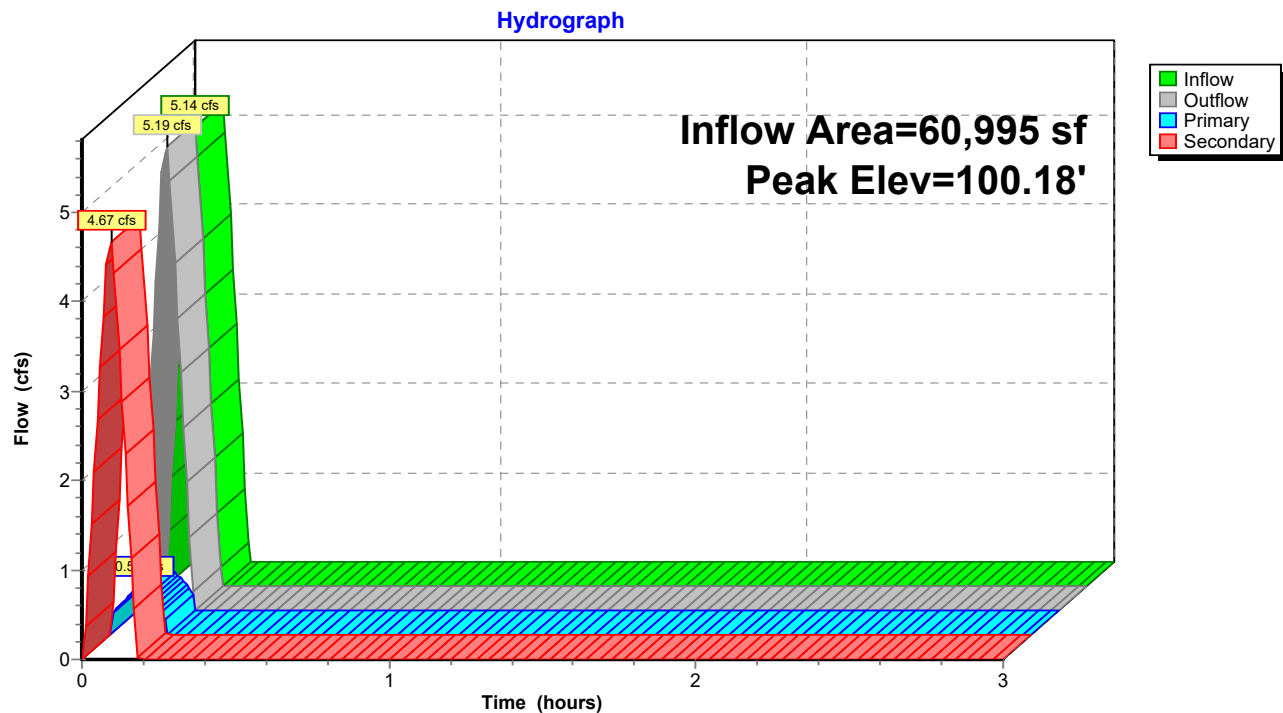
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 60,995 sf, 83.46% Impervious, Inflow Depth = 0.36" for 25-Year event
 Inflow = 5.14 cfs @ 0.09 hrs, Volume= 1,840 cf
 Outflow = 5.19 cfs @ 0.10 hrs, Volume= 1,840 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.52 cfs @ 0.09 hrs, Volume= 242 cf
 Secondary = 4.67 cfs @ 0.10 hrs, Volume= 1,598 cf

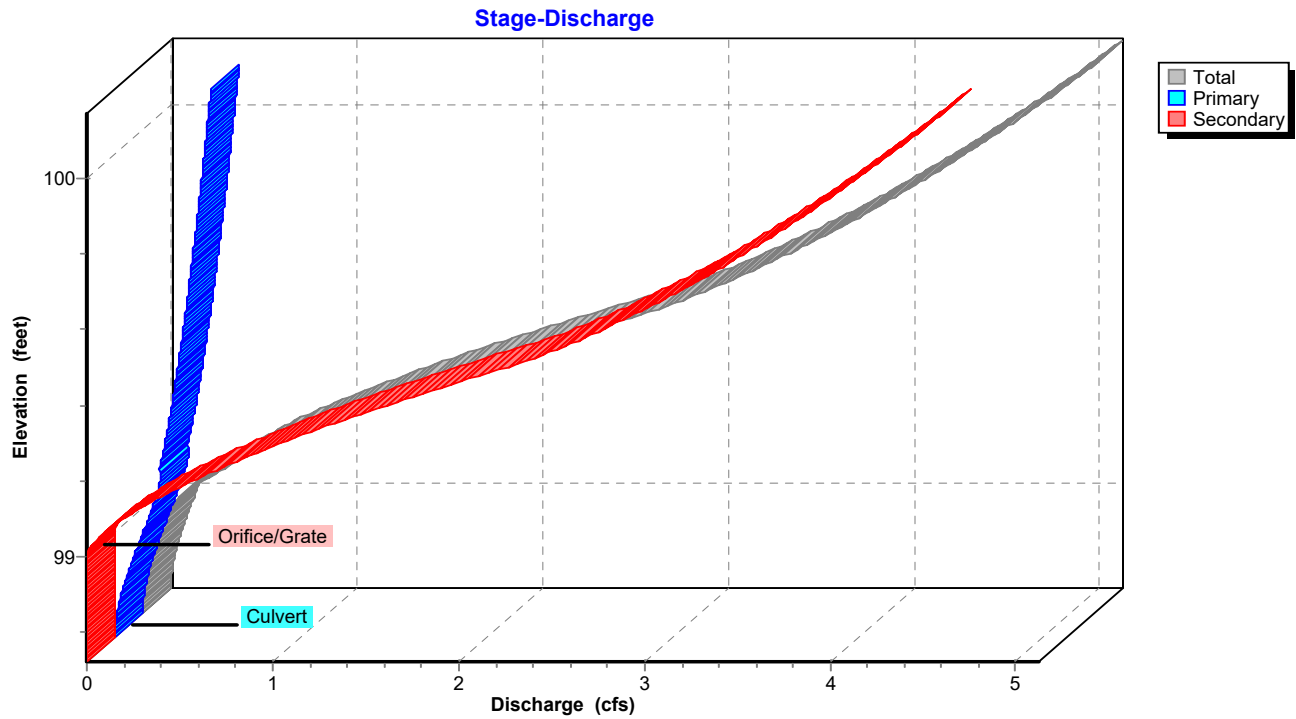
Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs / 2

Peak Elev= 100.18' @ 0.10 hrs

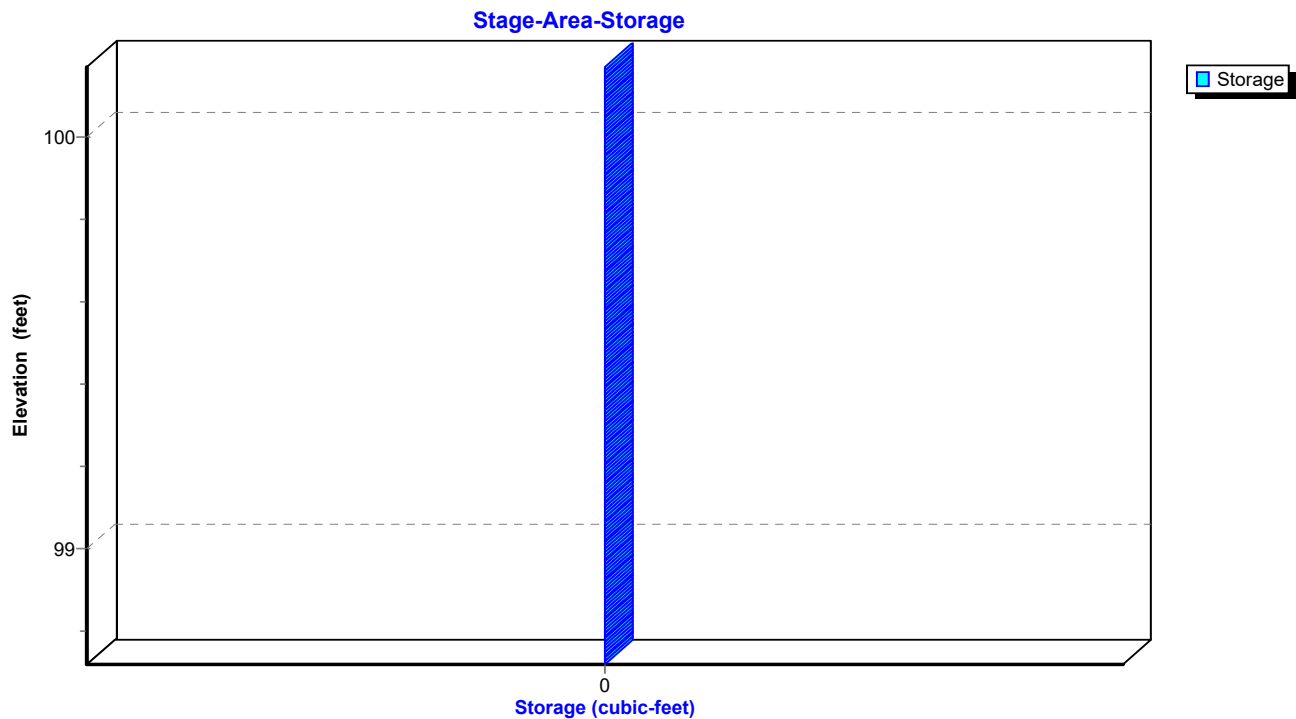
Device	Routing	Invert	Outlet Devices
#1	Primary	98.72'	4.0" Round Culvert L= 17.7' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 98.72' / 98.55' S= 0.0096 '/' Cc= 0.900 n= 0.009, Flow Area= 0.09 sf
#2	Secondary	99.00'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.52 cfs @ 0.09 hrs HW=100.17' (Free Discharge)↑**1=Culvert** (Barrel Controls 0.52 cfs @ 5.93 fps)**Secondary OutFlow** Max=4.59 cfs @ 0.10 hrs HW=100.17' (Free Discharge)↑**2=Orifice/Grate** (Orifice Controls 4.59 cfs @ 4.59 fps)**Pond 5P: Diversion Manhole**

Pond 5P: Diversion Manhole



Pond 5P: Diversion Manhole



Hydrograph for Pond 5P: Diversion Manhole

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	98.72	0.00	0.00	0.00
0.10	5.11	100.17	5.11	0.52	4.59
0.20	0.00	98.72	0.00	0.00	0.00
0.30	0.00	98.72	0.00	0.00	0.00
0.40	0.00	98.72	0.00	0.00	0.00
0.50	0.00	98.72	0.00	0.00	0.00
0.60	0.00	98.72	0.00	0.00	0.00
0.70	0.00	98.72	0.00	0.00	0.00
0.80	0.00	98.72	0.00	0.00	0.00
0.90	0.00	98.72	0.00	0.00	0.00
1.00	0.00	98.72	0.00	0.00	0.00
1.10	0.00	98.72	0.00	0.00	0.00
1.20	0.00	98.72	0.00	0.00	0.00
1.30	0.00	98.72	0.00	0.00	0.00
1.40	0.00	98.72	0.00	0.00	0.00
1.50	0.00	98.72	0.00	0.00	0.00
1.60	0.00	98.72	0.00	0.00	0.00
1.70	0.00	98.72	0.00	0.00	0.00
1.80	0.00	98.72	0.00	0.00	0.00
1.90	0.00	98.72	0.00	0.00	0.00
2.00	0.00	98.72	0.00	0.00	0.00
2.10	0.00	98.72	0.00	0.00	0.00
2.20	0.00	98.72	0.00	0.00	0.00
2.30	0.00	98.72	0.00	0.00	0.00
2.40	0.00	98.72	0.00	0.00	0.00
2.50	0.00	98.72	0.00	0.00	0.00
2.60	0.00	98.72	0.00	0.00	0.00
2.70	0.00	98.72	0.00	0.00	0.00
2.80	0.00	98.72	0.00	0.00	0.00
2.90	0.00	98.72	0.00	0.00	0.00
3.00	0.00	98.72	0.00	0.00	0.00

Stage-Discharge for Pond 5P: Diversion Manhole

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
98.72	0.00	0.00	0.00	99.74	3.75	0.42	3.33
98.74	0.00	0.00	0.00	99.76	3.83	0.43	3.40
98.76	0.00	0.00	0.00	99.78	3.90	0.43	3.47
98.78	0.01	0.01	0.00	99.80	3.98	0.44	3.54
98.80	0.02	0.02	0.00	99.82	4.05	0.44	3.60
98.82	0.03	0.03	0.00	99.84	4.12	0.45	3.67
98.84	0.04	0.04	0.00	99.86	4.18	0.45	3.73
98.86	0.05	0.05	0.00	99.88	4.25	0.46	3.80
98.88	0.06	0.06	0.00	99.90	4.32	0.46	3.86
98.90	0.08	0.08	0.00	99.92	4.38	0.46	3.92
98.92	0.09	0.09	0.00	99.94	4.45	0.47	3.98
98.94	0.11	0.11	0.00	99.96	4.51	0.47	4.04
98.96	0.12	0.12	0.00	99.98	4.57	0.48	4.09
98.98	0.14	0.14	0.00	100.00	4.63	0.48	4.15
99.00	0.15	0.15	0.00	100.02	4.69	0.49	4.21
99.02	0.19	0.17	0.02	100.04	4.75	0.49	4.26
99.04	0.24	0.19	0.05	100.06	4.81	0.50	4.32
99.06	0.30	0.20	0.09	100.08	4.87	0.50	4.37
99.08	0.36	0.21	0.15	100.10	4.93	0.50	4.42
99.10	0.43	0.23	0.20	100.12	4.98	0.51	4.48
99.12	0.50	0.24	0.27	100.14	5.04	0.51	4.53
99.14	0.58	0.24	0.34	100.16	5.09	0.52	4.58
99.16	0.66	0.25	0.41				
99.18	0.74	0.25	0.49				
99.20	0.83	0.26	0.57				
99.22	0.93	0.26	0.66				
99.24	1.03	0.27	0.75				
99.26	1.13	0.28	0.85				
99.28	1.24	0.29	0.95				
99.30	1.35	0.29	1.05				
99.32	1.46	0.30	1.16				
99.34	1.58	0.31	1.27				
99.36	1.70	0.32	1.39				
99.38	1.83	0.32	1.50				
99.40	1.95	0.33	1.62				
99.42	2.08	0.33	1.75				
99.44	2.21	0.34	1.87				
99.46	2.35	0.35	2.00				
99.48	2.49	0.35	2.13				
99.50	2.63	0.36	2.27				
99.52	2.75	0.36	2.39				
99.54	2.87	0.37	2.50				
99.56	2.97	0.38	2.60				
99.58	3.07	0.38	2.69				
99.60	3.17	0.39	2.78				
99.62	3.26	0.39	2.87				
99.64	3.35	0.40	2.95				
99.66	3.43	0.40	3.03				
99.68	3.52	0.41	3.11				
99.70	3.60	0.41	3.19				
99.72	3.68	0.42	3.26				

Summary for Pond 6P: BMP D - MWS

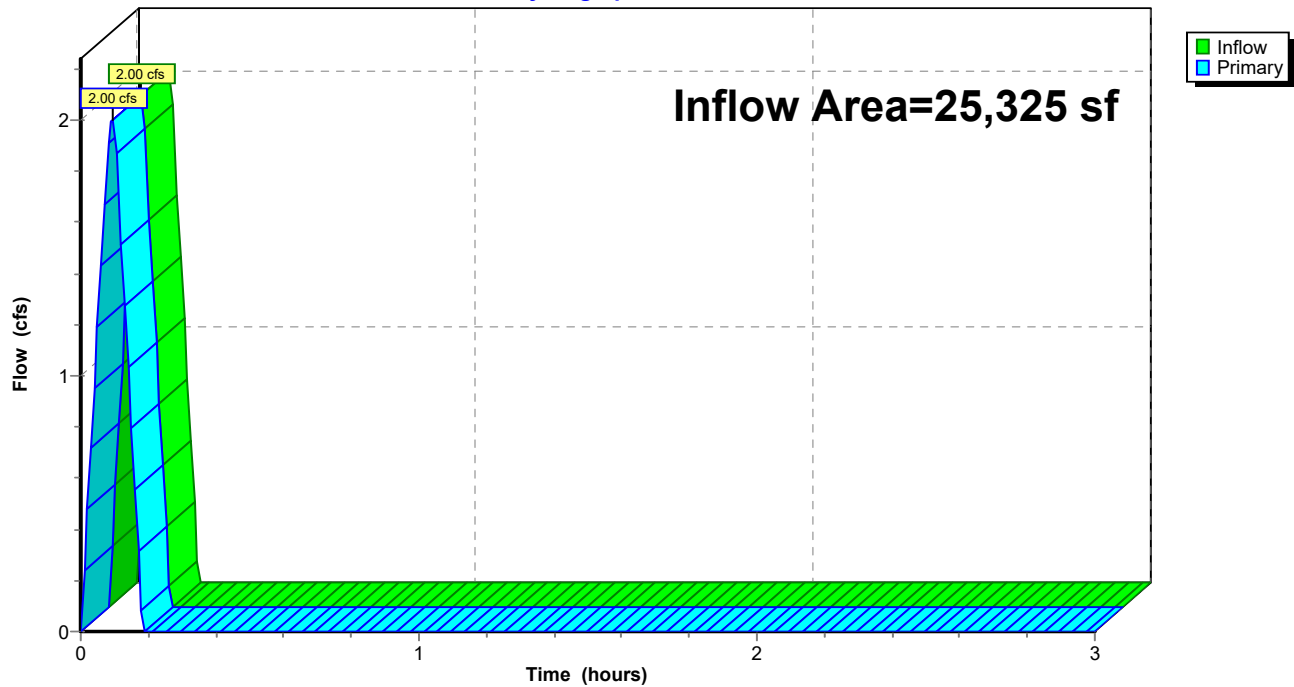
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 25,325 sf, 75.01% Impervious, Inflow Depth = 0.34" for 25-Year event
Inflow = 2.00 cfs @ 0.09 hrs, Volume= 716 cf
Primary = 2.00 cfs @ 0.09 hrs, Volume= 716 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Pond 6P: BMP D - MWS

Hydrograph



Hydrograph for Pond 6P: BMP D - MWS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	2.55	0.00		0.00
0.05	1.19		1.19	2.60	0.00		0.00
0.10	1.99		1.99	2.65	0.00		0.00
0.15	0.80		0.80	2.70	0.00		0.00
0.20	0.00		0.00	2.75	0.00		0.00
0.25	0.00		0.00	2.80	0.00		0.00
0.30	0.00		0.00	2.85	0.00		0.00
0.35	0.00		0.00	2.90	0.00		0.00
0.40	0.00		0.00	2.95	0.00		0.00
0.45	0.00		0.00	3.00	0.00		0.00
0.50	0.00		0.00				
0.55	0.00		0.00				
0.60	0.00		0.00				
0.65	0.00		0.00				
0.70	0.00		0.00				
0.75	0.00		0.00				
0.80	0.00		0.00				
0.85	0.00		0.00				
0.90	0.00		0.00				
0.95	0.00		0.00				
1.00	0.00		0.00				
1.05	0.00		0.00				
1.10	0.00		0.00				
1.15	0.00		0.00				
1.20	0.00		0.00				
1.25	0.00		0.00				
1.30	0.00		0.00				
1.35	0.00		0.00				
1.40	0.00		0.00				
1.45	0.00		0.00				
1.50	0.00		0.00				
1.55	0.00		0.00				
1.60	0.00		0.00				
1.65	0.00		0.00				
1.70	0.00		0.00				
1.75	0.00		0.00				
1.80	0.00		0.00				
1.85	0.00		0.00				
1.90	0.00		0.00				
1.95	0.00		0.00				
2.00	0.00		0.00				
2.05	0.00		0.00				
2.10	0.00		0.00				
2.15	0.00		0.00				
2.20	0.00		0.00				
2.25	0.00		0.00				
2.30	0.00		0.00				
2.35	0.00		0.00				
2.40	0.00		0.00				
2.45	0.00		0.00				
2.50	0.00		0.00				

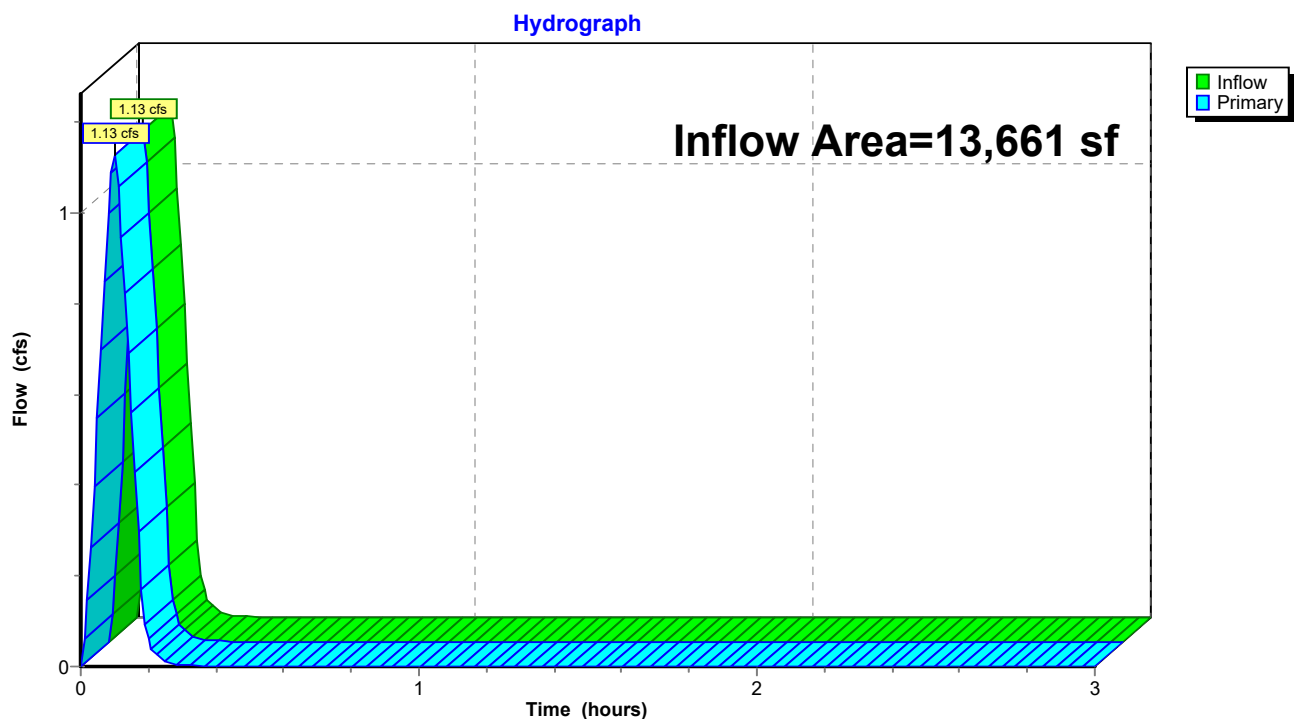
Summary for Pond 10P: OUTLET 1 - Parkway Culvert

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 13,661 sf, 84.09% Impervious, Inflow Depth = 0.36" for 25-Year event
Inflow = 1.13 cfs @ 0.10 hrs, Volume= 414 cf
Primary = 1.13 cfs @ 0.10 hrs, Volume= 414 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Pond 10P: OUTLET 1 - Parkway Culvert



OUTLET 1 $Q_{25} = 1.13$ CFS

Hydrograph for Pond 10P: OUTLET 1 - Parkway Culvert

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	2.55	0.00		0.00
0.05	0.55		0.55	2.60	0.00		0.00
0.10	1.13		1.13	2.65	0.00		0.00
0.15	0.56		0.56	2.70	0.00		0.00
0.20	0.06		0.06	2.75	0.00		0.00
0.25	0.01		0.01	2.80	0.00		0.00
0.30	0.00		0.00	2.85	0.00		0.00
0.35	0.00		0.00	2.90	0.00		0.00
0.40	0.00		0.00	2.95	0.00		0.00
0.45	0.00		0.00	3.00	0.00		0.00
0.50	0.00		0.00				
0.55	0.00		0.00				
0.60	0.00		0.00				
0.65	0.00		0.00				
0.70	0.00		0.00				
0.75	0.00		0.00				
0.80	0.00		0.00				
0.85	0.00		0.00				
0.90	0.00		0.00				
0.95	0.00		0.00				
1.00	0.00		0.00				
1.05	0.00		0.00				
1.10	0.00		0.00				
1.15	0.00		0.00				
1.20	0.00		0.00				
1.25	0.00		0.00				
1.30	0.00		0.00				
1.35	0.00		0.00				
1.40	0.00		0.00				
1.45	0.00		0.00				
1.50	0.00		0.00				
1.55	0.00		0.00				
1.60	0.00		0.00				
1.65	0.00		0.00				
1.70	0.00		0.00				
1.75	0.00		0.00				
1.80	0.00		0.00				
1.85	0.00		0.00				
1.90	0.00		0.00				
1.95	0.00		0.00				
2.00	0.00		0.00				
2.05	0.00		0.00				
2.10	0.00		0.00				
2.15	0.00		0.00				
2.20	0.00		0.00				
2.25	0.00		0.00				
2.30	0.00		0.00				
2.35	0.00		0.00				
2.40	0.00		0.00				
2.45	0.00		0.00				
2.50	0.00		0.00				

Summary for Pond 11P: Detention A

Inflow Area = 37,536 sf, 85.17% Impervious, Inflow Depth = 0.37" for 25-Year event
 Inflow = 3.22 cfs @ 0.10 hrs, Volume= 1,156 cf
 Outflow = 0.83 cfs @ 0.17 hrs, Volume= 1,017 cf, Atten= 74%, Lag= 4.3 min
 Primary = 0.83 cfs @ 0.17 hrs, Volume= 1,017 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 97.78' @ 0.17 hrs Surf.Area= 1,254 sf Storage= 886 cf

Plug-Flow detention time= 15.0 min calculated for 1,014 cf (88% of inflow)
 Center-of-Mass det. time= 14.9 min (20.9 - 6.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	96.50'	831 cf	8.25'W x 151.99'L x 2.00'H Field A 2,508 cf Overall - 431 cf Embedded = 2,077 cf x 40.0% Voids
#2A	97.00'	431 cf	ADS_StormTech SC-160LP +Cap x 63 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 63 Chambers in 3 Rows
		1,262 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	96.76'	6.0" Round Culvert L= 16.4' Ke= 0.500 Inlet / Outlet Invert= 96.76' / 96.60' S= 0.0098 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.83 cfs @ 0.17 hrs HW=97.78' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 0.83 cfs @ 4.22 fps)

Pond 11P: Detention A - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-160LP+Cap (ADS StormTech®SC-160LP with cap length)

Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf

Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap

21 Chambers/Row x 7.12' Long +0.23' Cap Length x 2 = 149.99' Row Length +12.0" End Stone x 2 =
151.99' Base Length

3 Rows x 25.0" Wide + 12.0" Side Stone x 2 = 8.25' Base Width

6.0" Base + 12.0" Chamber Height + 6.0" Cover = 2.00' Field Height

63 Chambers x 6.8 cf = 430.7 cf Chamber Storage

2,507.8 cf Field - 430.7 cf Chambers = 2,077.1 cf Stone x 40.0% Voids = 830.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,261.5 cf = 0.029 af

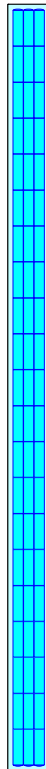
Overall Storage Efficiency = 50.3%

Overall System Size = 151.99' x 8.25' x 2.00'

63 Chambers

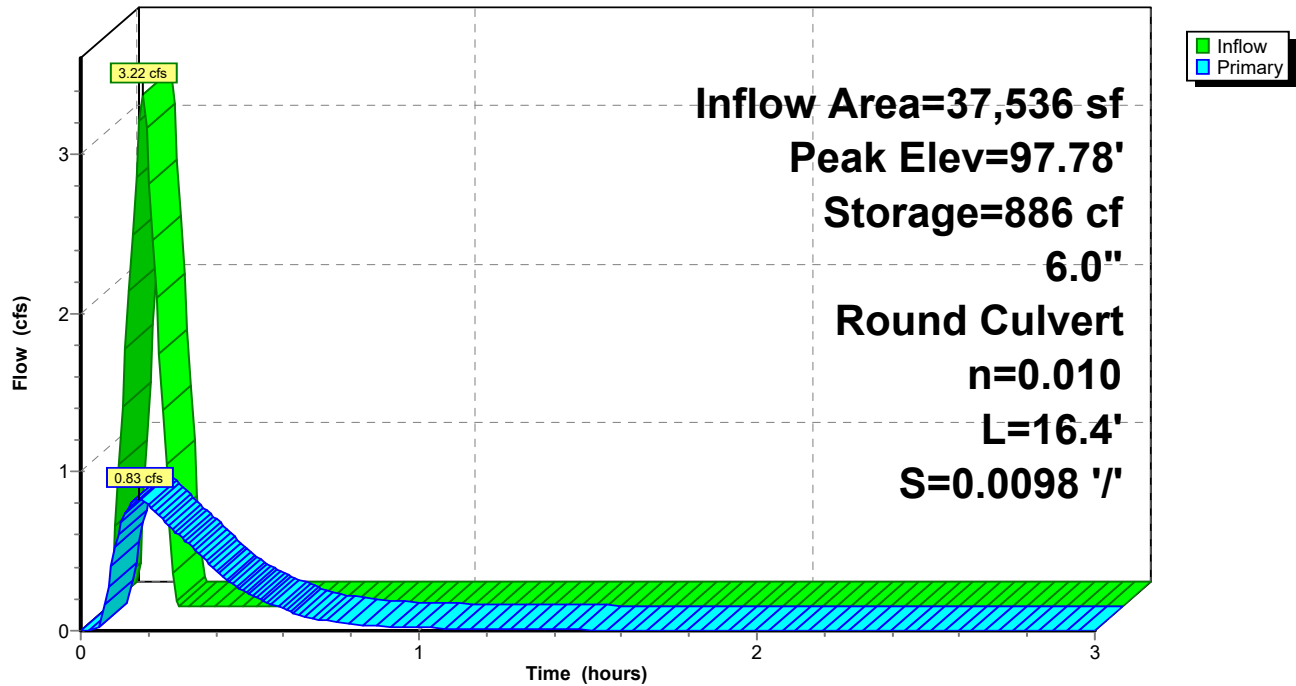
92.9 cy Field

76.9 cy Stone



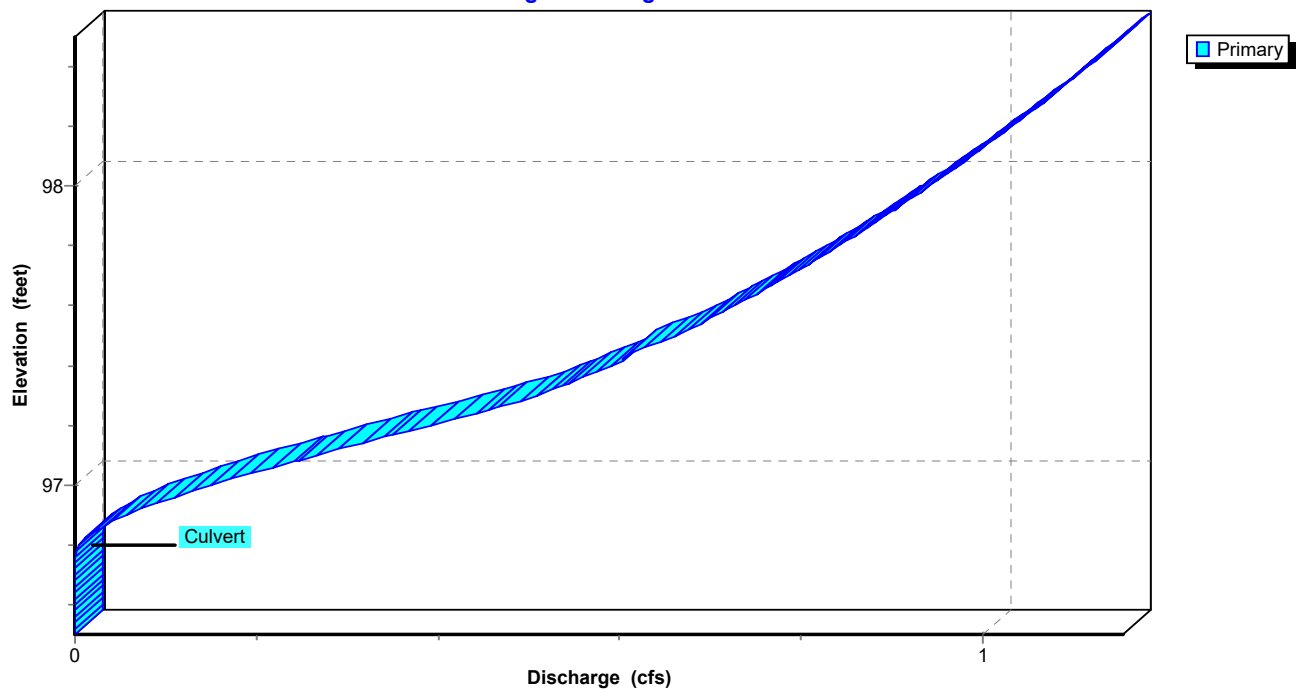
Pond 11P: Detention A

Hydrograph

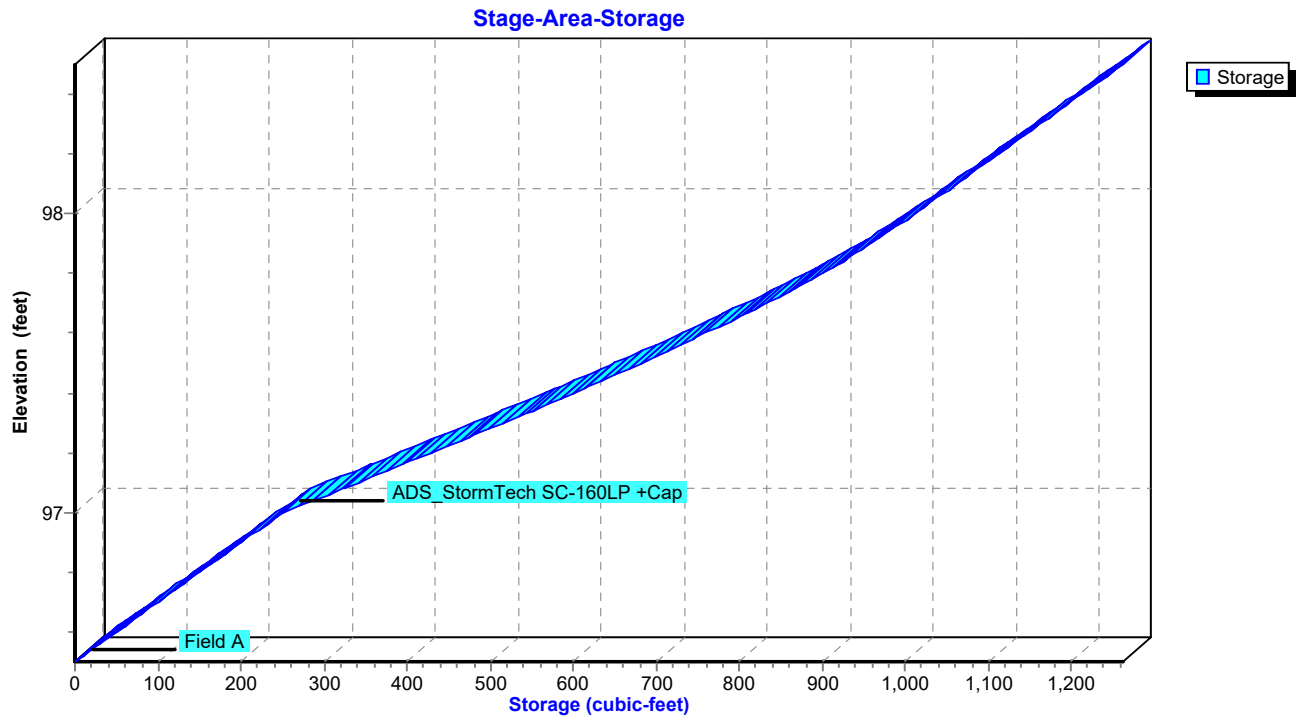


Pond 11P: Detention A

Stage-Discharge



Pond 11P: Detention A



Hydrograph for Pond 11P: Detention A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	96.50	0.00
0.10	3.22	537	97.32	0.53
0.20	0.04	841	97.71	0.79
0.30	0.00	596	97.39	0.59
0.40	0.00	421	97.19	0.38
0.50	0.00	314	97.07	0.23
0.60	0.00	248	96.99	0.14
0.70	0.00	210	96.92	0.07
0.80	0.00	190	96.88	0.04
0.90	0.00	178	96.85	0.03
1.00	0.00	170	96.84	0.02
1.10	0.00	164	96.83	0.01
1.20	0.00	160	96.82	0.01
1.30	0.00	156	96.81	0.01
1.40	0.00	153	96.81	0.01
1.50	0.00	151	96.80	0.01
1.60	0.00	150	96.80	0.00
1.70	0.00	148	96.80	0.00
1.80	0.00	147	96.79	0.00
1.90	0.00	145	96.79	0.00
2.00	0.00	144	96.79	0.00
2.10	0.00	144	96.79	0.00
2.20	0.00	143	96.78	0.00
2.30	0.00	142	96.78	0.00
2.40	0.00	142	96.78	0.00
2.50	0.00	141	96.78	0.00
2.60	0.00	141	96.78	0.00
2.70	0.00	140	96.78	0.00
2.80	0.00	140	96.78	0.00
2.90	0.00	139	96.78	0.00
3.00	0.00	139	96.78	0.00

Stage-Discharge for Pond 11P: Detention A

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
96.50	0.00	97.01	0.16	97.52	0.68	98.03	0.95
96.51	0.00	97.02	0.17	97.53	0.68	98.04	0.96
96.52	0.00	97.03	0.18	97.54	0.69	98.05	0.96
96.53	0.00	97.04	0.19	97.55	0.69	98.06	0.97
96.54	0.00	97.05	0.21	97.56	0.70	98.07	0.97
96.55	0.00	97.06	0.22	97.57	0.71	98.08	0.98
96.56	0.00	97.07	0.23	97.58	0.71	98.09	0.98
96.57	0.00	97.08	0.24	97.59	0.72	98.10	0.99
96.58	0.00	97.09	0.25	97.60	0.73	98.11	0.99
96.59	0.00	97.10	0.27	97.61	0.73	98.12	1.00
96.60	0.00	97.11	0.28	97.62	0.74	98.13	1.00
96.61	0.00	97.12	0.29	97.63	0.74	98.14	1.00
96.62	0.00	97.13	0.30	97.64	0.75	98.15	1.01
96.63	0.00	97.14	0.32	97.65	0.76	98.16	1.01
96.64	0.00	97.15	0.33	97.66	0.76	98.17	1.02
96.65	0.00	97.16	0.34	97.67	0.77	98.18	1.02
96.66	0.00	97.17	0.35	97.68	0.77	98.19	1.03
96.67	0.00	97.18	0.37	97.69	0.78	98.20	1.03
96.68	0.00	97.19	0.38	97.70	0.79	98.21	1.04
96.69	0.00	97.20	0.39	97.71	0.79	98.22	1.04
96.70	0.00	97.21	0.41	97.72	0.80	98.23	1.04
96.71	0.00	97.22	0.42	97.73	0.80	98.24	1.05
96.72	0.00	97.23	0.43	97.74	0.81	98.25	1.05
96.73	0.00	97.24	0.44	97.75	0.81	98.26	1.06
96.74	0.00	97.25	0.46	97.76	0.82	98.27	1.06
96.75	0.00	97.26	0.47	97.77	0.82	98.28	1.07
96.76	0.00	97.27	0.48	97.78	0.83	98.29	1.07
96.77	0.00	97.28	0.49	97.79	0.83	98.30	1.07
96.78	0.00	97.29	0.50	97.80	0.84	98.31	1.08
96.79	0.00	97.30	0.51	97.81	0.85	98.32	1.08
96.80	0.00	97.31	0.52	97.82	0.85	98.33	1.09
96.81	0.01	97.32	0.53	97.83	0.86	98.34	1.09
96.82	0.01	97.33	0.53	97.84	0.86	98.35	1.09
96.83	0.02	97.34	0.54	97.85	0.87	98.36	1.10
96.84	0.02	97.35	0.55	97.86	0.87	98.37	1.10
96.85	0.02	97.36	0.56	97.87	0.88	98.38	1.11
96.86	0.03	97.37	0.57	97.88	0.88	98.39	1.11
96.87	0.04	97.38	0.58	97.89	0.89	98.40	1.11
96.88	0.04	97.39	0.58	97.90	0.89	98.41	1.12
96.89	0.05	97.40	0.59	97.91	0.90	98.42	1.12
96.90	0.06	97.41	0.60	97.92	0.90	98.43	1.13
96.91	0.07	97.42	0.60	97.93	0.91	98.44	1.13
96.92	0.07	97.43	0.60	97.94	0.91	98.45	1.13
96.93	0.08	97.44	0.61	97.95	0.92	98.46	1.14
96.94	0.09	97.45	0.62	97.96	0.92	98.47	1.14
96.95	0.10	97.46	0.63	97.97	0.93	98.48	1.15
96.96	0.11	97.47	0.64	97.98	0.93	98.49	1.15
96.97	0.12	97.48	0.65	97.99	0.94	98.50	1.15
96.98	0.13	97.49	0.65	98.00	0.94		
96.99	0.14	97.50	0.66	98.01	0.95		
97.00	0.15	97.51	0.67	98.02	0.95		

Summary for Pond 13P: Detention B

[44] Hint: Outlet device #1 is below defined storage

[62] Hint: Exceeded Reach 9R OUTLET depth by 0.06' @ 0.20 hrs

Inflow Area = 60,995 sf, 83.46% Impervious, Inflow Depth = 0.36" for 25-Year event
 Inflow = 5.13 cfs @ 0.10 hrs, Volume= 1,840 cf
 Outflow = 1.63 cfs @ 0.16 hrs, Volume= 1,828 cf, Atten= 68%, Lag= 3.9 min
 Primary = 1.63 cfs @ 0.16 hrs, Volume= 1,828 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 98.08' @ 0.16 hrs Surf.Area= 1,791 sf Storage= 1,290 cf

Plug-Flow detention time= 13.1 min calculated for 1,822 cf (99% of inflow)

Center-of-Mass det. time= 13.5 min (19.4 - 5.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	96.80'	1,170 cf	10.33'W x 173.35'L x 2.00'H Field A 3,582 cf Overall - 656 cf Embedded = 2,926 cf x 40.0% Voids
#2A	97.30'	656 cf	ADS_StormTech SC-160LP +Cap x 96 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 96 Chambers in 4 Rows
		1,827 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	96.79'	8.0" Round Culvert L= 21.2' Ke= 0.500 Inlet / Outlet Invert= 96.79' / 96.68' S= 0.0052 ' / Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=1.62 cfs @ 0.16 hrs HW=98.08' (Free Discharge)↑ **1=Culvert** (Barrel Controls 1.62 cfs @ 4.65 fps)

Pond 13P: Detention B - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-160LP+Cap (ADS StormTech®SC-160LP with cap length)

Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf

Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap

24 Chambers/Row x 7.12' Long +0.23' Cap Length x 2 = 171.35' Row Length +12.0" End Stone x 2 =
173.35' Base Length

4 Rows x 25.0" Wide + 12.0" Side Stone x 2 = 10.33' Base Width

6.0" Base + 12.0" Chamber Height + 6.0" Cover = 2.00' Field Height

96 Chambers x 6.8 cf = 656.4 cf Chamber Storage

3,582.5 cf Field - 656.4 cf Chambers = 2,926.1 cf Stone x 40.0% Voids = 1,170.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,826.8 cf = 0.042 af

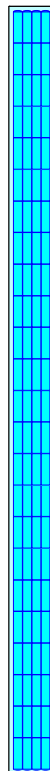
Overall Storage Efficiency = 51.0%

Overall System Size = 173.35' x 10.33' x 2.00'

96 Chambers

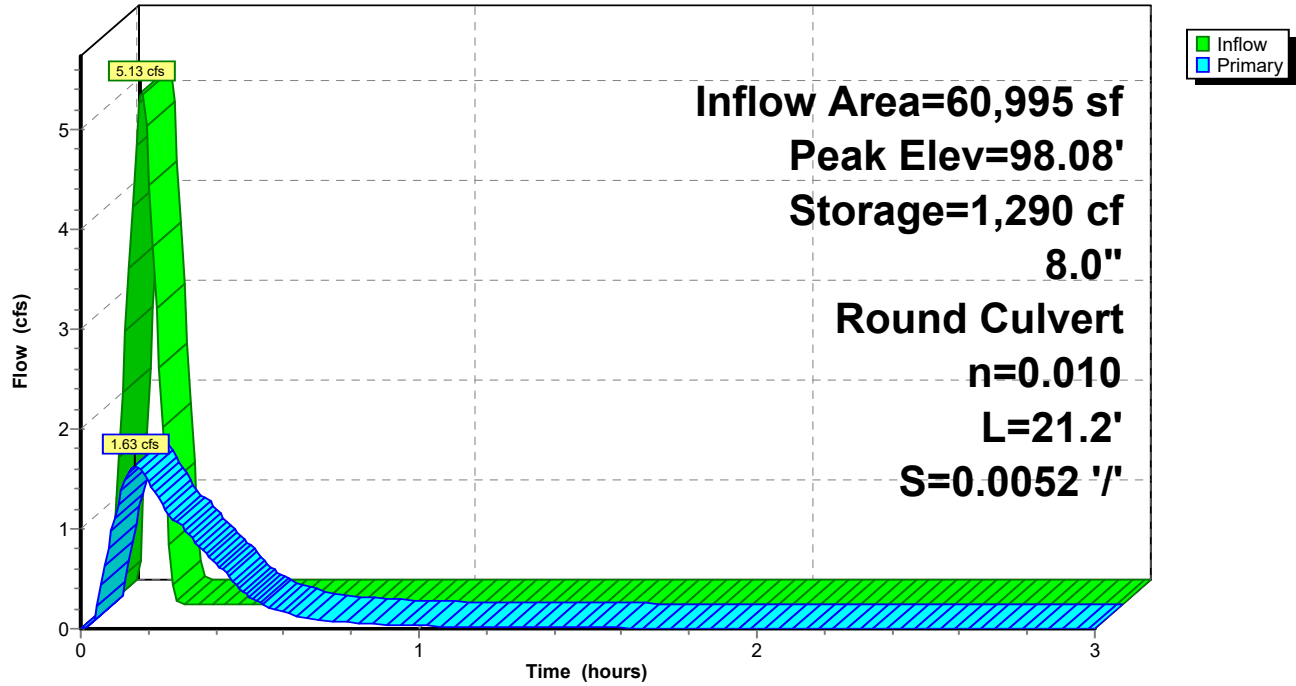
132.7 cy Field

108.4 cy Stone



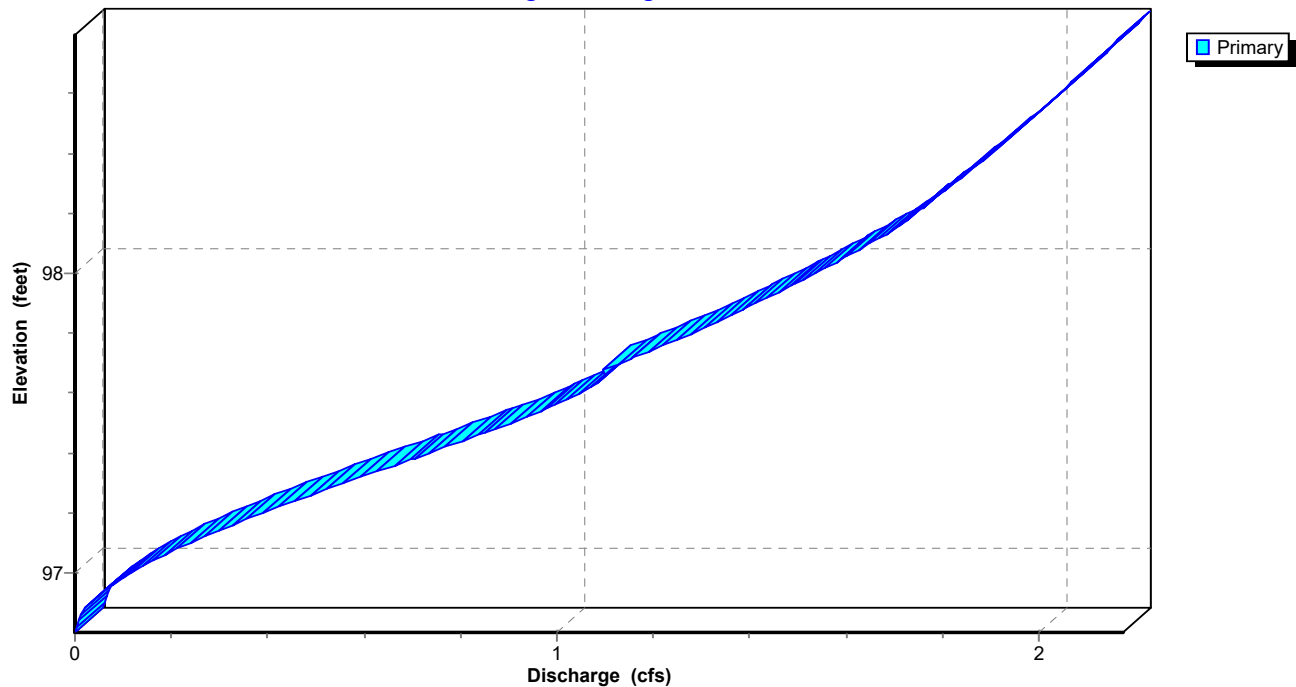
Pond 13P: Detention B

Hydrograph

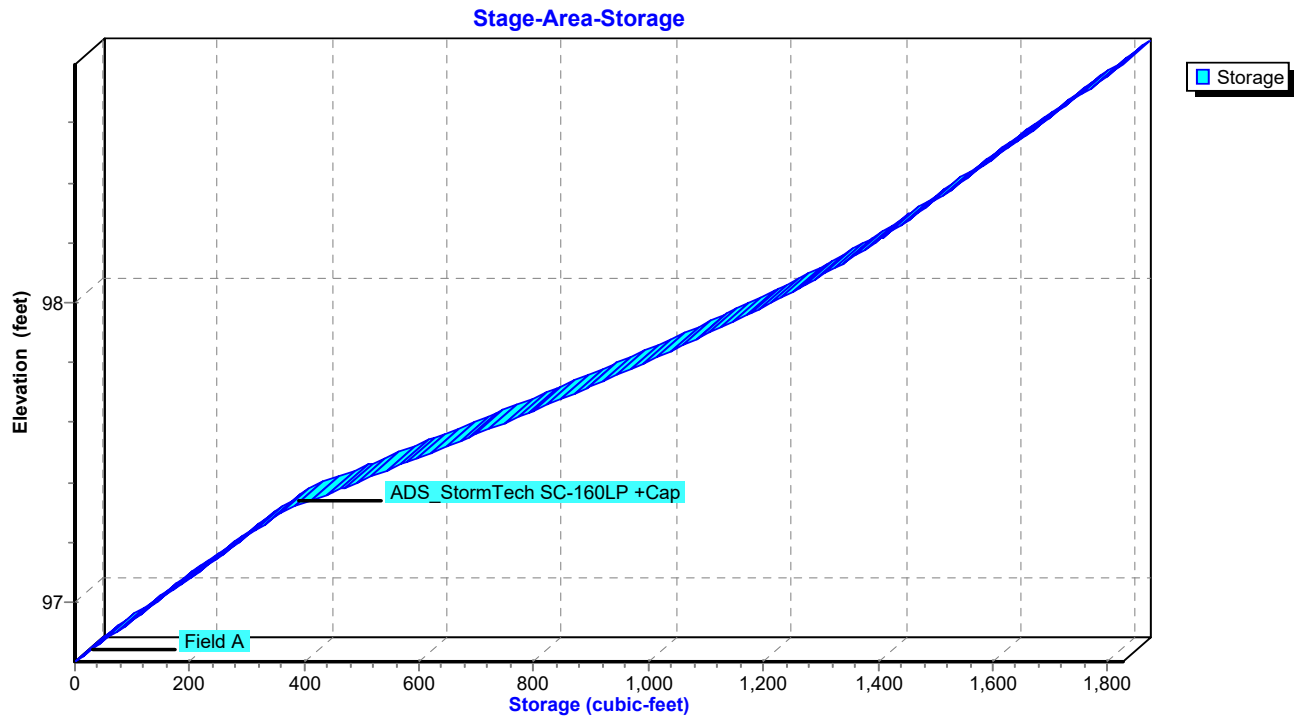


Pond 13P: Detention B

Stage-Discharge



Pond 13P: Detention B



Hydrograph for Pond 13P: Detention B

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	96.80	0.00
0.10	5.11	832	97.67	1.10
0.20	0.04	1,165	97.96	1.48
0.30	0.00	728	97.58	1.03
0.40	0.00	428	97.35	0.65
0.50	0.00	254	97.16	0.32
0.60	0.00	172	97.04	0.16
0.70	0.00	127	96.98	0.10
0.80	0.00	99	96.94	0.06
0.90	0.00	81	96.91	0.04
1.00	0.00	68	96.89	0.03
1.10	0.00	58	96.88	0.02
1.20	0.00	51	96.87	0.02
1.30	0.00	45	96.86	0.01
1.40	0.00	40	96.86	0.01
1.50	0.00	36	96.85	0.01
1.60	0.00	32	96.85	0.01
1.70	0.00	30	96.84	0.01
1.80	0.00	27	96.84	0.01
1.90	0.00	25	96.83	0.01
2.00	0.00	23	96.83	0.01
2.10	0.00	21	96.83	0.00
2.20	0.00	20	96.83	0.00
2.30	0.00	18	96.83	0.00
2.40	0.00	17	96.82	0.00
2.50	0.00	16	96.82	0.00
2.60	0.00	15	96.82	0.00
2.70	0.00	14	96.82	0.00
2.80	0.00	13	96.82	0.00
2.90	0.00	13	96.82	0.00
3.00	0.00	12	96.82	0.00

Stage-Discharge for Pond 13P: Detention B

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
96.80	0.00	97.31	0.58	97.82	1.31	98.33	1.85
96.81	0.00	97.32	0.59	97.83	1.32	98.34	1.85
96.82	0.00	97.33	0.61	97.84	1.33	98.35	1.86
96.83	0.00	97.34	0.63	97.85	1.35	98.36	1.87
96.84	0.01	97.35	0.65	97.86	1.36	98.37	1.88
96.85	0.01	97.36	0.66	97.87	1.37	98.38	1.88
96.86	0.01	97.37	0.68	97.88	1.39	98.39	1.89
96.87	0.02	97.38	0.70	97.89	1.40	98.40	1.90
96.88	0.02	97.39	0.72	97.90	1.41	98.41	1.91
96.89	0.03	97.40	0.73	97.91	1.43	98.42	1.91
96.90	0.03	97.41	0.75	97.92	1.44	98.43	1.92
96.91	0.04	97.42	0.77	97.93	1.45	98.44	1.93
96.92	0.05	97.43	0.79	97.94	1.46	98.45	1.94
96.93	0.05	97.44	0.80	97.95	1.47	98.46	1.94
96.94	0.06	97.45	0.82	97.96	1.49	98.47	1.95
96.95	0.07	97.46	0.84	97.97	1.50	98.48	1.96
96.96	0.08	97.47	0.86	97.98	1.51	98.49	1.96
96.97	0.09	97.48	0.87	97.99	1.52	98.50	1.97
96.98	0.10	97.49	0.89	98.00	1.53	98.51	1.98
96.99	0.11	97.50	0.90	98.01	1.55	98.52	1.99
97.00	0.12	97.51	0.92	98.02	1.56	98.53	1.99
97.01	0.13	97.52	0.94	98.03	1.57	98.54	2.00
97.02	0.14	97.53	0.95	98.04	1.58	98.55	2.01
97.03	0.15	97.54	0.97	98.05	1.59	98.56	2.01
97.04	0.16	97.55	0.98	98.06	1.60	98.57	2.02
97.05	0.18	97.56	1.00	98.07	1.61	98.58	2.03
97.06	0.19	97.57	1.01	98.08	1.63	98.59	2.04
97.07	0.20	97.58	1.02	98.09	1.64	98.60	2.04
97.08	0.21	97.59	1.04	98.10	1.65	98.61	2.05
97.09	0.23	97.60	1.05	98.11	1.66	98.62	2.06
97.10	0.24	97.61	1.06	98.12	1.67	98.63	2.06
97.11	0.25	97.62	1.07	98.13	1.68	98.64	2.07
97.12	0.27	97.63	1.08	98.14	1.69	98.65	2.08
97.13	0.28	97.64	1.09	98.15	1.70	98.66	2.08
97.14	0.30	97.65	1.10	98.16	1.71	98.67	2.09
97.15	0.31	97.66	1.10	98.17	1.72	98.68	2.10
97.16	0.33	97.67	1.10	98.18	1.73	98.69	2.10
97.17	0.34	97.68	1.10	98.19	1.74	98.70	2.11
97.18	0.36	97.69	1.11	98.20	1.74	98.71	2.12
97.19	0.37	97.70	1.13	98.21	1.75	98.72	2.12
97.20	0.39	97.71	1.14	98.22	1.76	98.73	2.13
97.21	0.41	97.72	1.16	98.23	1.77	98.74	2.14
97.22	0.42	97.73	1.18	98.24	1.78	98.75	2.14
97.23	0.44	97.74	1.19	98.25	1.78	98.76	2.15
97.24	0.46	97.75	1.21	98.26	1.79	98.77	2.16
97.25	0.47	97.76	1.22	98.27	1.80	98.78	2.16
97.26	0.49	97.77	1.24	98.28	1.81	98.79	2.17
97.27	0.51	97.78	1.25	98.29	1.82	98.80	2.18
97.28	0.52	97.79	1.26	98.30	1.82		
97.29	0.54	97.80	1.28	98.31	1.83		
97.30	0.56	97.81	1.29	98.32	1.84		

Time span=0.00-3.00 hrs, dt=0.01 hrs, 301 points
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment8S: DA-3	Runoff Area=12,295 sf 69.54% Impervious Runoff Depth=0.42" Flow Length=230' Slope=0.0240 '/' Tc=5.0 min C=0.74 Runoff=1.20 cfs 431 cf
Subcatchment14S: DA 6	Runoff Area=11,472 sf 80.52% Impervious Runoff Depth=0.46" Tc=5.0 min C=0.81 Runoff=1.23 cfs 440 cf
SubcatchmentA: DA-1A	Runoff Area=8,600 sf 74.73% Impervious Runoff Depth=0.44" Tc=5.0 min C=0.77 Runoff=0.87 cfs 313 cf
SubcatchmentA.1: DA-1B	Runoff Area=5,061 sf 100.00% Impervious Runoff Depth=0.54" Tc=5.0 min C=0.95 Runoff=0.64 cfs 228 cf
SubcatchmentB: DA-4	Runoff Area=37,536 sf 85.17% Impervious Runoff Depth=0.48" Flow Length=295' Slope=0.0110 '/' Tc=5.4 min C=0.85 Runoff=4.25 cfs 1,510 cf
SubcatchmentC: DA-2	Runoff Area=37,228 sf 88.96% Impervious Runoff Depth=0.49" Tc=5.0 min C=0.87 Runoff=4.28 cfs 1,533 cf
SubcatchmentD: DA-5	Runoff Area=25,325 sf 75.01% Impervious Runoff Depth=0.44" Flow Length=255' Slope=0.0280 '/' Tc=5.0 min C=0.78 Runoff=2.61 cfs 935 cf
Reach 5R: (new Reach)	Avg. Flow Depth=0.76' Max Vel=7.31 fps Inflow=4.71 cfs 4,696 cf 12.0" Round Pipe n=0.009 L=12.4' S=0.0097 '/' Capacity=5.06 cfs Outflow=4.66 cfs 4,697 cf
Reach 8R: (new Reach)	Avg. Flow Depth=0.00' Max Vel=0.00 fps 12.0" Round Pipe n=0.010 L=88.0' S=0.0249 '/' Capacity=7.31 cfs Outflow=0.00 cfs 0 cf
Reach 9R: SD Pipe	Avg. Flow Depth=0.74' Max Vel=6.42 fps Inflow=6.71 cfs 2,403 cf 24.0" Round Pipe n=0.009 L=60.6' S=0.0051 '/' Capacity=23.37 cfs Outflow=6.70 cfs 2,403 cf
Reach 12R: (new Reach)	Avg. Flow Depth=0.58' Max Vel=9.05 fps Inflow=4.25 cfs 1,510 cf 12.0" Round Pipe n=0.010 L=75.0' S=0.0211 '/' Capacity=6.72 cfs Outflow=4.21 cfs 1,510 cf
Pond 1P: BMP C - MWS	Inflow=4.25 cfs 1,510 cf Primary=4.25 cfs 1,510 cf
Pond 2P: BMP B - MWS	Peak Elev=100.68' Inflow=0.64 cfs 280 cf 4.0" Round Culvert n=0.009 L=21.2' S=0.0047 '/' Outflow=0.64 cfs 280 cf
Pond 3P: OUTLET 2 - 12" Pipe	Peak Elev=98.32' Inflow=4.66 cfs 4,697 cf 12.0" Round Culvert n=0.013 L=364.8' S=0.0167 '/' Outflow=4.66 cfs 4,697 cf
Pond 4P: BMP A - Biofiltration Basin	Peak Elev=106.09' Storage=46 cf Inflow=0.87 cfs 313 cf 24.0" x 4.0" Box Culvert n=0.009 L=11.2' S=0.0214 '/' Outflow=0.85 cfs 313 cf
Pond 5P: Diversion Manhole	Peak Elev=100.84' Inflow=6.71 cfs 2,403 cf Primary=0.64 cfs 280 cf Secondary=6.07 cfs 2,123 cf Outflow=6.71 cfs 2,403 cf

Pond 6P: BMP D - MWS

Inflow=2.61 cfs 935 cf
Primary=2.61 cfs 935 cf

Pond 10P: OUTLET 1 - Parkway Culvert

Inflow=1.48 cfs 541 cf
Primary=1.48 cfs 541 cf

Pond 11P: Detention A

Peak Elev=98.29' Storage=1,155 cf Inflow=4.21 cfs 1,510 cf
6.0" Round Culvert n=0.010 L=16.4' S=0.0098 '/ Outflow=1.07 cfs 1,371 cf

Pond 13P: Detention B

Peak Elev=98.62' Storage=1,699 cf Inflow=6.70 cfs 2,403 cf
8.0" Round Culvert n=0.010 L=21.2' S=0.0052 '/ Outflow=2.06 cfs 2,391 cf

Total Runoff Area = 137,517 sf Runoff Volume = 5,388 cf Average Runoff Depth = 0.47"
17.57% Pervious = 24,157 sf 82.43% Impervious = 113,360 sf

Summary for Subcatchment 8S: DA-3

Runoff = 1.20 cfs @ 0.09 hrs, Volume= 431 cf, Depth= 0.42"

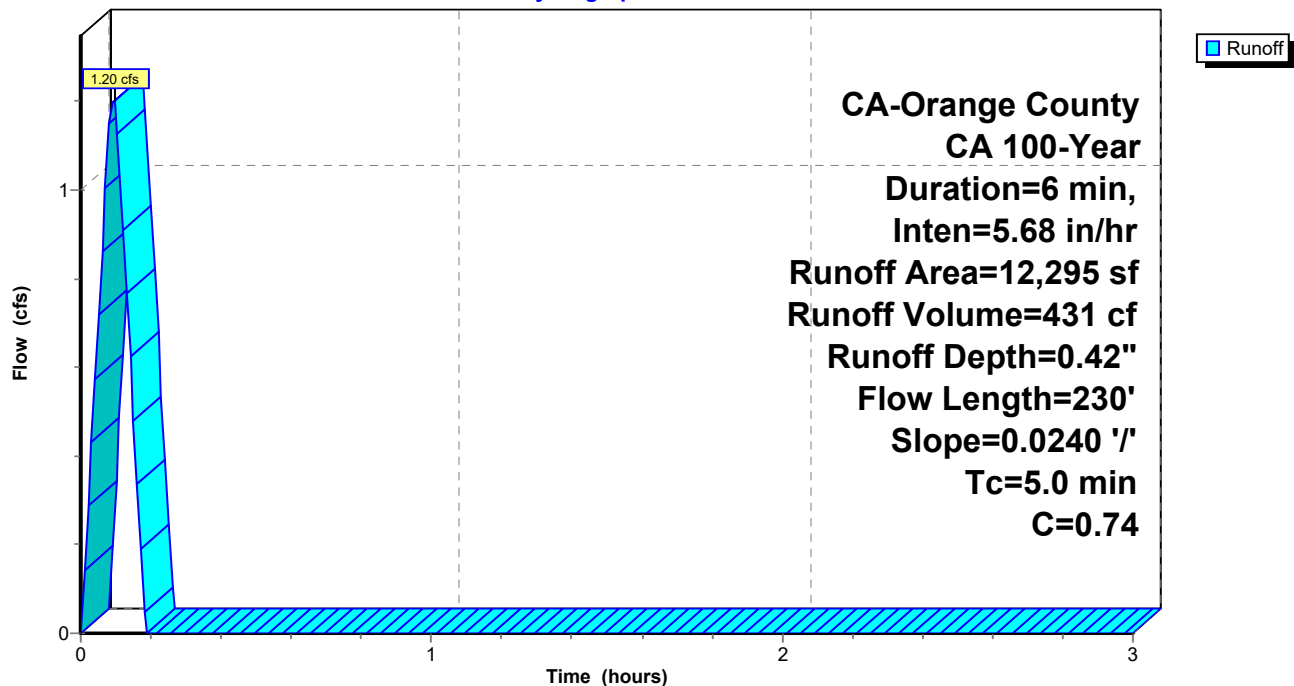
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
CA-Orange County, CA 100-Year Duration=6 min, Inten=5.68 in/hr

Area (sf)	C	Description
8,550	0.95	impervious
3,745	0.25	pervious
12,295	0.74	Weighted Average
3,745		30.46% Pervious Area
8,550		69.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	230	0.0240	1.17		Sheet Flow, n= 0.015 P2= 2.37"
3.3	230	Total, Increased to minimum Tc = 5.0 min			

Subcatchment 8S: DA-3

Hydrograph



Hydrograph for Subcatchment 8S: DA-3

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.29	1.04	0.00	2.06	0.00
0.04	0.57	1.06	0.00	2.08	0.00
0.06	0.86	1.08	0.00	2.10	0.00
0.08	1.15	1.10	0.00	2.12	0.00
0.10	1.20	1.12	0.00	2.14	0.00
0.12	0.91	1.14	0.00	2.16	0.00
0.14	0.62	1.16	0.00	2.18	0.00
0.16	0.33	1.18	0.00	2.20	0.00
0.18	0.05	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment 14S: DA 6

Runoff = 1.23 cfs @ 0.09 hrs, Volume= 440 cf, Depth= 0.46"

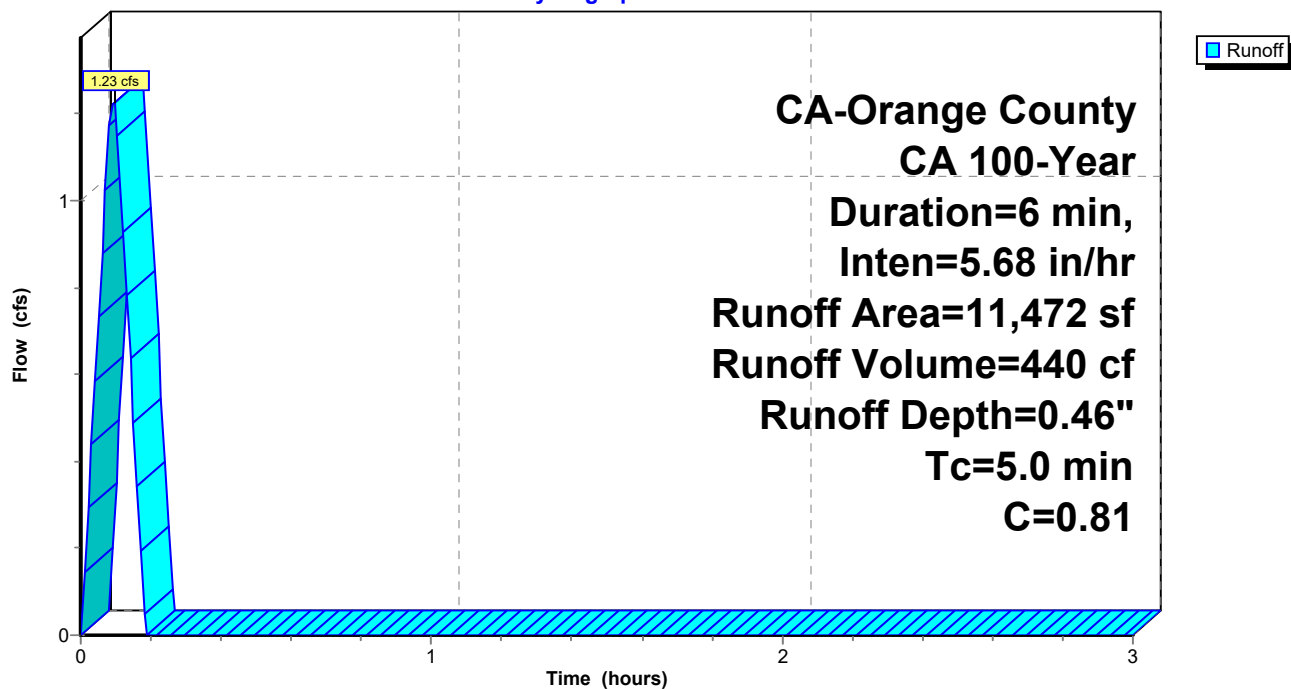
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 100-Year Duration=6 min, Inten=5.68 in/hr

Area (sf)	C	Description
9,237	0.95	impervious
2,235	0.25	pervious
11,472	0.81	Weighted Average
2,235		19.48% Pervious Area
9,237		80.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 14S: DA 6

Hydrograph



Hydrograph for Subcatchment 14S: DA 6

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.29	1.04	0.00	2.06	0.00
0.04	0.59	1.06	0.00	2.08	0.00
0.06	0.88	1.08	0.00	2.10	0.00
0.08	1.17	1.10	0.00	2.12	0.00
0.10	1.22	1.12	0.00	2.14	0.00
0.12	0.93	1.14	0.00	2.16	0.00
0.14	0.64	1.16	0.00	2.18	0.00
0.16	0.34	1.18	0.00	2.20	0.00
0.18	0.05	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment A: DA-1A

Runoff = 0.87 cfs @ 0.09 hrs, Volume= 313 cf, Depth= 0.44"

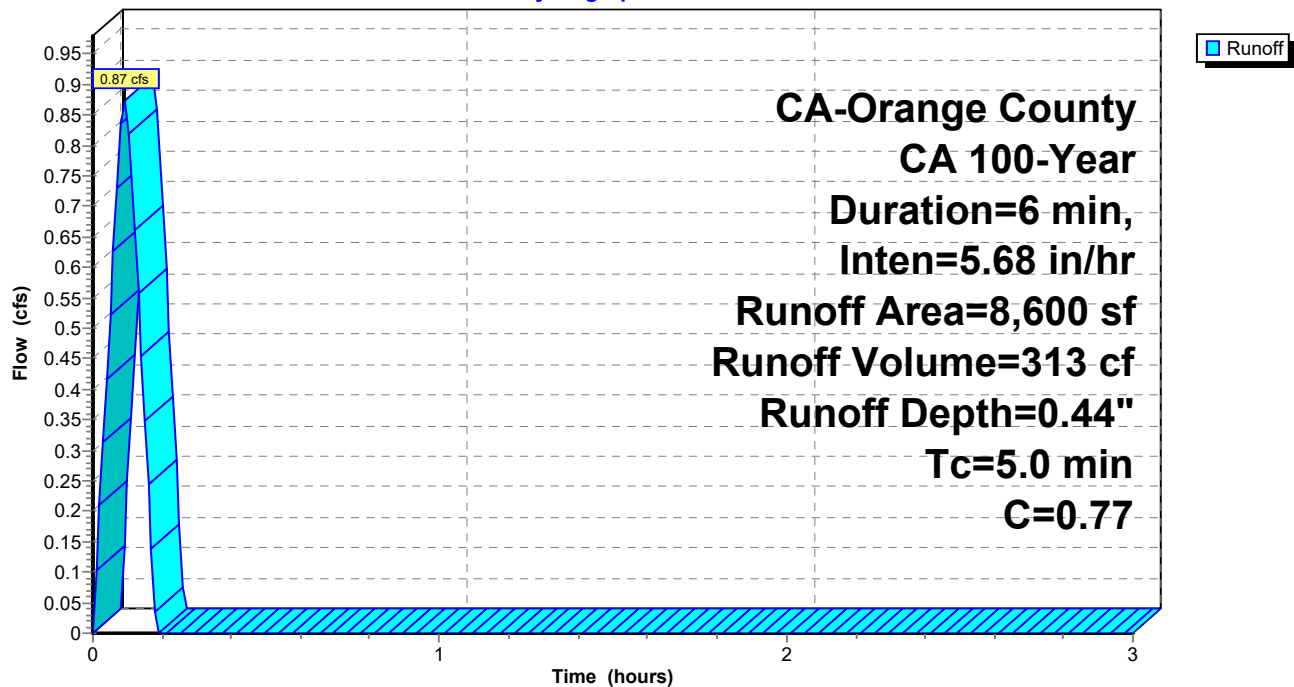
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
CA-Orange County, CA 100-Year Duration=6 min, Inten=5.68 in/hr

Area (sf)	C	Description
6,427	0.95	building, patio, sidewalk
2,173	0.25	landscaping
8,600	0.77	Weighted Average
2,173		25.27% Pervious Area
6,427		74.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment A: DA-1A

Hydrograph



Hydrograph for Subcatchment A: DA-1A

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.21	1.04	0.00	2.06	0.00
0.04	0.42	1.06	0.00	2.08	0.00
0.06	0.63	1.08	0.00	2.10	0.00
0.08	0.84	1.10	0.00	2.12	0.00
0.10	0.87	1.12	0.00	2.14	0.00
0.12	0.66	1.14	0.00	2.16	0.00
0.14	0.45	1.16	0.00	2.18	0.00
0.16	0.24	1.18	0.00	2.20	0.00
0.18	0.03	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment A.1: DA-1B

Runoff = 0.64 cfs @ 0.09 hrs, Volume= 228 cf, Depth= 0.54"

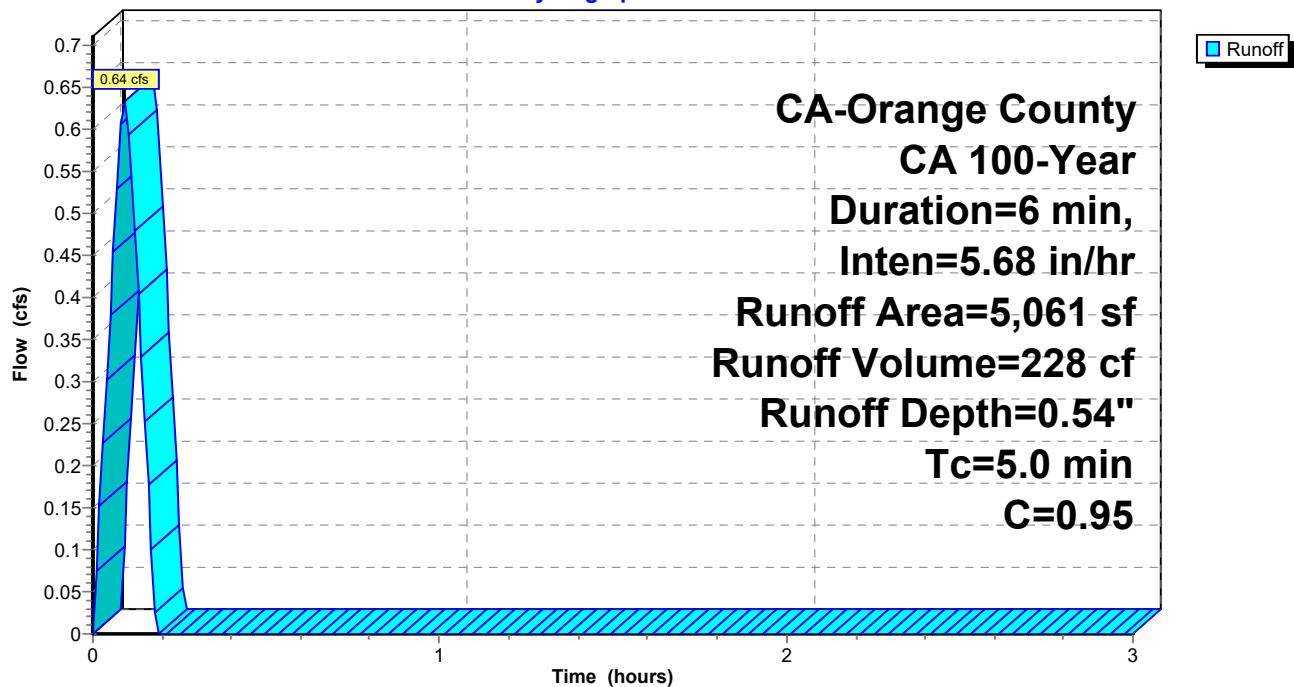
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 100-Year Duration=6 min, Inten=5.68 in/hr

Area (sf)	C	Description
5,061	0.95	STREET
5,061		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment A.1: DA-1B

Hydrograph



Hydrograph for Subcatchment A.1: DA-1B

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.15	1.04	0.00	2.06	0.00
0.04	0.30	1.06	0.00	2.08	0.00
0.06	0.46	1.08	0.00	2.10	0.00
0.08	0.61	1.10	0.00	2.12	0.00
0.10	0.63	1.12	0.00	2.14	0.00
0.12	0.48	1.14	0.00	2.16	0.00
0.14	0.33	1.16	0.00	2.18	0.00
0.16	0.18	1.18	0.00	2.20	0.00
0.18	0.03	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment B: DA-4

Runoff = 4.25 cfs @ 0.09 hrs, Volume= 1,510 cf, Depth= 0.48"

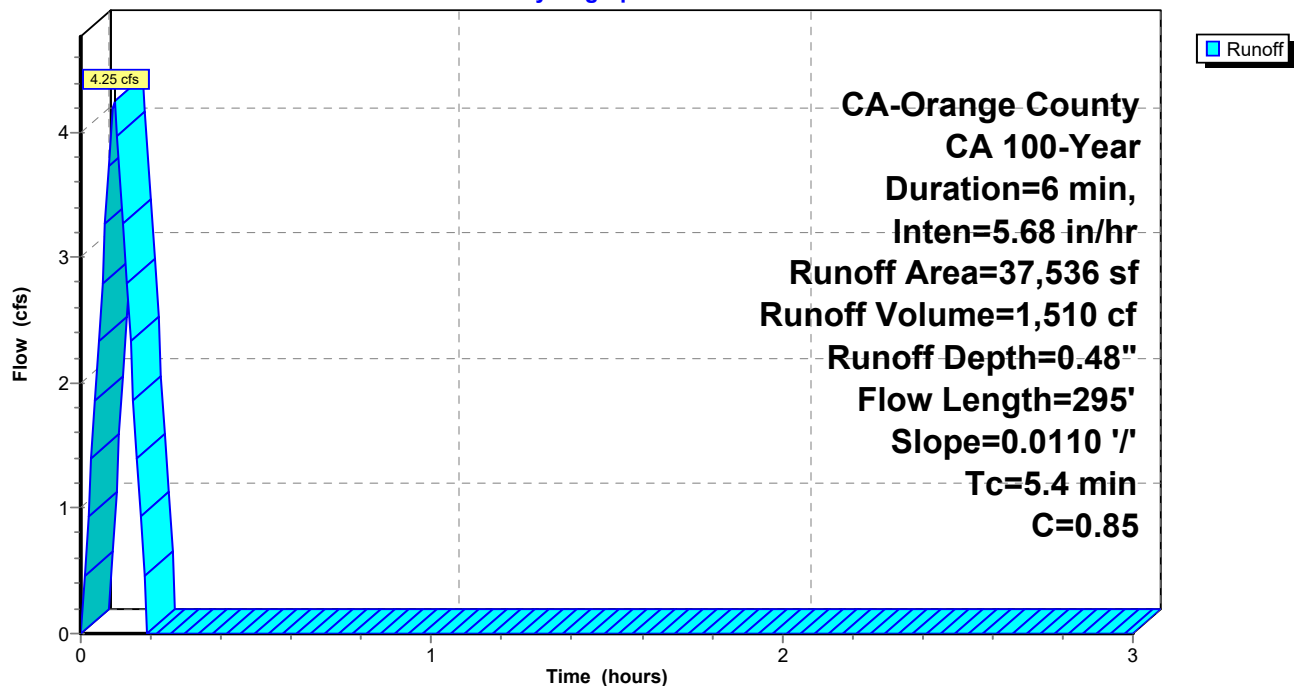
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 100-Year Duration=6 min, Inten=5.68 in/hr

Area (sf)	C	Description
31,969	0.95	impervious
5,567	0.25	pervious
37,536	0.85	Weighted Average
5,567		14.83% Pervious Area
31,969		85.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	295	0.0110	0.90		Sheet Flow, DA-4 n= 0.015 P2= 2.37"

Subcatchment B: DA-4

Hydrograph



Hydrograph for Subcatchment B: DA-4

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.93	1.04	0.00	2.06	0.00
0.04	1.86	1.06	0.00	2.08	0.00
0.06	2.80	1.08	0.00	2.10	0.00
0.08	3.73	1.10	0.00	2.12	0.00
0.10	4.19	1.12	0.00	2.14	0.00
0.12	3.26	1.14	0.00	2.16	0.00
0.14	2.33	1.16	0.00	2.18	0.00
0.16	1.40	1.18	0.00	2.20	0.00
0.18	0.47	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment C: DA-2

Runoff = 4.28 cfs @ 0.09 hrs, Volume= 1,533 cf, Depth= 0.49"

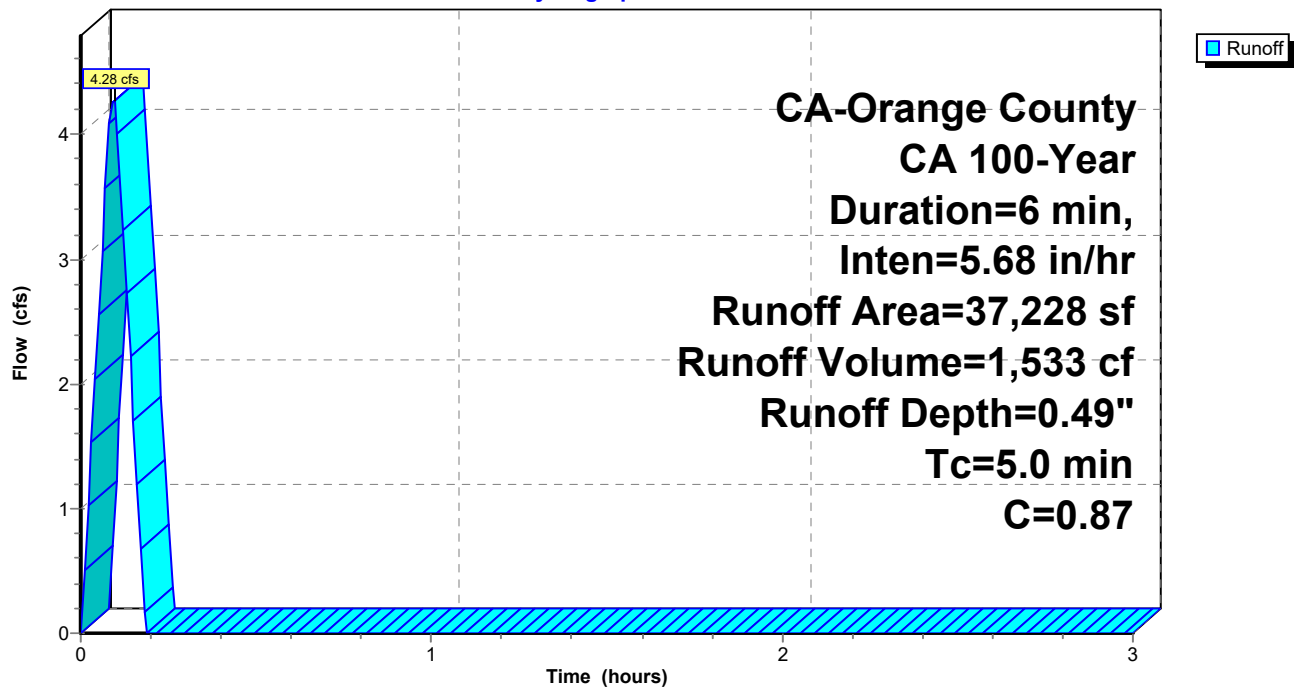
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 CA-Orange County, CA 100-Year Duration=6 min, Inten=5.68 in/hr

Area (sf)	C	Description
33,119	0.95	impervious
4,109	0.25	pervious
37,228	0.87	Weighted Average
4,109		11.04% Pervious Area
33,119		88.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment C: DA-2

Hydrograph



Hydrograph for Subcatchment C: DA-2

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	1.02	1.04	0.00	2.06	0.00
0.04	2.04	1.06	0.00	2.08	0.00
0.06	3.07	1.08	0.00	2.10	0.00
0.08	4.09	1.10	0.00	2.12	0.00
0.10	4.26	1.12	0.00	2.14	0.00
0.12	3.24	1.14	0.00	2.16	0.00
0.14	2.21	1.16	0.00	2.18	0.00
0.16	1.19	1.18	0.00	2.20	0.00
0.18	0.17	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Subcatchment D: DA-5

Runoff = 2.61 cfs @ 0.09 hrs, Volume= 935 cf, Depth= 0.44"

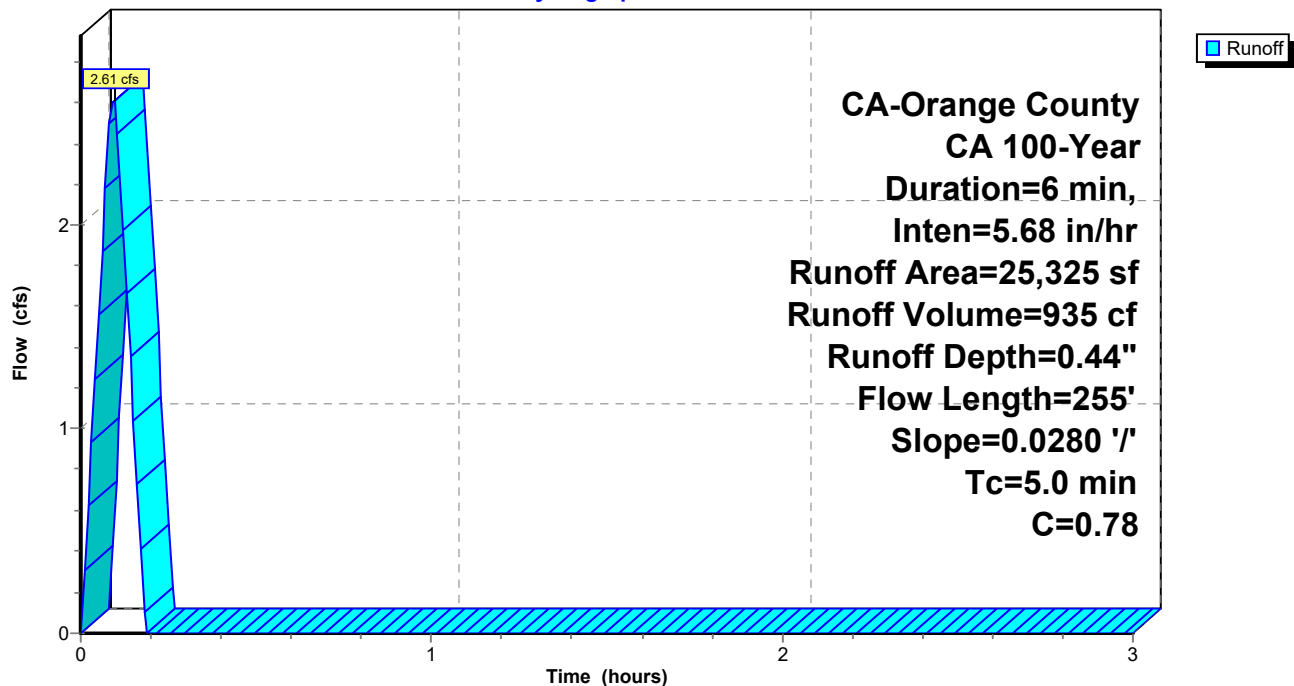
Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
CA-Orange County, CA 100-Year Duration=6 min, Inten=5.68 in/hr

Area (sf)	C	Description
18,997	0.95	impervious
6,328	0.25	pervious
25,325	0.78	Weighted Average
6,328		24.99% Pervious Area
18,997		75.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	255	0.0280	1.27		Sheet Flow, DA-2 n= 0.015 P2= 2.37"
3.3	255	Total, Increased to minimum Tc = 5.0 min			

Subcatchment D: DA-5

Hydrograph



Hydrograph for Subcatchment D: DA-5

Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)	Time (hours)	Runoff (cfs)
0.00	0.00	1.02	0.00	2.04	0.00
0.02	0.62	1.04	0.00	2.06	0.00
0.04	1.25	1.06	0.00	2.08	0.00
0.06	1.87	1.08	0.00	2.10	0.00
0.08	2.49	1.10	0.00	2.12	0.00
0.10	2.60	1.12	0.00	2.14	0.00
0.12	1.97	1.14	0.00	2.16	0.00
0.14	1.35	1.16	0.00	2.18	0.00
0.16	0.73	1.18	0.00	2.20	0.00
0.18	0.10	1.20	0.00	2.22	0.00
0.20	0.00	1.22	0.00	2.24	0.00
0.22	0.00	1.24	0.00	2.26	0.00
0.24	0.00	1.26	0.00	2.28	0.00
0.26	0.00	1.28	0.00	2.30	0.00
0.28	0.00	1.30	0.00	2.32	0.00
0.30	0.00	1.32	0.00	2.34	0.00
0.32	0.00	1.34	0.00	2.36	0.00
0.34	0.00	1.36	0.00	2.38	0.00
0.36	0.00	1.38	0.00	2.40	0.00
0.38	0.00	1.40	0.00	2.42	0.00
0.40	0.00	1.42	0.00	2.44	0.00
0.42	0.00	1.44	0.00	2.46	0.00
0.44	0.00	1.46	0.00	2.48	0.00
0.46	0.00	1.48	0.00	2.50	0.00
0.48	0.00	1.50	0.00	2.52	0.00
0.50	0.00	1.52	0.00	2.54	0.00
0.52	0.00	1.54	0.00	2.56	0.00
0.54	0.00	1.56	0.00	2.58	0.00
0.56	0.00	1.58	0.00	2.60	0.00
0.58	0.00	1.60	0.00	2.62	0.00
0.60	0.00	1.62	0.00	2.64	0.00
0.62	0.00	1.64	0.00	2.66	0.00
0.64	0.00	1.66	0.00	2.68	0.00
0.66	0.00	1.68	0.00	2.70	0.00
0.68	0.00	1.70	0.00	2.72	0.00
0.70	0.00	1.72	0.00	2.74	0.00
0.72	0.00	1.74	0.00	2.76	0.00
0.74	0.00	1.76	0.00	2.78	0.00
0.76	0.00	1.78	0.00	2.80	0.00
0.78	0.00	1.80	0.00	2.82	0.00
0.80	0.00	1.82	0.00	2.84	0.00
0.82	0.00	1.84	0.00	2.86	0.00
0.84	0.00	1.86	0.00	2.88	0.00
0.86	0.00	1.88	0.00	2.90	0.00
0.88	0.00	1.90	0.00	2.92	0.00
0.90	0.00	1.92	0.00	2.94	0.00
0.92	0.00	1.94	0.00	2.96	0.00
0.94	0.00	1.96	0.00	2.98	0.00
0.96	0.00	1.98	0.00	3.00	0.00
0.98	0.00	2.00	0.00		
1.00	0.00	2.02	0.00		

Summary for Reach 5R: (new Reach)

[52] Hint: Inlet/Outlet conditions not evaluated

[81] Warning: Exceeded Pond 11P by 0.32' @ 0.02 hrs

[81] Warning: Exceeded Pond 13P by 0.02' @ 0.02 hrs

Inflow Area = 123,856 sf, 82.25% Impervious, Inflow Depth > 0.45" for 100-Year event
Inflow = 4.71 cfs @ 0.10 hrs, Volume= 4,696 cf
Outflow = 4.66 cfs @ 0.11 hrs, Volume= 4,697 cf, Atten= 1%, Lag= 0.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs / 2

Max. Velocity= 7.31 fps, Min. Travel Time= 0.0 min

Avg. Velocity= 2.40 fps, Avg. Travel Time= 0.1 min

Peak Storage= 8 cf @ 0.11 hrs

Average Depth at Peak Storage= 0.76'

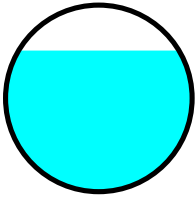
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 5.06 cfs

12.0" Round Pipe

n= 0.009

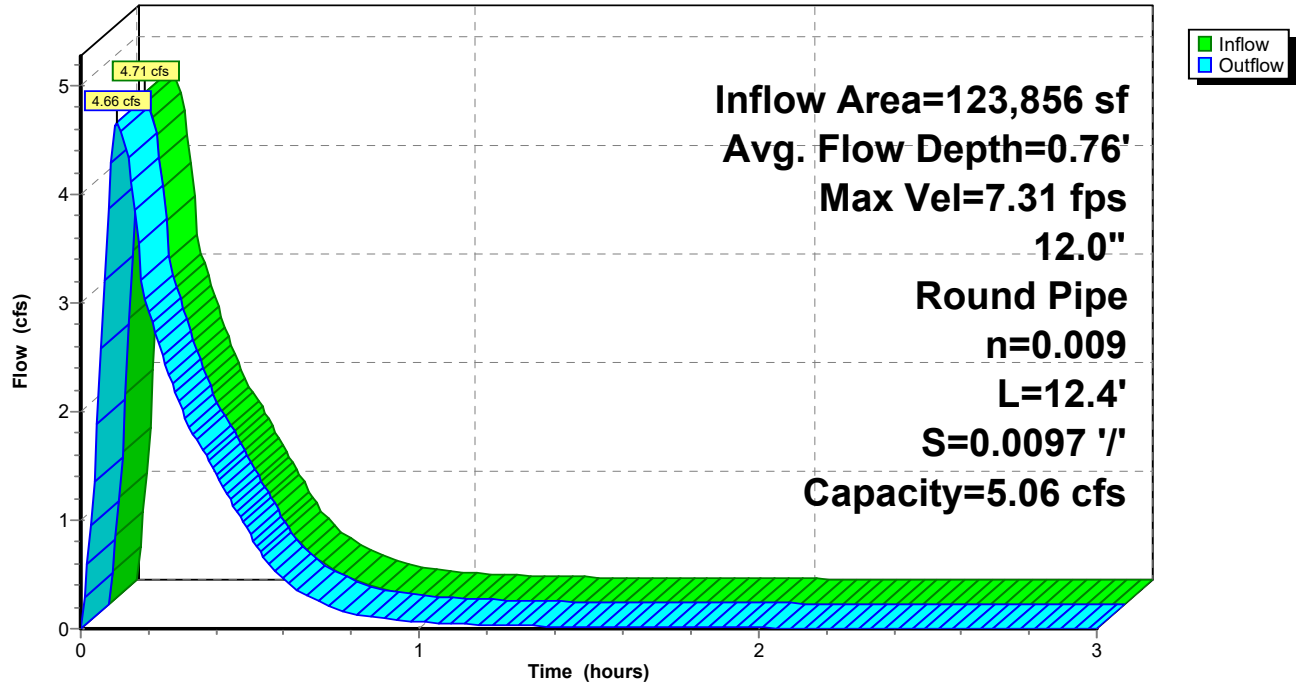
Length= 12.4' Slope= 0.0097 '/'

Inlet Invert= 96.62', Outlet Invert= 96.50'



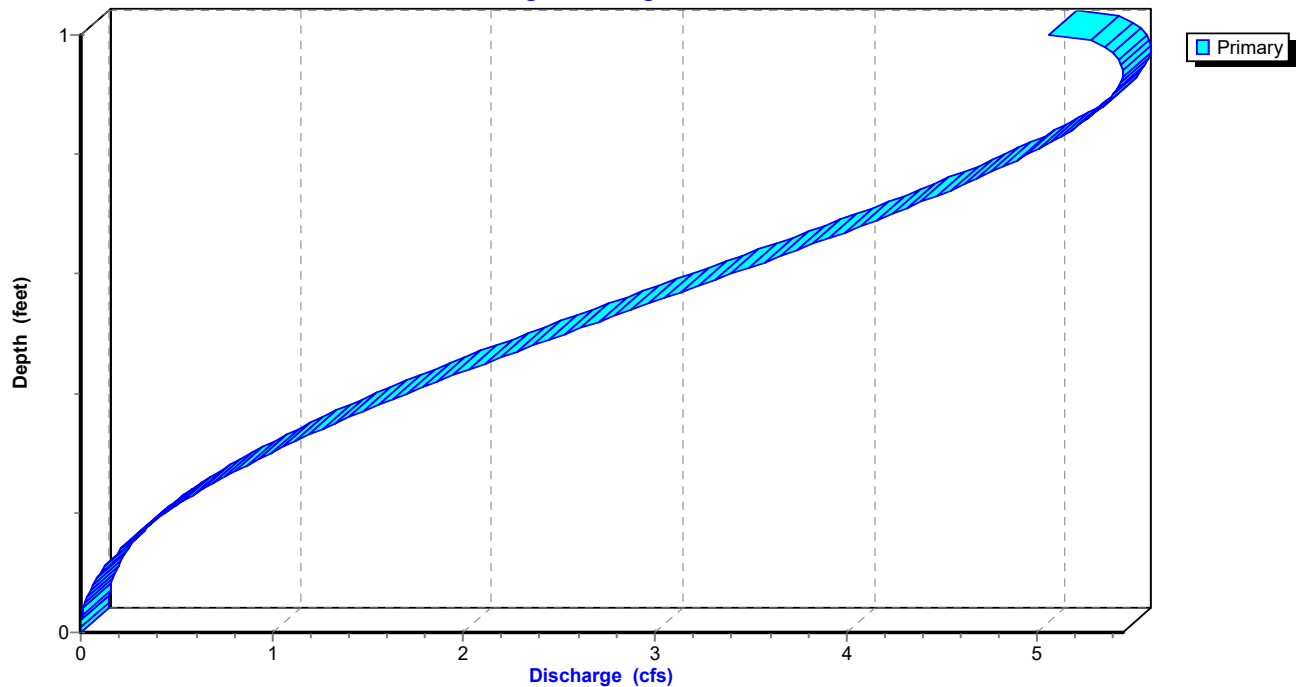
Reach 5R: (new Reach)

Hydrograph

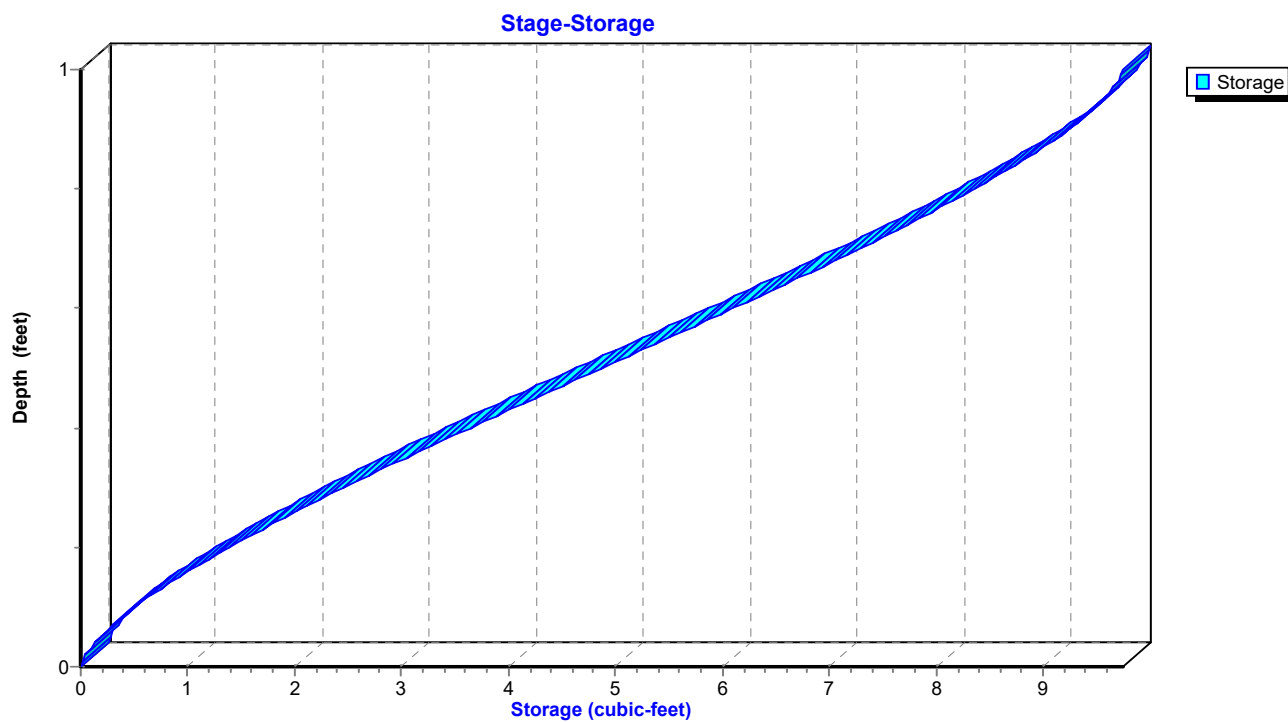


Reach 5R: (new Reach)

Stage-Discharge



Reach 5R: (new Reach)



Hydrograph for Reach 5R: (new Reach)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	96.62	0.00
0.10	4.67	8	97.38	4.64
0.20	2.92	5	97.17	2.93
0.30	2.01	4	97.06	2.01
0.40	1.42	3	96.98	1.42
0.50	0.87	2	96.90	0.88
0.60	0.45	1	96.82	0.45
0.70	0.25	1	96.77	0.26
0.80	0.14	1	96.74	0.15
0.90	0.09	0	96.71	0.09
1.00	0.06	0	96.70	0.06
1.10	0.05	0	96.69	0.05
1.20	0.03	0	96.68	0.03
1.30	0.03	0	96.67	0.03
1.40	0.02	0	96.67	0.02
1.50	0.02	0	96.66	0.02
1.60	0.01	0	96.66	0.01
1.70	0.01	0	96.66	0.01
1.80	0.01	0	96.65	0.01
1.90	0.01	0	96.65	0.01
2.00	0.01	0	96.65	0.01
2.10	0.01	0	96.65	0.01
2.20	0.01	0	96.65	0.01
2.30	0.01	0	96.65	0.01
2.40	0.01	0	96.64	0.01
2.50	0.00	0	96.64	0.00
2.60	0.00	0	96.64	0.00
2.70	0.00	0	96.64	0.00
2.80	0.00	0	96.64	0.00
2.90	0.00	0	96.64	0.00
3.00	0.00	0	96.64	0.00

Stage-Discharge for Reach 5R: (new Reach)

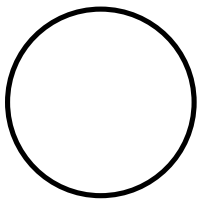
Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
96.62	0.00	0.00	97.13	6.50	2.62
96.63	0.57	0.00	97.14	6.55	2.70
96.64	0.91	0.00	97.15	6.60	2.79
96.65	1.19	0.01	97.16	6.65	2.88
96.66	1.43	0.02	97.17	6.70	2.97
96.67	1.66	0.02	97.18	6.75	3.05
96.68	1.86	0.04	97.19	6.79	3.14
96.69	2.06	0.05	97.20	6.83	3.23
96.70	2.24	0.07	97.21	6.87	3.31
96.71	2.42	0.08	97.22	6.91	3.40
96.72	2.59	0.11	97.23	6.95	3.49
96.73	2.75	0.13	97.24	6.99	3.57
96.74	2.90	0.15	97.25	7.02	3.66
96.75	3.05	0.18	97.26	7.05	3.74
96.76	3.19	0.21	97.27	7.09	3.83
96.77	3.33	0.25	97.28	7.12	3.91
96.78	3.47	0.28	97.29	7.14	4.00
96.79	3.60	0.32	97.30	7.17	4.08
96.80	3.72	0.36	97.31	7.19	4.16
96.81	3.85	0.40	97.32	7.22	4.24
96.82	3.96	0.44	97.33	7.24	4.32
96.83	4.08	0.49	97.34	7.26	4.39
96.84	4.19	0.54	97.35	7.28	4.47
96.85	4.30	0.59	97.36	7.29	4.54
96.86	4.41	0.64	97.37	7.31	4.62
96.87	4.52	0.69	97.38	7.32	4.69
96.88	4.62	0.75	97.39	7.33	4.76
96.89	4.72	0.81	97.40	7.34	4.82
96.90	4.82	0.87	97.41	7.34	4.89
96.91	4.91	0.93	97.42	7.35	4.95
96.92	5.00	0.99	97.43	7.35	5.01
96.93	5.09	1.06	97.44	7.35	5.06
96.94	5.18	1.12	97.45	7.35	5.12
96.95	5.27	1.19	97.46	7.34	5.17
96.96	5.35	1.26	97.47	7.33	5.22
96.97	5.43	1.33	97.48	7.32	5.26
96.98	5.51	1.40	97.49	7.31	5.30
96.99	5.59	1.48	97.50	7.29	5.34
97.00	5.67	1.55	97.51	7.27	5.37
97.01	5.74	1.63	97.52	7.25	5.40
97.02	5.82	1.71	97.53	7.22	5.42
97.03	5.89	1.78	97.54	7.19	5.43
97.04	5.96	1.86	97.55	7.15	5.44
97.05	6.02	1.94	97.56	7.11	5.45
97.06	6.09	2.03	97.57	7.06	5.44
97.07	6.15	2.11	97.58	7.00	5.42
97.08	6.21	2.19	97.59	6.93	5.40
97.09	6.27	2.28	97.60	6.84	5.35
97.10	6.33	2.36	97.61	6.73	5.28
97.11	6.39	2.45	97.62	6.45	5.06
97.12	6.45	2.53			

Summary for Reach 8R: (new Reach)

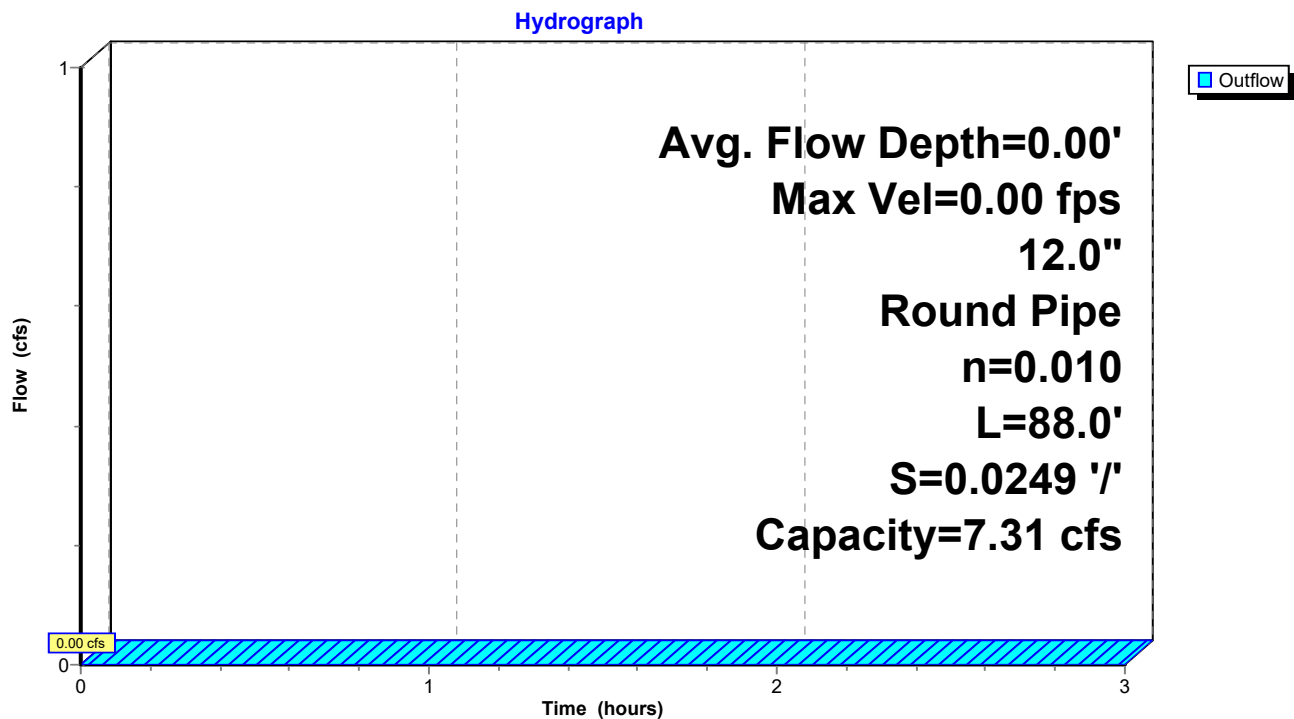
[43] Hint: Has no inflow (Outflow=Zero)

Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 7.31 cfs

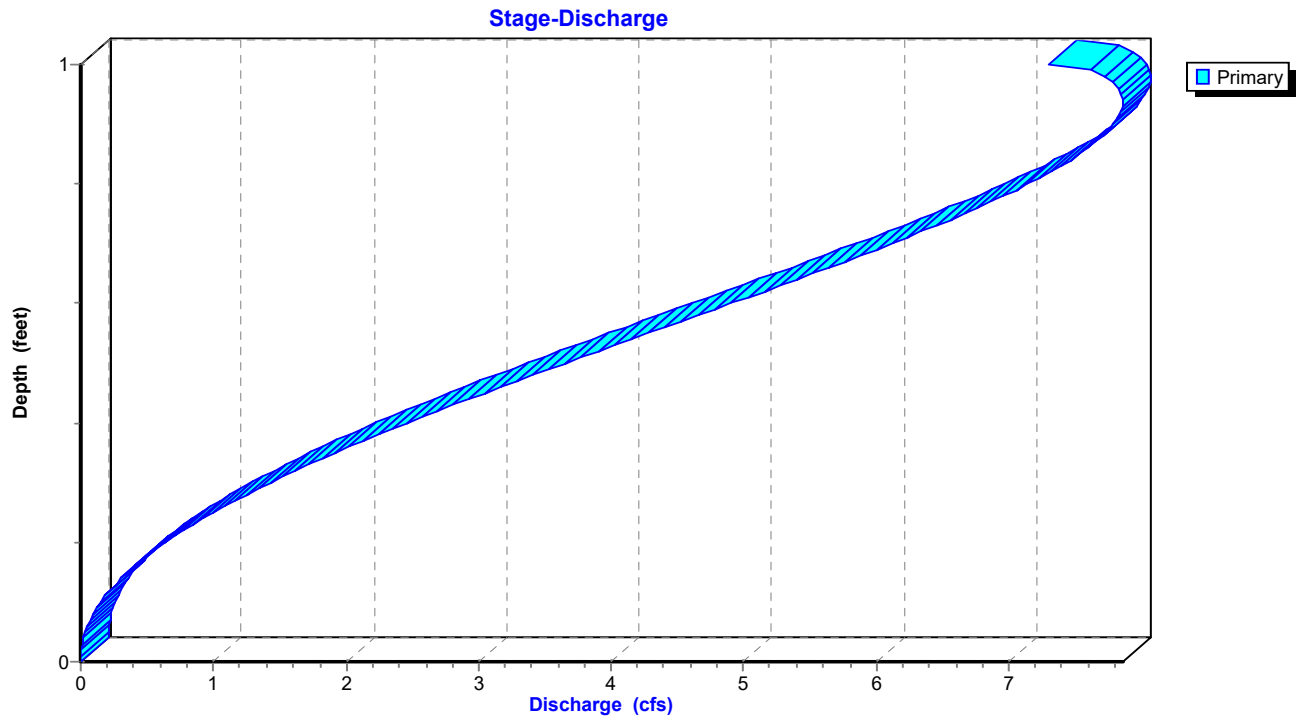
12.0" Round Pipe
 n= 0.010 PVC, smooth interior
 Length= 88.0' Slope= 0.0249 '/
 Inlet Invert= 100.33', Outlet Invert= 98.14'



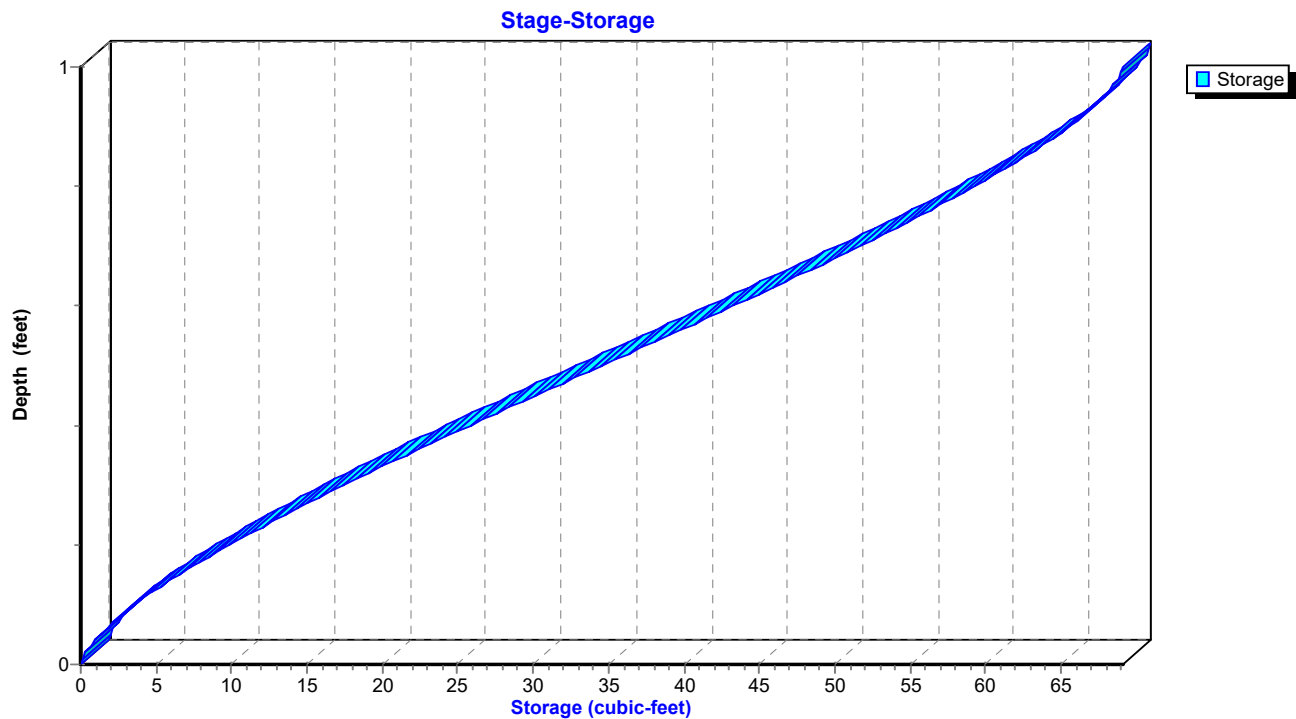
Reach 8R: (new Reach)



Reach 8R: (new Reach)



Reach 8R: (new Reach)



Stage-Discharge for Reach 8R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
100.33	0.00	0.00	100.84	9.38	3.78
100.34	0.83	0.00	100.85	9.46	3.90
100.35	1.31	0.00	100.86	9.53	4.03
100.36	1.71	0.01	100.87	9.60	4.15
100.37	2.07	0.02	100.88	9.67	4.28
100.38	2.39	0.04	100.89	9.74	4.41
100.39	2.69	0.05	100.90	9.80	4.53
100.40	2.97	0.07	100.91	9.86	4.66
100.41	3.24	0.10	100.92	9.92	4.78
100.42	3.49	0.12	100.93	9.98	4.91
100.43	3.73	0.15	100.94	10.03	5.03
100.44	3.96	0.19	100.95	10.08	5.16
100.45	4.19	0.22	100.96	10.13	5.28
100.46	4.40	0.26	100.97	10.18	5.40
100.47	4.61	0.31	100.98	10.23	5.53
100.48	4.81	0.36	100.99	10.27	5.65
100.49	5.00	0.41	101.00	10.31	5.77
100.50	5.19	0.46	101.01	10.35	5.89
100.51	5.37	0.52	101.02	10.38	6.00
100.52	5.55	0.58	101.03	10.42	6.12
100.53	5.72	0.64	101.04	10.45	6.23
100.54	5.89	0.71	101.05	10.48	6.34
100.55	6.05	0.78	101.06	10.50	6.45
100.56	6.21	0.85	101.07	10.52	6.56
100.57	6.37	0.92	101.08	10.54	6.66
100.58	6.52	1.00	101.09	10.56	6.76
100.59	6.67	1.08	101.10	10.58	6.86
100.60	6.81	1.17	101.11	10.59	6.96
100.61	6.95	1.25	101.12	10.60	7.05
100.62	7.09	1.34	101.13	10.60	7.14
100.63	7.22	1.43	101.14	10.61	7.23
100.64	7.35	1.52	101.15	10.60	7.31
100.65	7.48	1.62	101.16	10.60	7.39
100.66	7.60	1.72	101.17	10.59	7.46
100.67	7.72	1.82	101.18	10.58	7.53
100.68	7.84	1.92	101.19	10.57	7.59
100.69	7.96	2.03	101.20	10.55	7.65
100.70	8.07	2.13	101.21	10.52	7.70
100.71	8.18	2.24	101.22	10.49	7.75
100.72	8.29	2.35	101.23	10.46	7.79
100.73	8.39	2.46	101.24	10.42	7.82
100.74	8.50	2.58	101.25	10.37	7.84
100.75	8.59	2.69	101.26	10.32	7.86
100.76	8.69	2.81	101.27	10.26	7.86
100.77	8.79	2.92	101.28	10.19	7.85
100.78	8.88	3.04	101.29	10.10	7.83
100.79	8.97	3.16	101.30	10.00	7.79
100.80	9.06	3.28	101.31	9.88	7.72
100.81	9.14	3.41	101.32	9.71	7.61
100.82	9.22	3.53	101.33	9.30	7.31
100.83	9.30	3.65			

Summary for Reach 9R: SD Pipe

[52] Hint: Inlet/Outlet conditions not evaluated

[79] Warning: Submerged Pond 2P Primary device # 1 INLET by 0.59'

Inflow Area = 60,995 sf, 83.46% Impervious, Inflow Depth = 0.47" for 100-Year event
Inflow = 6.71 cfs @ 0.09 hrs, Volume= 2,403 cf
Outflow = 6.70 cfs @ 0.10 hrs, Volume= 2,403 cf, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Max. Velocity= 6.42 fps, Min. Travel Time= 0.2 min

Avg. Velocity = 3.27 fps, Avg. Travel Time= 0.3 min

Peak Storage= 64 cf @ 0.10 hrs

Average Depth at Peak Storage= 0.74'

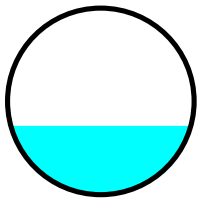
Bank-Full Depth= 2.00' Flow Area= 3.1 sf, Capacity= 23.37 cfs

24.0" Round Pipe

n= 0.009

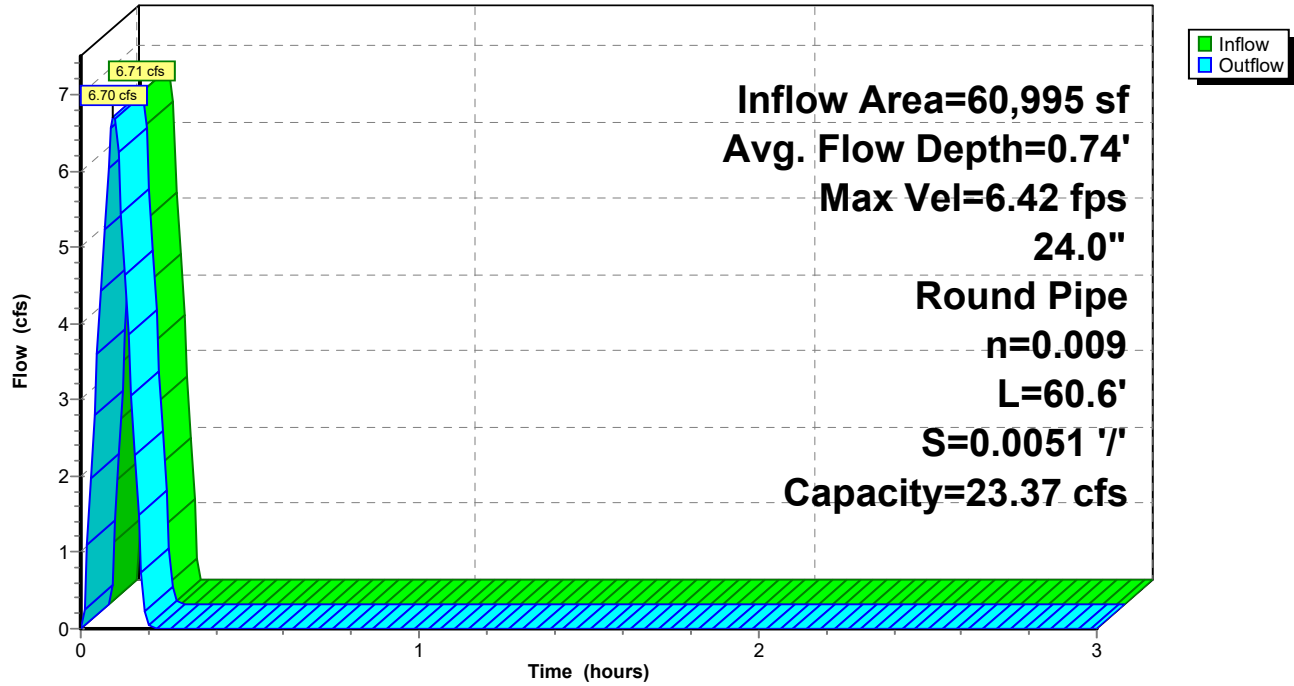
Length= 60.6' Slope= 0.0051 '/'

Inlet Invert= 98.16', Outlet Invert= 97.85'



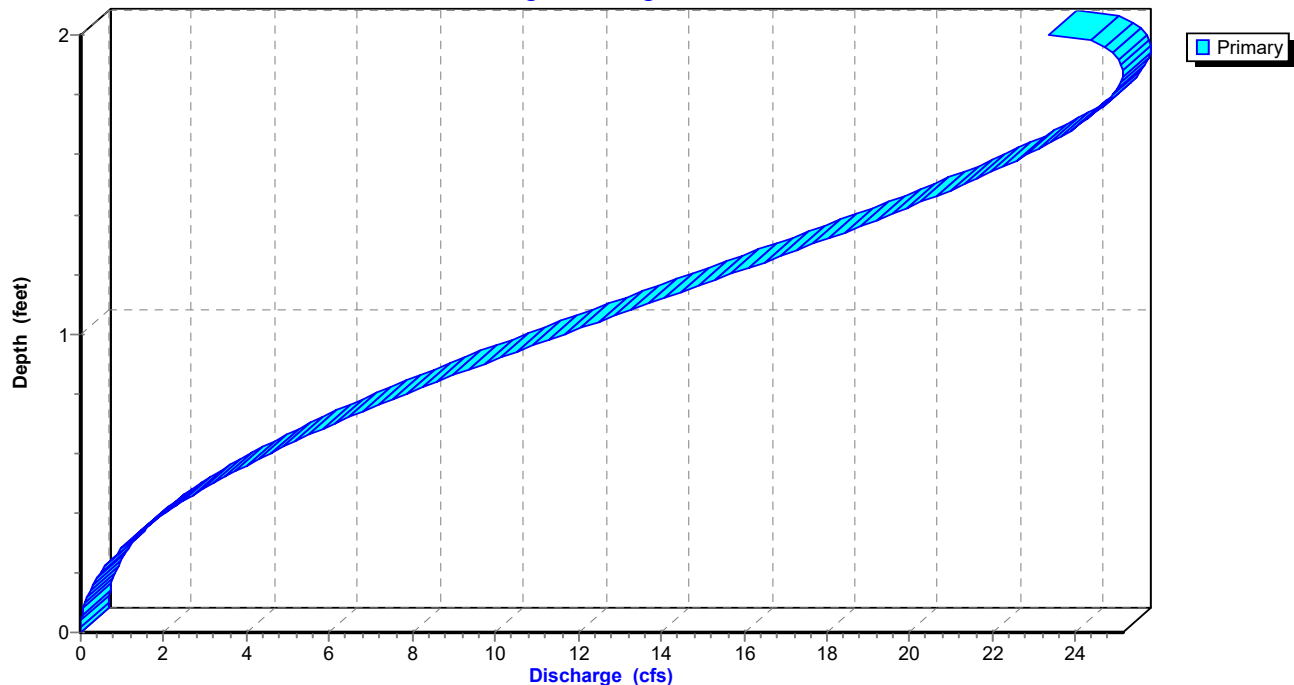
Reach 9R: SD Pipe

Hydrograph

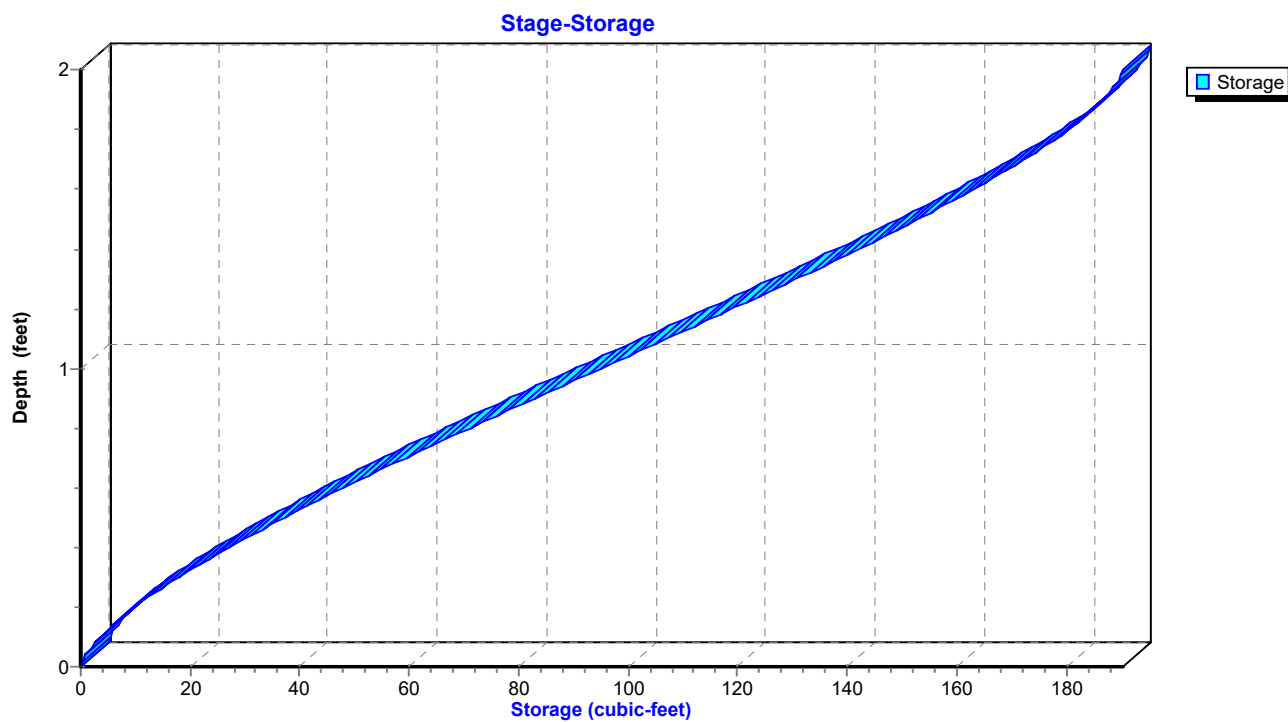


Reach 9R: SD Pipe

Stage-Discharge



Reach 9R: SD Pipe



Hydrograph for Reach 9R: SD Pipe

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	98.16	0.00
0.10	6.67	63	98.89	6.68
0.20	0.00	1	98.21	0.05
0.30	0.00	0	98.16	0.00
0.40	0.00	0	98.16	0.00
0.50	0.00	0	98.16	0.00
0.60	0.00	0	98.16	0.00
0.70	0.00	0	98.16	0.00
0.80	0.00	0	98.16	0.00
0.90	0.00	0	98.16	0.00
1.00	0.00	0	98.16	0.00
1.10	0.00	0	98.16	0.00
1.20	0.00	0	98.16	0.00
1.30	0.00	0	98.16	0.00
1.40	0.00	0	98.16	0.00
1.50	0.00	0	98.16	0.00
1.60	0.00	0	98.16	0.00
1.70	0.00	0	98.16	0.00
1.80	0.00	0	98.16	0.00
1.90	0.00	0	98.16	0.00
2.00	0.00	0	98.16	0.00
2.10	0.00	0	98.16	0.00
2.20	0.00	0	98.16	0.00
2.30	0.00	0	98.16	0.00
2.40	0.00	0	98.16	0.00
2.50	0.00	0	98.16	0.00
2.60	0.00	0	98.16	0.00
2.70	0.00	0	98.16	0.00
2.80	0.00	0	98.16	0.00
2.90	0.00	0	98.16	0.00
3.00	0.00	0	98.16	0.00

Stage-Discharge for Reach 9R: SD Pipe

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
98.16	0.00	0.00	99.18	7.50	12.08
98.18	0.66	0.00	99.20	7.56	12.48
98.20	1.05	0.02	99.22	7.62	12.88
98.22	1.37	0.04	99.24	7.68	13.29
98.24	1.65	0.07	99.26	7.73	13.69
98.26	1.91	0.11	99.28	7.78	14.09
98.28	2.15	0.17	99.30	7.84	14.50
98.30	2.38	0.23	99.32	7.89	14.90
98.32	2.59	0.30	99.34	7.93	15.30
98.34	2.79	0.39	99.36	7.98	15.70
98.36	2.98	0.49	99.38	8.02	16.10
98.38	3.17	0.60	99.40	8.06	16.50
98.40	3.35	0.71	99.42	8.10	16.90
98.42	3.52	0.84	99.44	8.14	17.29
98.44	3.68	0.98	99.46	8.18	17.68
98.46	3.84	1.14	99.48	8.21	18.06
98.48	4.00	1.30	99.50	8.24	18.45
98.50	4.15	1.47	99.52	8.28	18.83
98.52	4.30	1.65	99.54	8.30	19.20
98.54	4.44	1.84	99.56	8.33	19.57
98.56	4.58	2.05	99.58	8.35	19.93
98.58	4.71	2.26	99.60	8.38	20.29
98.60	4.84	2.48	99.62	8.40	20.64
98.62	4.97	2.71	99.64	8.42	20.98
98.64	5.09	2.95	99.66	8.43	21.31
98.66	5.21	3.20	99.68	8.45	21.64
98.68	5.33	3.46	99.70	8.46	21.95
98.70	5.45	3.73	99.72	8.47	22.26
98.72	5.56	4.00	99.74	8.47	22.56
98.74	5.67	4.29	99.76	8.48	22.84
98.76	5.77	4.58	99.78	8.48	23.12
98.78	5.88	4.88	99.80	8.48	23.38
98.80	5.98	5.18	99.82	8.48	23.63
98.82	6.08	5.50	99.84	8.47	23.86
98.84	6.18	5.82	99.86	8.46	24.08
98.86	6.27	6.15	99.88	8.45	24.29
98.88	6.36	6.48	99.90	8.43	24.47
98.90	6.45	6.82	99.92	8.41	24.64
98.92	6.54	7.17	99.94	8.39	24.78
98.94	6.63	7.52	99.96	8.36	24.91
98.96	6.71	7.88	99.98	8.33	25.01
98.98	6.79	8.24	100.00	8.30	25.08
99.00	6.87	8.61	100.02	8.25	25.13
99.02	6.95	8.98	100.04	8.20	25.14
99.04	7.03	9.35	100.06	8.15	25.11
99.06	7.10	9.73	100.08	8.08	25.04
99.08	7.17	10.12	100.10	8.00	24.91
99.10	7.24	10.51	100.12	7.90	24.70
99.12	7.31	10.90	100.14	7.76	24.35
99.14	7.38	11.29	100.16	7.44	23.37
99.16	7.44	11.69			

Summary for Reach 12R: (new Reach)

[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 37,536 sf, 85.17% Impervious, Inflow Depth = 0.48" for 100-Year event
 Inflow = 4.25 cfs @ 0.09 hrs, Volume= 1,510 cf
 Outflow = 4.21 cfs @ 0.10 hrs, Volume= 1,510 cf, Atten= 1%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Max. Velocity= 9.05 fps, Min. Travel Time= 0.1 min

Avg. Velocity= 5.04 fps, Avg. Travel Time= 0.2 min

Peak Storage= 35 cf @ 0.10 hrs

Average Depth at Peak Storage= 0.58'

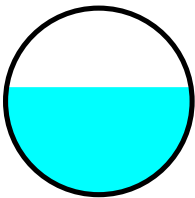
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 6.72 cfs

12.0" Round Pipe

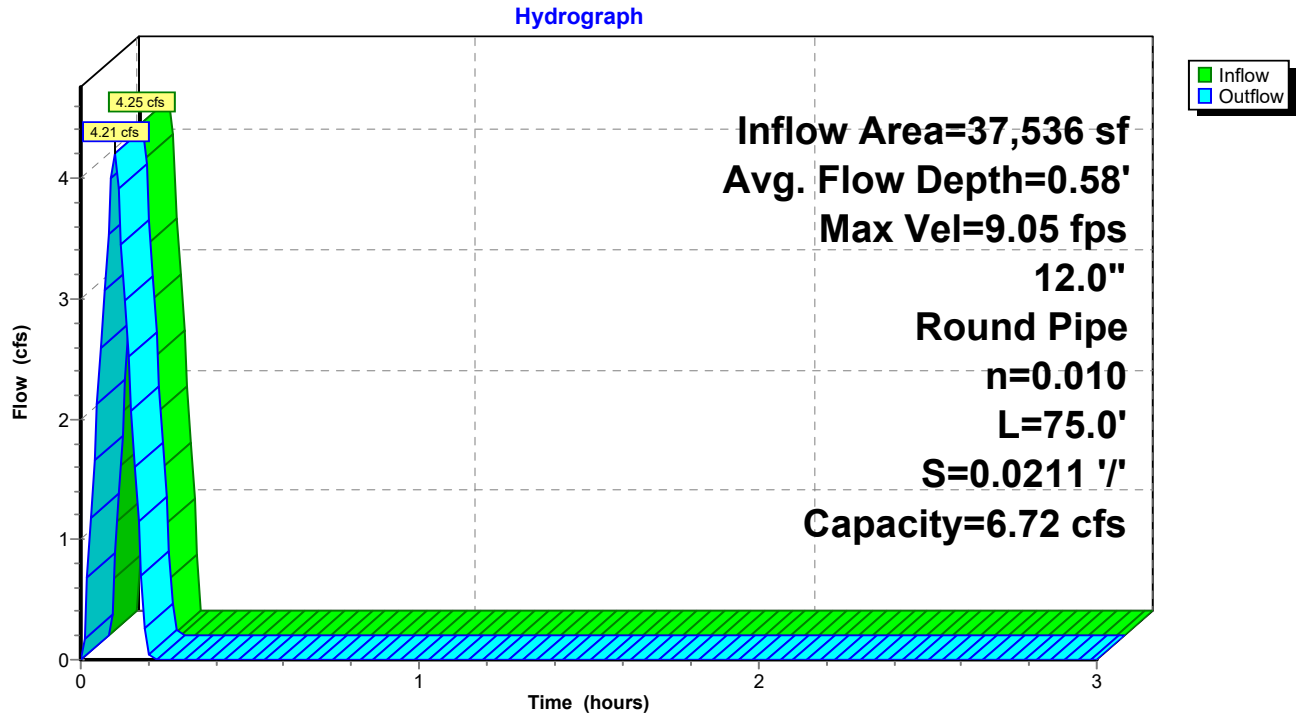
n= 0.010 PVC, smooth interior

Length= 75.0' Slope= 0.0211 '/'

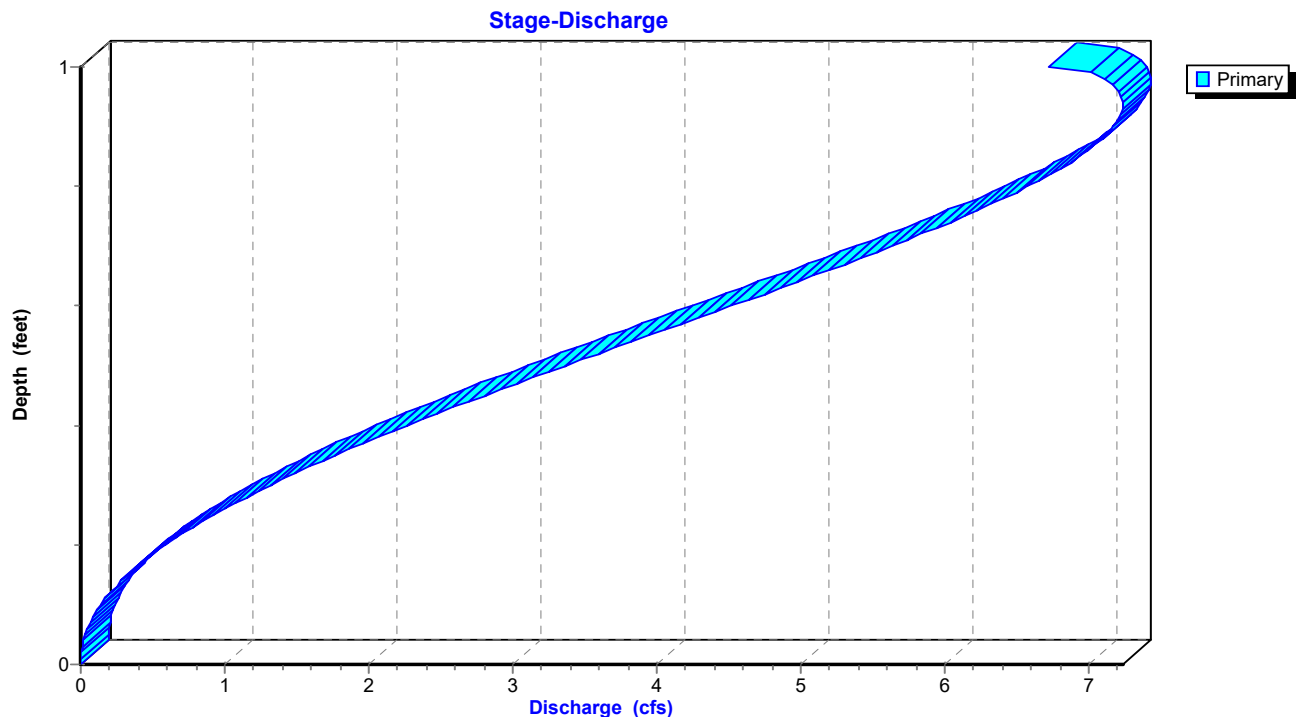
Inlet Invert= 99.60', Outlet Invert= 98.02'



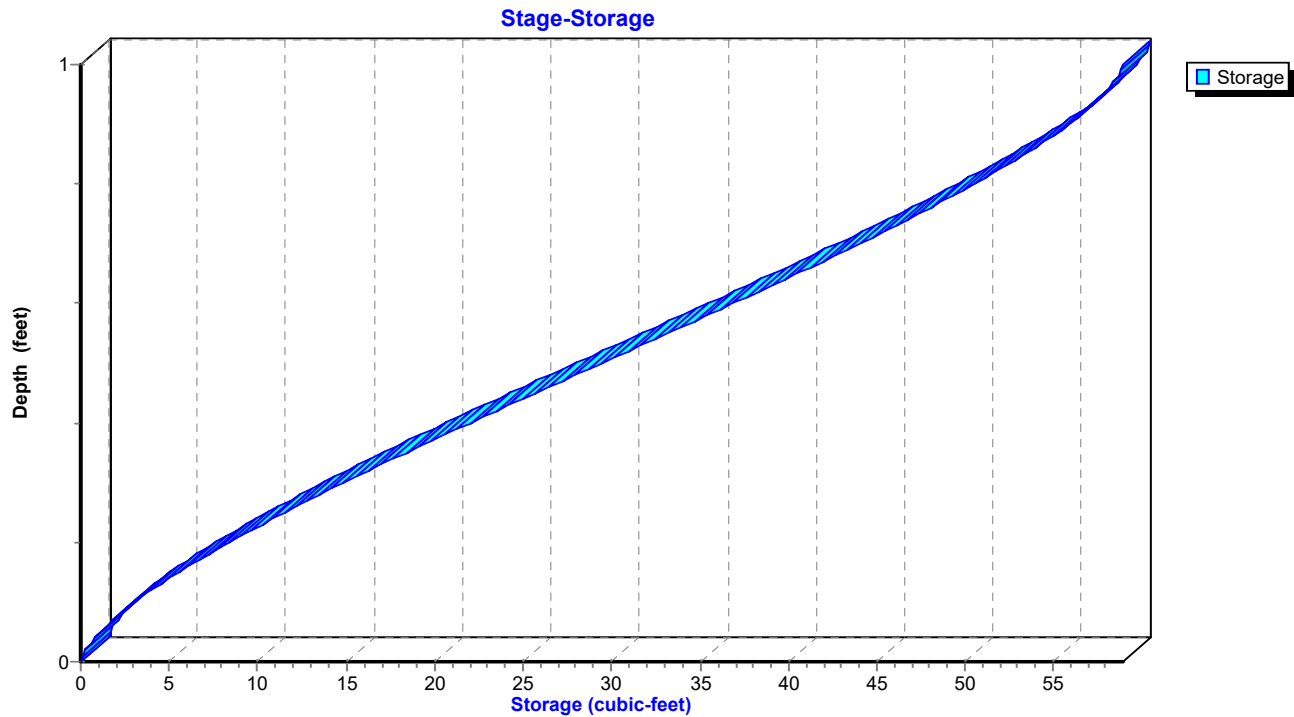
Reach 12R: (new Reach)



Reach 12R: (new Reach)



Reach 12R: (new Reach)



Hydrograph for Reach 12R: (new Reach)

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)
0.00	0.00	0	99.60	0.00
0.10	4.19	35	100.18	4.21
0.20	0.00	0	99.62	0.04
0.30	0.00	0	99.60	0.00
0.40	0.00	0	99.60	0.00
0.50	0.00	0	99.60	0.00
0.60	0.00	0	99.60	0.00
0.70	0.00	0	99.60	0.00
0.80	0.00	0	99.60	0.00
0.90	0.00	0	99.60	0.00
1.00	0.00	0	99.60	0.00
1.10	0.00	0	99.60	0.00
1.20	0.00	0	99.60	0.00
1.30	0.00	0	99.60	0.00
1.40	0.00	0	99.60	0.00
1.50	0.00	0	99.60	0.00
1.60	0.00	0	99.60	0.00
1.70	0.00	0	99.60	0.00
1.80	0.00	0	99.60	0.00
1.90	0.00	0	99.60	0.00
2.00	0.00	0	99.60	0.00
2.10	0.00	0	99.60	0.00
2.20	0.00	0	99.60	0.00
2.30	0.00	0	99.60	0.00
2.40	0.00	0	99.60	0.00
2.50	0.00	0	99.60	0.00
2.60	0.00	0	99.60	0.00
2.70	0.00	0	99.60	0.00
2.80	0.00	0	99.60	0.00
2.90	0.00	0	99.60	0.00
3.00	0.00	0	99.60	0.00

Stage-Discharge for Reach 12R: (new Reach)

Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)	Elevation (feet)	Velocity (ft/sec)	Discharge (cfs)
99.60	0.00	0.00	100.11	8.63	3.48
99.61	0.76	0.00	100.12	8.70	3.59
99.62	1.21	0.00	100.13	8.77	3.71
99.63	1.57	0.01	100.14	8.83	3.82
99.64	1.90	0.02	100.15	8.90	3.94
99.65	2.20	0.03	100.16	8.96	4.05
99.66	2.48	0.05	100.17	9.02	4.17
99.67	2.73	0.07	100.18	9.07	4.29
99.68	2.98	0.09	100.19	9.13	4.40
99.69	3.21	0.11	100.20	9.18	4.52
99.70	3.43	0.14	100.21	9.23	4.63
99.71	3.65	0.17	100.22	9.28	4.75
99.72	3.85	0.21	100.23	9.32	4.86
99.73	4.05	0.24	100.24	9.37	4.97
99.74	4.24	0.28	100.25	9.41	5.08
99.75	4.42	0.33	100.26	9.45	5.20
99.76	4.60	0.37	100.27	9.49	5.31
99.77	4.77	0.42	100.28	9.52	5.42
99.78	4.94	0.48	100.29	9.55	5.52
99.79	5.11	0.53	100.30	9.58	5.63
99.80	5.26	0.59	100.31	9.61	5.73
99.81	5.42	0.65	100.32	9.64	5.84
99.82	5.57	0.71	100.33	9.66	5.94
99.83	5.72	0.78	100.34	9.68	6.03
99.84	5.86	0.85	100.35	9.70	6.13
99.85	6.00	0.92	100.36	9.72	6.22
99.86	6.13	1.00	100.37	9.73	6.32
99.87	6.27	1.07	100.38	9.74	6.40
99.88	6.39	1.15	100.39	9.75	6.49
99.89	6.52	1.23	100.40	9.76	6.57
99.90	6.64	1.32	100.41	9.76	6.65
99.91	6.76	1.40	100.42	9.76	6.73
99.92	6.88	1.49	100.43	9.75	6.80
99.93	6.99	1.58	100.44	9.75	6.86
99.94	7.11	1.67	100.45	9.74	6.93
99.95	7.22	1.77	100.46	9.72	6.99
99.96	7.32	1.86	100.47	9.70	7.04
99.97	7.43	1.96	100.48	9.68	7.09
99.98	7.53	2.06	100.49	9.65	7.13
99.99	7.63	2.16	100.50	9.62	7.16
100.00	7.72	2.27	100.51	9.59	7.19
100.01	7.82	2.37	100.52	9.54	7.22
100.02	7.91	2.48	100.53	9.50	7.23
100.03	8.00	2.58	100.54	9.44	7.23
100.04	8.08	2.69	100.55	9.37	7.22
100.05	8.17	2.80	100.56	9.30	7.20
100.06	8.25	2.91	100.57	9.20	7.16
100.07	8.33	3.02	100.58	9.09	7.10
100.08	8.41	3.13	100.59	8.93	7.00
100.09	8.49	3.25	100.60	8.56	6.72
100.10	8.56	3.36			

Summary for Pond 1P: BMP C - MWS

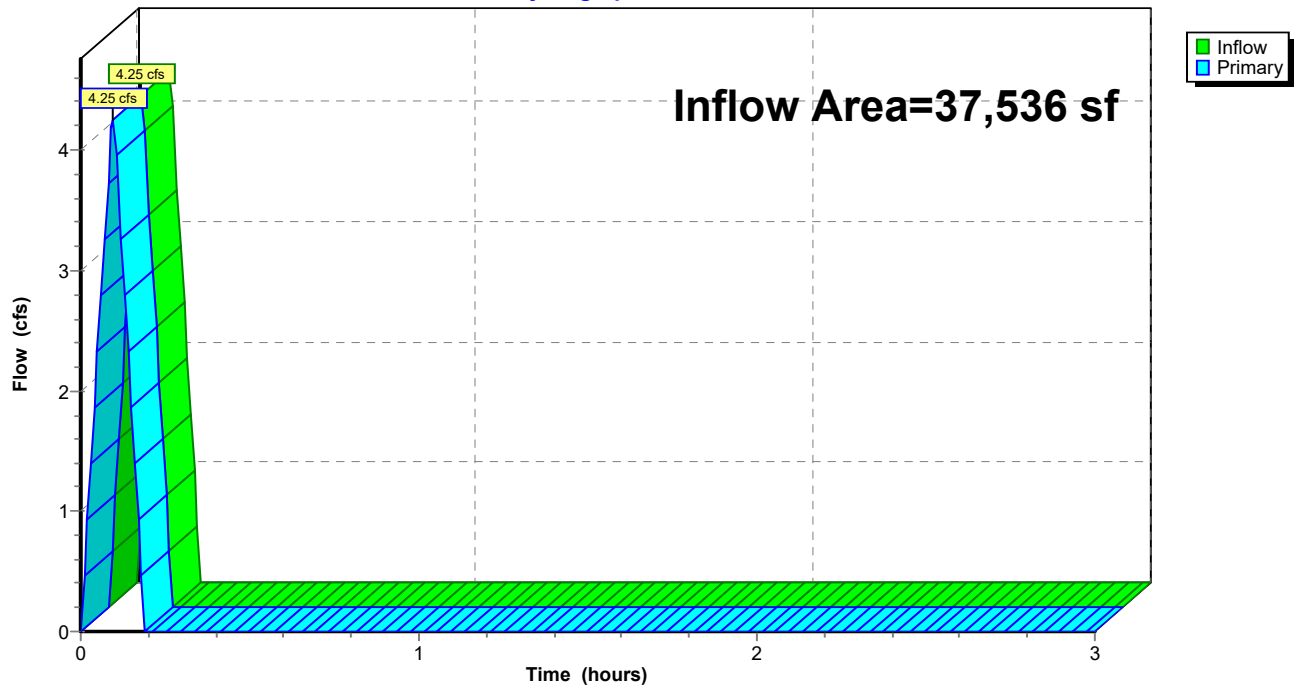
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 37,536 sf, 85.17% Impervious, Inflow Depth = 0.48" for 100-Year event
Inflow = 4.25 cfs @ 0.09 hrs, Volume= 1,510 cf
Primary = 4.25 cfs @ 0.09 hrs, Volume= 1,510 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Pond 1P: BMP C - MWS

Hydrograph



Hydrograph for Pond 1P: BMP C - MWS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	2.55	0.00		0.00
0.05	2.33		2.33	2.60	0.00		0.00
0.10	4.19		4.19	2.65	0.00		0.00
0.15	1.86		1.86	2.70	0.00		0.00
0.20	0.00		0.00	2.75	0.00		0.00
0.25	0.00		0.00	2.80	0.00		0.00
0.30	0.00		0.00	2.85	0.00		0.00
0.35	0.00		0.00	2.90	0.00		0.00
0.40	0.00		0.00	2.95	0.00		0.00
0.45	0.00		0.00	3.00	0.00		0.00
0.50	0.00		0.00				
0.55	0.00		0.00				
0.60	0.00		0.00				
0.65	0.00		0.00				
0.70	0.00		0.00				
0.75	0.00		0.00				
0.80	0.00		0.00				
0.85	0.00		0.00				
0.90	0.00		0.00				
0.95	0.00		0.00				
1.00	0.00		0.00				
1.05	0.00		0.00				
1.10	0.00		0.00				
1.15	0.00		0.00				
1.20	0.00		0.00				
1.25	0.00		0.00				
1.30	0.00		0.00				
1.35	0.00		0.00				
1.40	0.00		0.00				
1.45	0.00		0.00				
1.50	0.00		0.00				
1.55	0.00		0.00				
1.60	0.00		0.00				
1.65	0.00		0.00				
1.70	0.00		0.00				
1.75	0.00		0.00				
1.80	0.00		0.00				
1.85	0.00		0.00				
1.90	0.00		0.00				
1.95	0.00		0.00				
2.00	0.00		0.00				
2.05	0.00		0.00				
2.10	0.00		0.00				
2.15	0.00		0.00				
2.20	0.00		0.00				
2.25	0.00		0.00				
2.30	0.00		0.00				
2.35	0.00		0.00				
2.40	0.00		0.00				
2.45	0.00		0.00				
2.50	0.00		0.00				

Summary for Pond 2P: BMP B - MWS

[57] Hint: Peaked at 100.68' (Flood elevation advised)

[79] Warning: Submerged Pond 5P Primary device # 1 INLET by 1.94'

Inflow Area = 60,995 sf, 83.46% Impervious, Inflow Depth = 0.06" for 100-Year event
 Inflow = 0.64 cfs @ 0.09 hrs, Volume= 280 cf
 Outflow = 0.64 cfs @ 0.09 hrs, Volume= 280 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.64 cfs @ 0.09 hrs, Volume= 280 cf

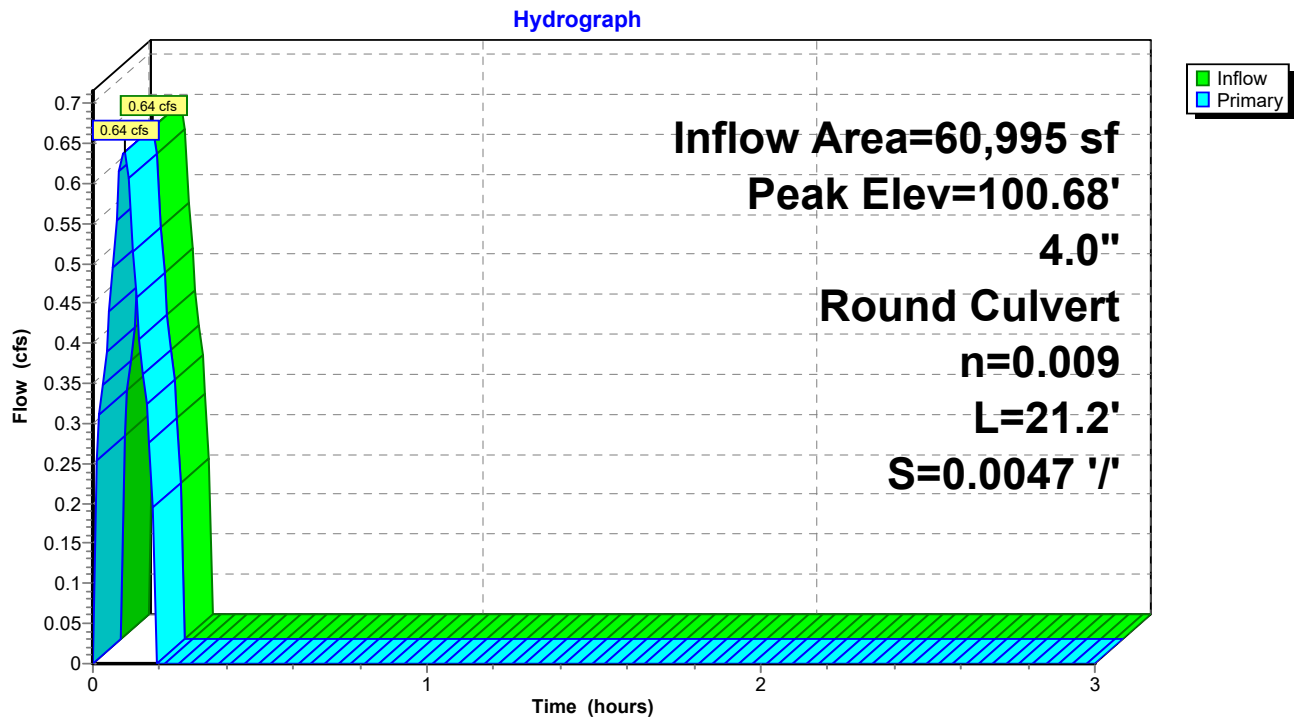
Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 100.68' @ 0.09 hrs

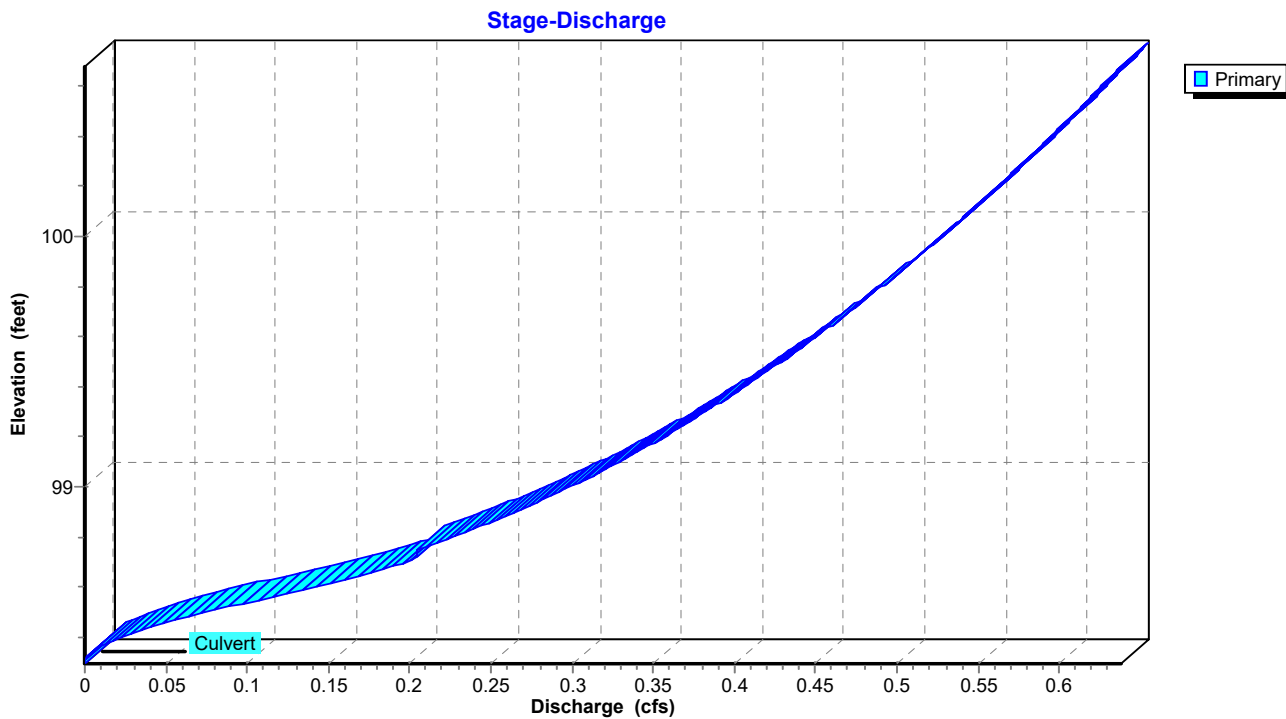
Device	Routing	Invert	Outlet Devices
#1	Primary	98.30'	4.0" Round Culvert L= 21.2' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 98.30' / 98.20' S= 0.0047 '/' Cc= 0.900 n= 0.009, Flow Area= 0.09 sf

Primary OutFlow Max=0.64 cfs @ 0.09 hrs HW=100.66' (Free Discharge)

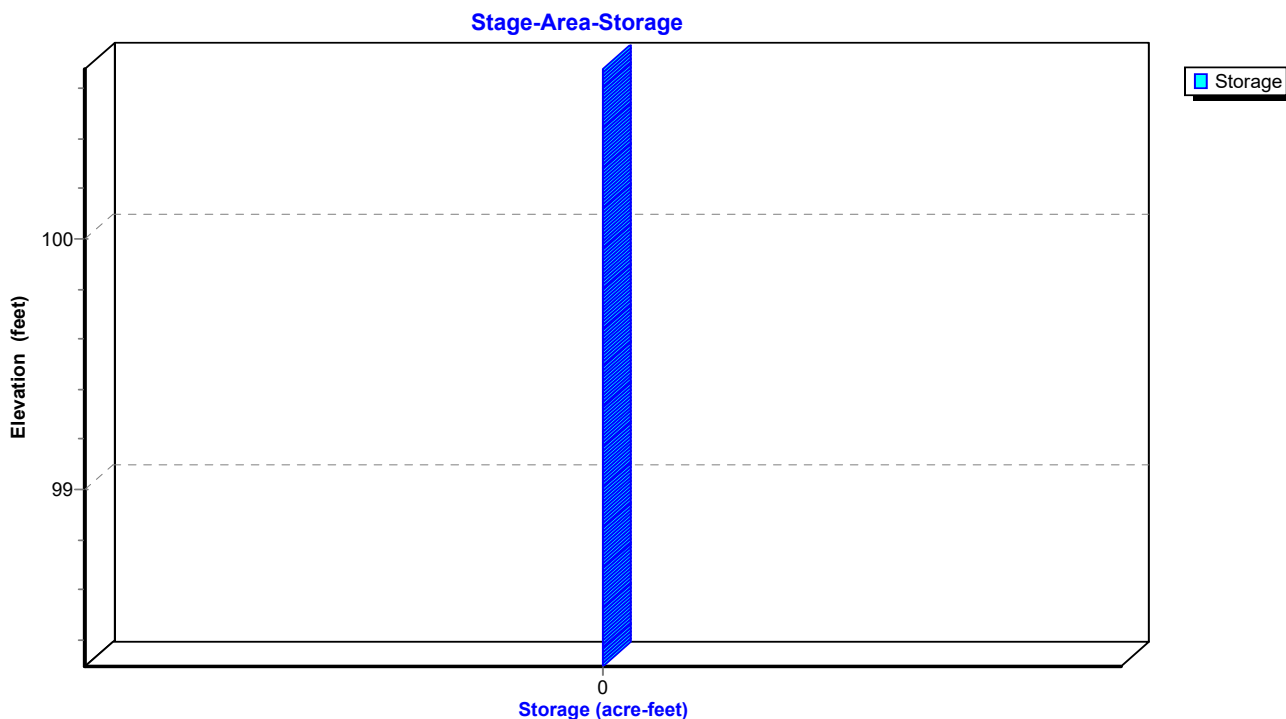
↑1=Culvert (Barrel Controls 0.64 cfs @ 7.29 fps)

Pond 2P: BMP B - MWS

Pond 2P: BMP B - MWS



Pond 2P: BMP B - MWS



Hydrograph for Pond 2P: BMP B - MWS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	98.30	0.00	2.55	0.00	98.30	0.00
0.05	0.44	99.55	0.44	2.60	0.00	98.30	0.00
0.10	0.64	100.66	0.64	2.65	0.00	98.30	0.00
0.15	0.36	99.22	0.36	2.70	0.00	98.30	0.00
0.20	0.00	98.30	0.00	2.75	0.00	98.30	0.00
0.25	0.00	98.30	0.00	2.80	0.00	98.30	0.00
0.30	0.00	98.30	0.00	2.85	0.00	98.30	0.00
0.35	0.00	98.30	0.00	2.90	0.00	98.30	0.00
0.40	0.00	98.30	0.00	2.95	0.00	98.30	0.00
0.45	0.00	98.30	0.00	3.00	0.00	98.30	0.00
0.50	0.00	98.30	0.00				
0.55	0.00	98.30	0.00				
0.60	0.00	98.30	0.00				
0.65	0.00	98.30	0.00				
0.70	0.00	98.30	0.00				
0.75	0.00	98.30	0.00				
0.80	0.00	98.30	0.00				
0.85	0.00	98.30	0.00				
0.90	0.00	98.30	0.00				
0.95	0.00	98.30	0.00				
1.00	0.00	98.30	0.00				
1.05	0.00	98.30	0.00				
1.10	0.00	98.30	0.00				
1.15	0.00	98.30	0.00				
1.20	0.00	98.30	0.00				
1.25	0.00	98.30	0.00				
1.30	0.00	98.30	0.00				
1.35	0.00	98.30	0.00				
1.40	0.00	98.30	0.00				
1.45	0.00	98.30	0.00				
1.50	0.00	98.30	0.00				
1.55	0.00	98.30	0.00				
1.60	0.00	98.30	0.00				
1.65	0.00	98.30	0.00				
1.70	0.00	98.30	0.00				
1.75	0.00	98.30	0.00				
1.80	0.00	98.30	0.00				
1.85	0.00	98.30	0.00				
1.90	0.00	98.30	0.00				
1.95	0.00	98.30	0.00				
2.00	0.00	98.30	0.00				
2.05	0.00	98.30	0.00				
2.10	0.00	98.30	0.00				
2.15	0.00	98.30	0.00				
2.20	0.00	98.30	0.00				
2.25	0.00	98.30	0.00				
2.30	0.00	98.30	0.00				
2.35	0.00	98.30	0.00				
2.40	0.00	98.30	0.00				
2.45	0.00	98.30	0.00				
2.50	0.00	98.30	0.00				

Stage-Discharge for Pond 2P: BMP B - MWS

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
98.30	0.00	99.32	0.39	100.34	0.59
98.32	0.00	99.34	0.39	100.36	0.59
98.34	0.00	99.36	0.40	100.38	0.59
98.36	0.01	99.38	0.40	100.40	0.60
98.38	0.01	99.40	0.41	100.42	0.60
98.40	0.02	99.42	0.41	100.44	0.60
98.42	0.03	99.44	0.42	100.46	0.61
98.44	0.04	99.46	0.42	100.48	0.61
98.46	0.05	99.48	0.42	100.50	0.61
98.48	0.06	99.50	0.43	100.52	0.61
98.50	0.07	99.52	0.43	100.54	0.62
98.52	0.08	99.54	0.44	100.56	0.62
98.54	0.10	99.56	0.44	100.58	0.62
98.56	0.11	99.58	0.45	100.60	0.63
98.58	0.12	99.60	0.45	100.62	0.63
98.60	0.14	99.62	0.45	100.64	0.63
98.62	0.15	99.64	0.46	100.66	0.64
98.64	0.16	99.66	0.46		
98.66	0.18	99.68	0.47		
98.68	0.19	99.70	0.47		
98.70	0.20	99.72	0.47		
98.72	0.20	99.74	0.48		
98.74	0.20	99.76	0.48		
98.76	0.21	99.78	0.49		
98.78	0.22	99.80	0.49		
98.80	0.23	99.82	0.49		
98.82	0.23	99.84	0.50		
98.84	0.24	99.86	0.50		
98.86	0.25	99.88	0.51		
98.88	0.26	99.90	0.51		
98.90	0.26	99.92	0.51		
98.92	0.27	99.94	0.52		
98.94	0.28	99.96	0.52		
98.96	0.28	99.98	0.52		
98.98	0.29	100.00	0.53		
99.00	0.30	100.02	0.53		
99.02	0.30	100.04	0.54		
99.04	0.31	100.06	0.54		
99.06	0.32	100.08	0.54		
99.08	0.32	100.10	0.55		
99.10	0.33	100.12	0.55		
99.12	0.33	100.14	0.55		
99.14	0.34	100.16	0.56		
99.16	0.35	100.18	0.56		
99.18	0.35	100.20	0.56		
99.20	0.36	100.22	0.57		
99.22	0.36	100.24	0.57		
99.24	0.37	100.26	0.57		
99.26	0.37	100.28	0.58		
99.28	0.38	100.30	0.58		
99.30	0.38	100.32	0.58		

Summary for Pond 3P: OUTLET 2 - 12" Pipe

[57] Hint: Peaked at 98.32' (Flood elevation advised)

[63] Warning: Exceeded Reach 5R INLET depth by 0.93' @ 0.11 hrs

Inflow Area = 123,856 sf, 82.25% Impervious, Inflow Depth > 0.46" for 100-Year event
 Inflow = 4.66 cfs @ 0.11 hrs, Volume= 4,697 cf
 Outflow = 4.66 cfs @ 0.11 hrs, Volume= 4,697 cf, Atten= 0%, Lag= 0.0 min
 Primary = 4.66 cfs @ 0.11 hrs, Volume= 4,697 cf

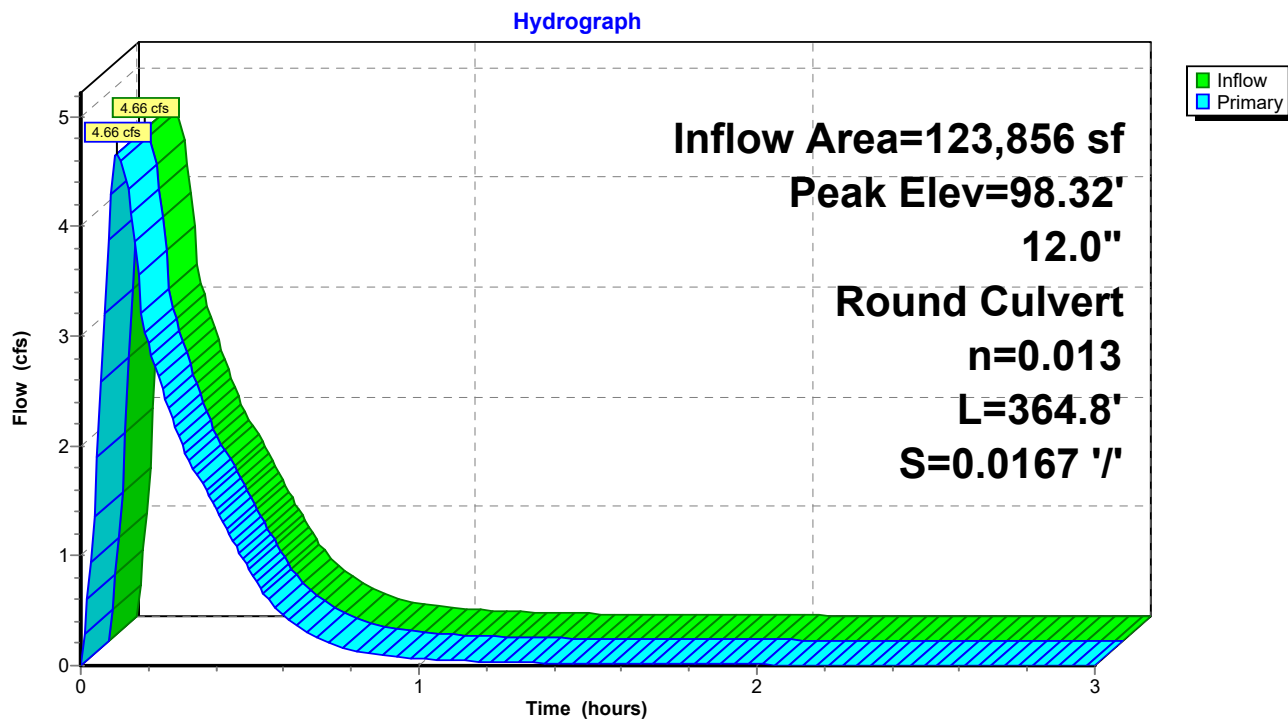
Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 98.32' @ 0.11 hrs

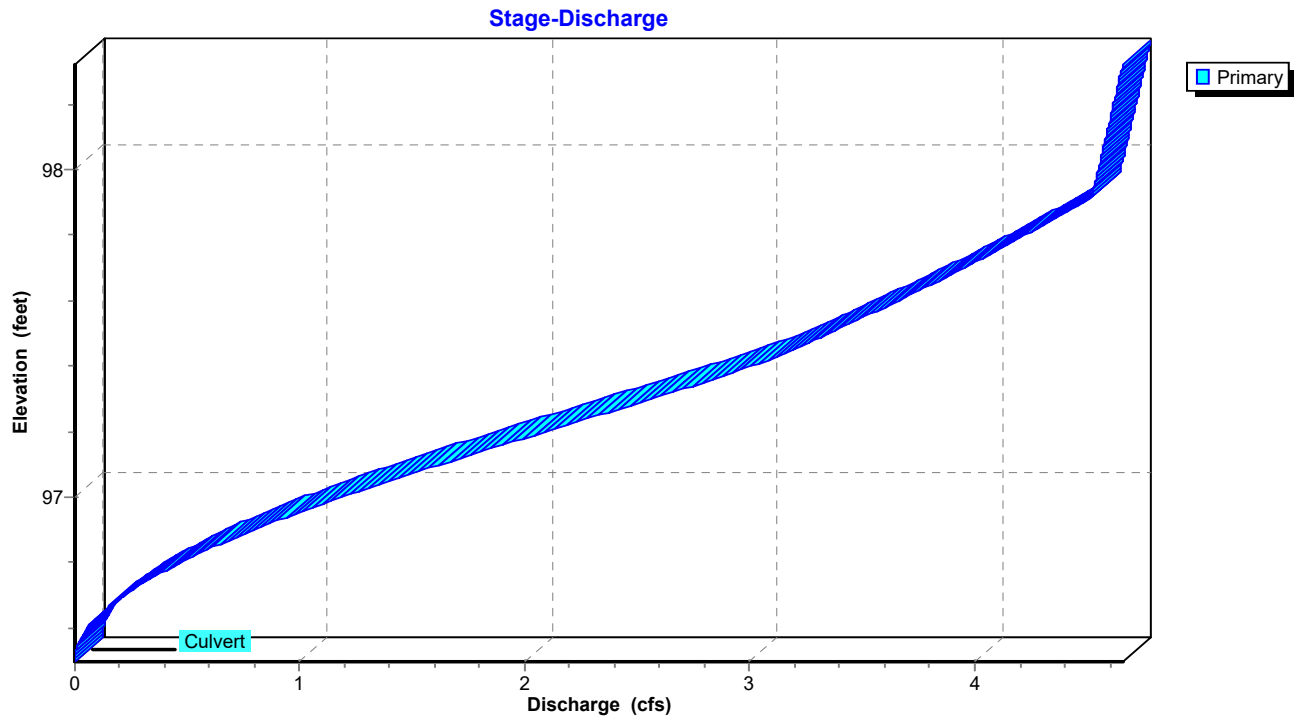
Device	Routing	Invert	Outlet Devices
#1	Primary	96.50'	12.0" Round Culvert L= 364.8' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 96.50' / 90.40' S= 0.0167 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=4.65 cfs @ 0.11 hrs HW=98.30' (Free Discharge)

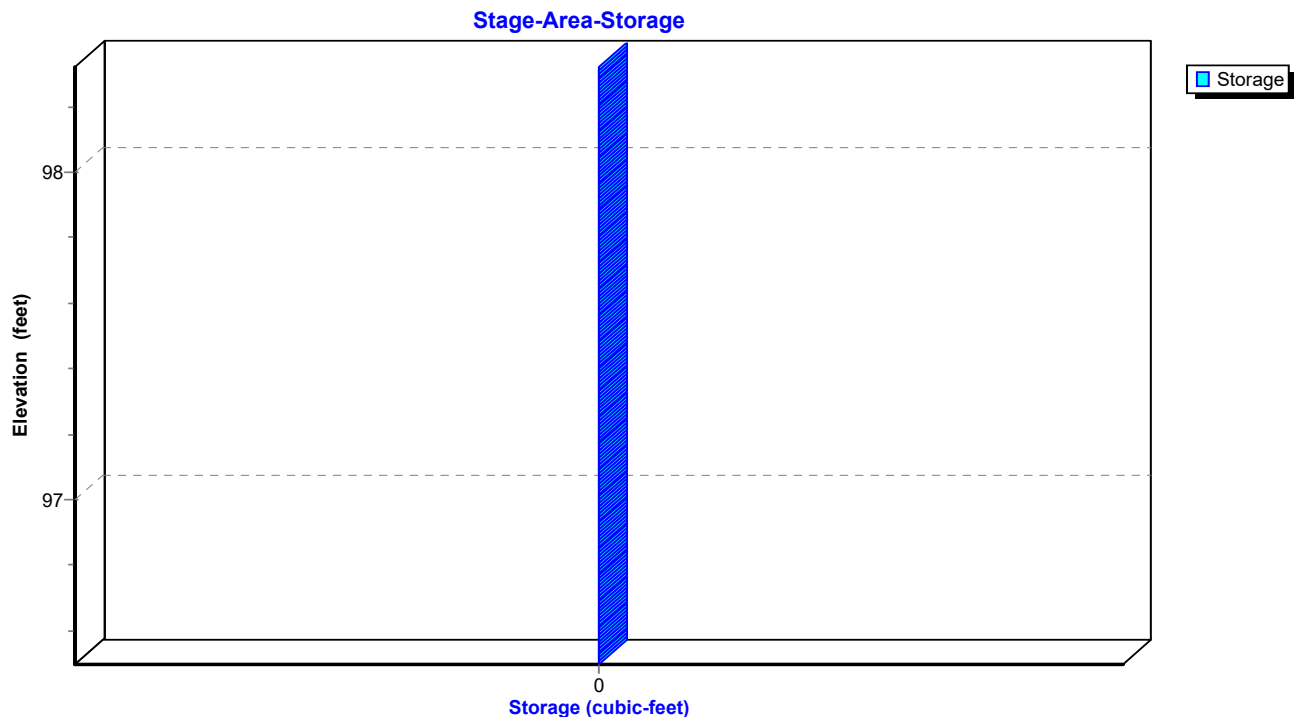
1=Culvert (Barrel Controls 4.65 cfs @ 5.92 fps)

Pond 3P: OUTLET 2 - 12" Pipe**OUTLET 2 Q_{100} = 4.66 CFS**

Pond 3P: OUTLET 2 - 12" Pipe



Pond 3P: OUTLET 2 - 12" Pipe



Hydrograph for Pond 3P: OUTLET 2 - 12" Pipe

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	96.50	0.00	2.55	0.00	96.53	0.00
0.05	1.89	97.16	1.89	2.60	0.00	96.53	0.00
0.10	4.64	98.26	4.64	2.65	0.00	96.53	0.00
0.15	4.12	97.76	4.12	2.70	0.00	96.53	0.00
0.20	2.93	97.38	2.93	2.75	0.00	96.53	0.00
0.25	2.43	97.27	2.43	2.80	0.00	96.53	0.00
0.30	2.01	97.18	2.01	2.85	0.00	96.53	0.00
0.35	1.71	97.12	1.71	2.90	0.00	96.53	0.00
0.40	1.42	97.06	1.42	2.95	0.00	96.53	0.00
0.45	1.13	96.99	1.13	3.00	0.00	96.53	0.00
0.50	0.88	96.92	0.88				
0.55	0.62	96.85	0.62				
0.60	0.45	96.80	0.45				
0.65	0.34	96.76	0.34				
0.70	0.26	96.72	0.26				
0.75	0.19	96.69	0.19				
0.80	0.15	96.66	0.15				
0.85	0.11	96.65	0.11				
0.90	0.09	96.63	0.09				
0.95	0.08	96.62	0.08				
1.00	0.06	96.61	0.06				
1.05	0.05	96.60	0.05				
1.10	0.05	96.59	0.05				
1.15	0.04	96.59	0.04				
1.20	0.03	96.58	0.03				
1.25	0.03	96.58	0.03				
1.30	0.03	96.57	0.03				
1.35	0.02	96.57	0.02				
1.40	0.02	96.57	0.02				
1.45	0.02	96.56	0.02				
1.50	0.02	96.56	0.02				
1.55	0.02	96.56	0.02				
1.60	0.01	96.56	0.01				
1.65	0.01	96.55	0.01				
1.70	0.01	96.55	0.01				
1.75	0.01	96.55	0.01				
1.80	0.01	96.55	0.01				
1.85	0.01	96.55	0.01				
1.90	0.01	96.54	0.01				
1.95	0.01	96.54	0.01				
2.00	0.01	96.54	0.01				
2.05	0.01	96.54	0.01				
2.10	0.01	96.54	0.01				
2.15	0.01	96.54	0.01				
2.20	0.01	96.54	0.01				
2.25	0.01	96.54	0.01				
2.30	0.01	96.54	0.01				
2.35	0.01	96.53	0.01				
2.40	0.01	96.53	0.01				
2.45	0.00	96.53	0.00				
2.50	0.00	96.53	0.00				

Stage-Discharge for Pond 3P: OUTLET 2 - 12" Pipe

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
96.50	0.00	97.01	1.22	97.52	3.41	98.03	4.56
96.51	0.00	97.02	1.27	97.53	3.44	98.04	4.57
96.52	0.00	97.03	1.31	97.54	3.47	98.05	4.57
96.53	0.00	97.04	1.35	97.55	3.51	98.06	4.57
96.54	0.01	97.05	1.40	97.56	3.54	98.07	4.58
96.55	0.01	97.06	1.44	97.57	3.57	98.08	4.58
96.56	0.02	97.07	1.49	97.58	3.60	98.09	4.58
96.57	0.02	97.08	1.53	97.59	3.63	98.10	4.59
96.58	0.03	97.09	1.58	97.60	3.66	98.11	4.59
96.59	0.04	97.10	1.62	97.61	3.69	98.12	4.59
96.60	0.05	97.11	1.67	97.62	3.72	98.13	4.60
96.61	0.06	97.12	1.71	97.63	3.75	98.14	4.60
96.62	0.08	97.13	1.76	97.64	3.78	98.15	4.60
96.63	0.09	97.14	1.81	97.65	3.81	98.16	4.61
96.64	0.11	97.15	1.85	97.66	3.84	98.17	4.61
96.65	0.12	97.16	1.90	97.67	3.87	98.18	4.61
96.66	0.14	97.17	1.95	97.68	3.90	98.19	4.62
96.67	0.16	97.18	2.00	97.69	3.93	98.20	4.62
96.68	0.17	97.19	2.04	97.70	3.95	98.21	4.62
96.69	0.19	97.20	2.09	97.71	3.98	98.22	4.63
96.70	0.21	97.21	2.14	97.72	4.01	98.23	4.63
96.71	0.23	97.22	2.19	97.73	4.04	98.24	4.63
96.72	0.26	97.23	2.23	97.74	4.07	98.25	4.64
96.73	0.28	97.24	2.28	97.75	4.09	98.26	4.64
96.74	0.30	97.25	2.33	97.76	4.12	98.27	4.64
96.75	0.33	97.26	2.38	97.77	4.15	98.28	4.65
96.76	0.35	97.27	2.42	97.78	4.17	98.29	4.65
96.77	0.38	97.28	2.47	97.79	4.20	98.30	4.65
96.78	0.41	97.29	2.52	97.80	4.23	98.31	4.66
96.79	0.43	97.30	2.56	97.81	4.25	98.32	4.66
96.80	0.46	97.31	2.61	97.82	4.28		
96.81	0.49	97.32	2.66	97.83	4.31		
96.82	0.52	97.33	2.70	97.84	4.33		
96.83	0.55	97.34	2.75	97.85	4.36		
96.84	0.58	97.35	2.79	97.86	4.38		
96.85	0.62	97.36	2.84	97.87	4.41		
96.86	0.65	97.37	2.88	97.88	4.43		
96.87	0.68	97.38	2.92	97.89	4.46		
96.88	0.72	97.39	2.96	97.90	4.48		
96.89	0.75	97.40	3.01	97.91	4.51		
96.90	0.79	97.41	3.05	97.92	4.52		
96.91	0.83	97.42	3.09	97.93	4.53		
96.92	0.86	97.43	3.12	97.94	4.53		
96.93	0.90	97.44	3.16	97.95	4.53		
96.94	0.94	97.45	3.20	97.96	4.54		
96.95	0.98	97.46	3.23	97.97	4.54		
96.96	1.02	97.47	3.26	97.98	4.55		
96.97	1.06	97.48	3.29	97.99	4.55		
96.98	1.10	97.49	3.32	98.00	4.55		
96.99	1.14	97.50	3.34	98.01	4.56		
97.00	1.18	97.51	3.38	98.02	4.56		

Summary for Pond 4P: BMP A - Biofiltration Basin

Inflow Area = 8,600 sf, 74.73% Impervious, Inflow Depth = 0.44" for 100-Year event
 Inflow = 0.87 cfs @ 0.09 hrs, Volume= 313 cf
 Outflow = 0.85 cfs @ 0.10 hrs, Volume= 313 cf, Atten= 3%, Lag= 0.4 min
 Primary = 0.85 cfs @ 0.10 hrs, Volume= 313 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 106.09' @ 0.10 hrs Surf.Area= 380 sf Storage= 46 cf

Plug-Flow detention time= 1.3 min calculated for 313 cf (100% of inflow)

Center-of-Mass det. time= 1.1 min (6.6 - 5.5)

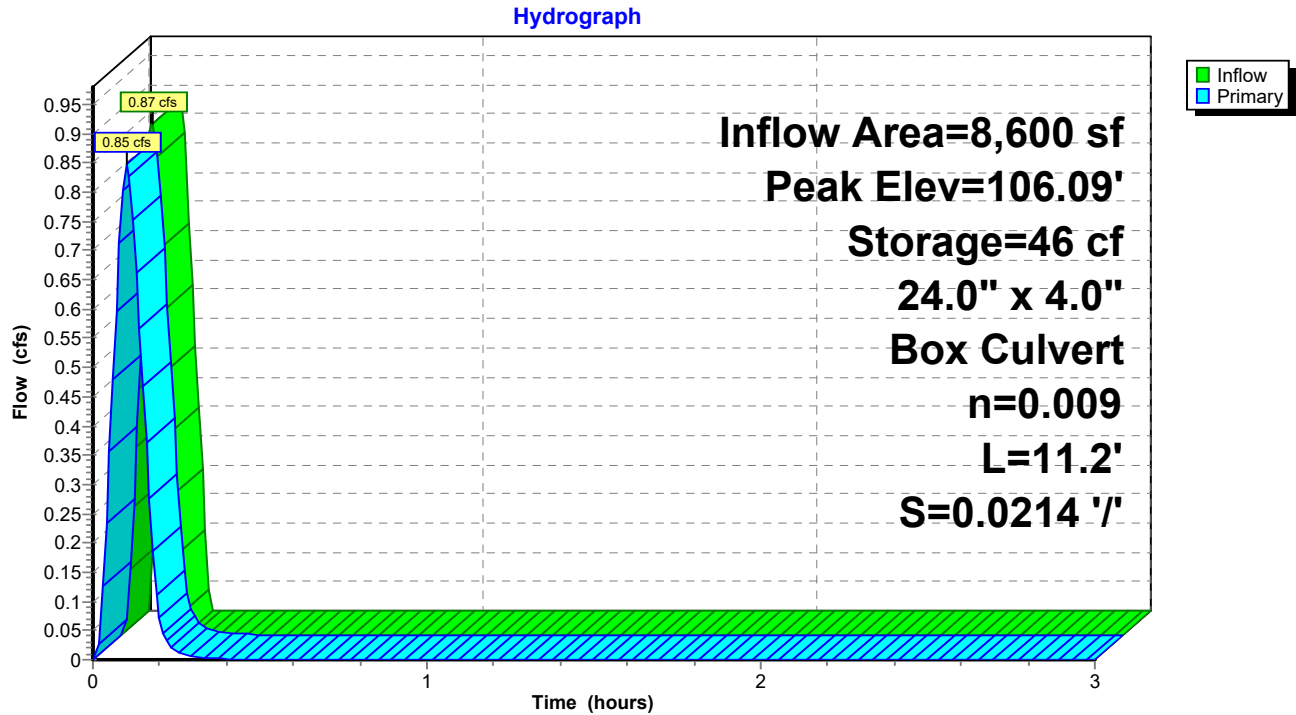
Volume	Invert	Avail.Storage	Storage Description	
#1	105.79'	612 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
105.79	380	0.0	0	0
105.80	380	40.0	2	2
106.79	380	40.0	150	152
106.80	380	10.0	0	152
108.79	380	10.0	76	228
108.80	380	100.0	4	232
109.80	380	100.0	380	612

Device	Routing	Invert	Outlet Devices
#1	Primary	105.79'	24.0" W x 4.0" H Box Culvert L= 11.2' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 105.79' / 105.55' S= 0.0214 '/' Cc= 0.900 n= 0.009, Flow Area= 0.67 sf

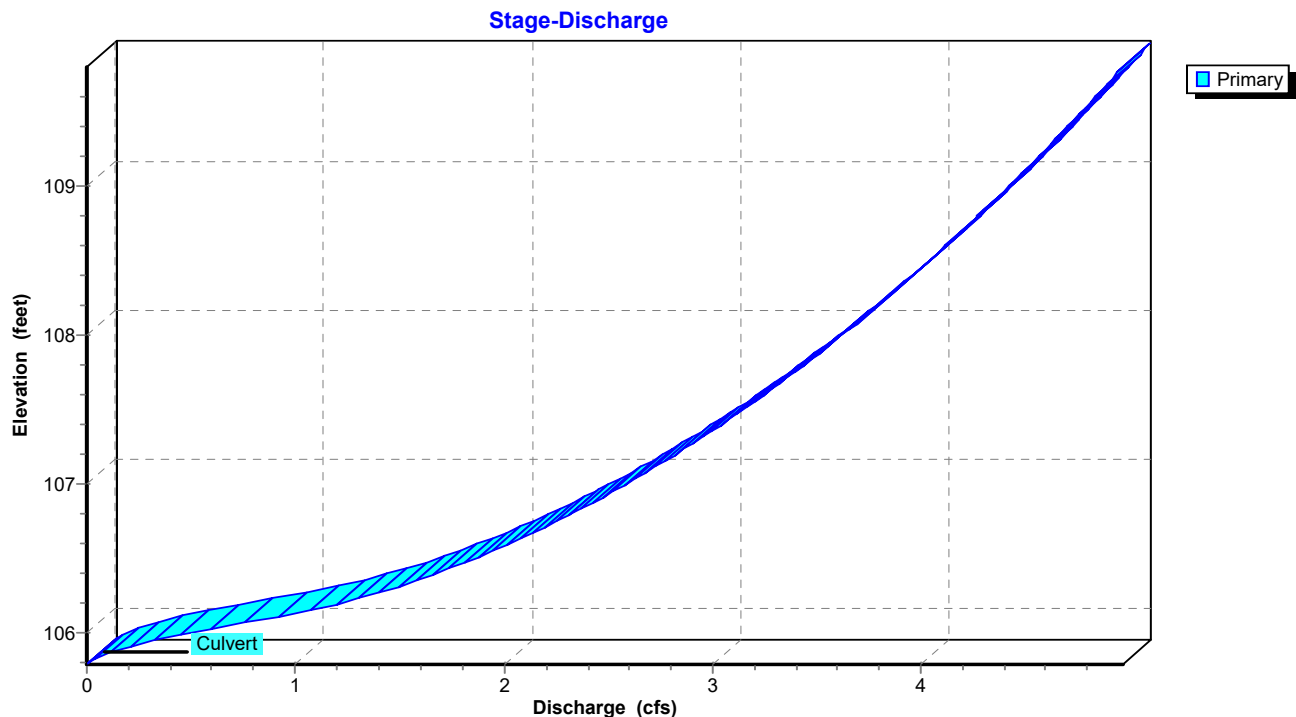
Primary OutFlow Max=0.84 cfs @ 0.10 hrs HW=106.09' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 0.84 cfs @ 1.39 fps)

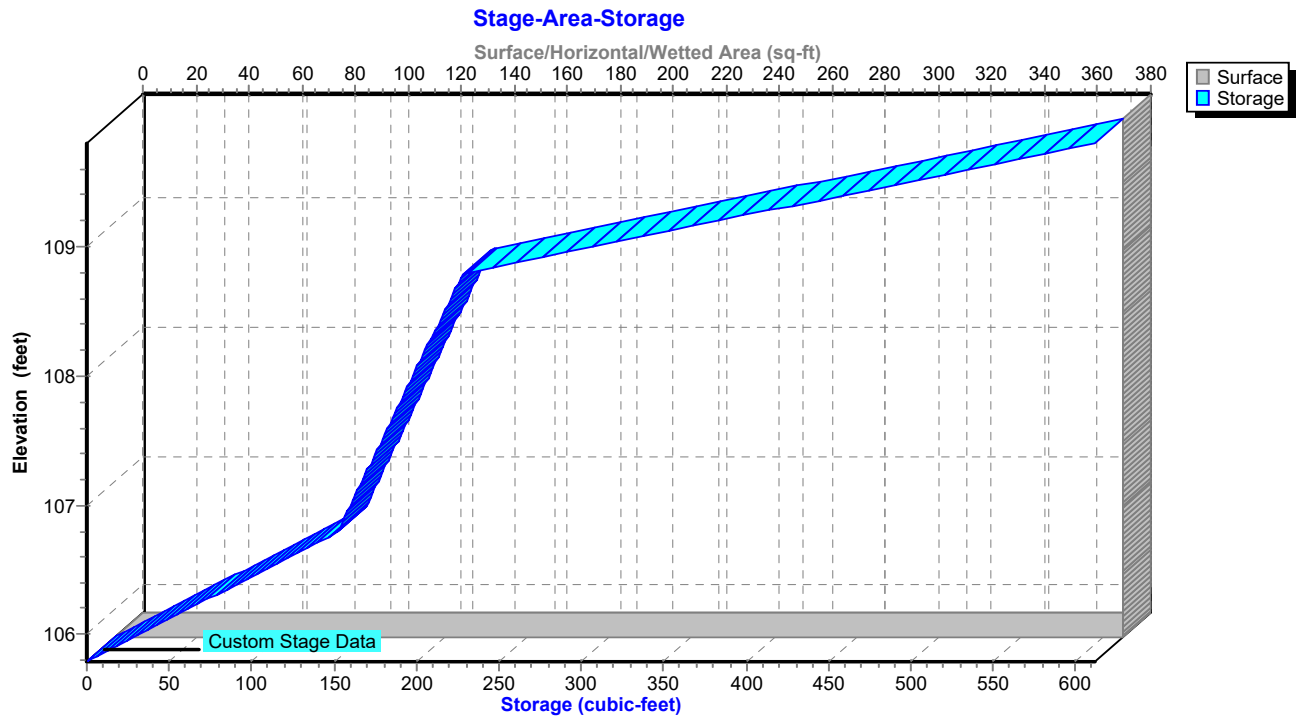
Pond 4P: BMP A - Biofiltration Basin



Pond 4P: BMP A - Biofiltration Basin



Pond 4P: BMP A - Biofiltration Basin



Hydrograph for Pond 4P: BMP A - Biofiltration Basin

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	105.79	0.00
0.10	0.87	46	106.09	0.85
0.20	0.00	9	105.85	0.07
0.30	0.00	1	105.80	0.00
0.40	0.00	0	105.79	0.00
0.50	0.00	0	105.79	0.00
0.60	0.00	0	105.79	0.00
0.70	0.00	0	105.79	0.00
0.80	0.00	0	105.79	0.00
0.90	0.00	0	105.79	0.00
1.00	0.00	0	105.79	0.00
1.10	0.00	0	105.79	0.00
1.20	0.00	0	105.79	0.00
1.30	0.00	0	105.79	0.00
1.40	0.00	0	105.79	0.00
1.50	0.00	0	105.79	0.00
1.60	0.00	0	105.79	0.00
1.70	0.00	0	105.79	0.00
1.80	0.00	0	105.79	0.00
1.90	0.00	0	105.79	0.00
2.00	0.00	0	105.79	0.00
2.10	0.00	0	105.79	0.00
2.20	0.00	0	105.79	0.00
2.30	0.00	0	105.79	0.00
2.40	0.00	0	105.79	0.00
2.50	0.00	0	105.79	0.00
2.60	0.00	0	105.79	0.00
2.70	0.00	0	105.79	0.00
2.80	0.00	0	105.79	0.00
2.90	0.00	0	105.79	0.00
3.00	0.00	0	105.79	0.00

Stage-Discharge for Pond 4P: BMP A - Biofiltration Basin

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
105.79	0.00	106.81	2.34	107.83	3.47	108.85	4.31
105.81	0.01	106.83	2.36	107.85	3.49	108.87	4.32
105.83	0.04	106.85	2.39	107.87	3.50	108.89	4.34
105.85	0.07	106.87	2.42	107.89	3.52	108.91	4.35
105.87	0.11	106.89	2.44	107.91	3.54	108.93	4.37
105.89	0.16	106.91	2.47	107.93	3.56	108.95	4.38
105.91	0.21	106.93	2.50	107.95	3.58	108.97	4.40
105.93	0.27	106.95	2.52	107.97	3.59	108.99	4.41
105.95	0.32	106.97	2.55	107.99	3.61	109.01	4.43
105.97	0.39	106.99	2.57	108.01	3.63	109.03	4.44
105.99	0.45	107.01	2.60	108.03	3.65	109.05	4.46
106.01	0.52	107.03	2.62	108.05	3.67	109.07	4.47
106.03	0.60	107.05	2.65	108.07	3.68	109.09	4.49
106.05	0.67	107.07	2.67	108.09	3.70	109.11	4.50
106.07	0.75	107.09	2.70	108.11	3.72	109.13	4.51
106.09	0.83	107.11	2.72	108.13	3.74	109.15	4.53
106.11	0.92	107.13	2.74	108.15	3.75	109.17	4.54
106.13	1.00	107.15	2.77	108.17	3.77	109.19	4.56
106.15	1.07	107.17	2.79	108.19	3.79	109.21	4.57
106.17	1.14	107.19	2.81	108.21	3.80	109.23	4.58
106.19	1.19	107.21	2.83	108.23	3.82	109.25	4.60
106.21	1.25	107.23	2.86	108.25	3.84	109.27	4.61
106.23	1.30	107.25	2.88	108.27	3.85	109.29	4.63
106.25	1.35	107.27	2.90	108.29	3.87	109.31	4.64
106.27	1.40	107.29	2.92	108.31	3.89	109.33	4.65
106.29	1.45	107.31	2.95	108.33	3.90	109.35	4.67
106.31	1.49	107.33	2.97	108.35	3.92	109.37	4.68
106.33	1.54	107.35	2.99	108.37	3.94	109.39	4.70
106.35	1.58	107.37	3.01	108.39	3.95	109.41	4.71
106.37	1.62	107.39	3.03	108.41	3.97	109.43	4.72
106.39	1.66	107.41	3.05	108.43	3.98	109.45	4.74
106.41	1.70	107.43	3.07	108.45	4.00	109.47	4.75
106.43	1.73	107.45	3.10	108.47	4.02	109.49	4.76
106.45	1.77	107.47	3.12	108.49	4.03	109.51	4.78
106.47	1.81	107.49	3.14	108.51	4.05	109.53	4.79
106.49	1.84	107.51	3.16	108.53	4.06	109.55	4.80
106.51	1.88	107.53	3.18	108.55	4.08	109.57	4.82
106.53	1.91	107.55	3.20	108.57	4.10	109.59	4.83
106.55	1.95	107.57	3.22	108.59	4.11	109.61	4.84
106.57	1.98	107.59	3.24	108.61	4.13	109.63	4.86
106.59	2.01	107.61	3.26	108.63	4.14	109.65	4.87
106.61	2.04	107.63	3.28	108.65	4.16	109.67	4.88
106.63	2.07	107.65	3.30	108.67	4.17	109.69	4.90
106.65	2.11	107.67	3.32	108.69	4.19	109.71	4.91
106.67	2.14	107.69	3.34	108.71	4.20	109.73	4.92
106.69	2.17	107.71	3.35	108.73	4.22	109.75	4.94
106.71	2.20	107.73	3.37	108.75	4.23	109.77	4.95
106.73	2.22	107.75	3.39	108.77	4.25	109.79	4.96
106.75	2.25	107.77	3.41	108.79	4.27		
106.77	2.28	107.79	3.43	108.81	4.28		
106.79	2.31	107.81	3.45	108.83	4.30		

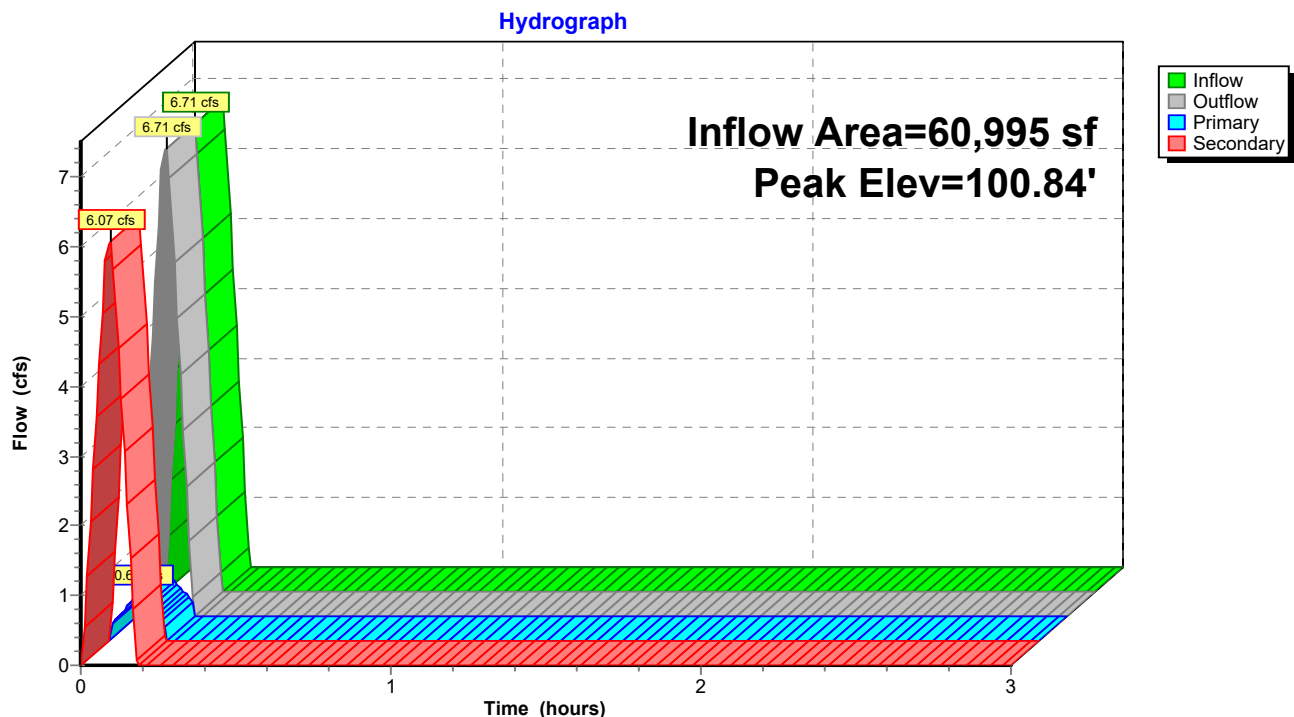
Summary for Pond 5P: Diversion Manhole

[57] Hint: Peaked at 100.84' (Flood elevation advised)

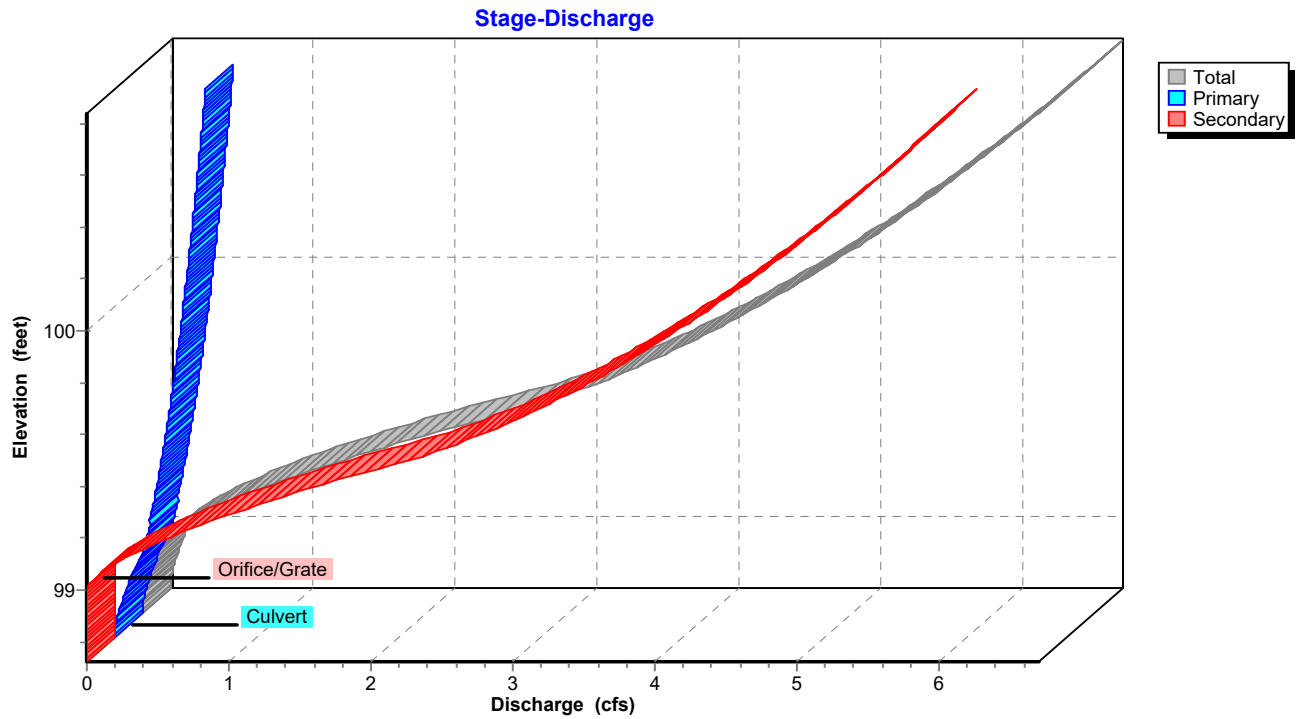
Inflow Area = 60,995 sf, 83.46% Impervious, Inflow Depth = 0.47" for 100-Year event
 Inflow = 6.71 cfs @ 0.09 hrs, Volume= 2,403 cf
 Outflow = 6.71 cfs @ 0.09 hrs, Volume= 2,403 cf, Atten= 0%, Lag= 0.0 min
 Primary = 0.64 cfs @ 0.09 hrs, Volume= 280 cf
 Secondary = 6.07 cfs @ 0.09 hrs, Volume= 2,123 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs / 2
 Peak Elev= 100.84' @ 0.09 hrs

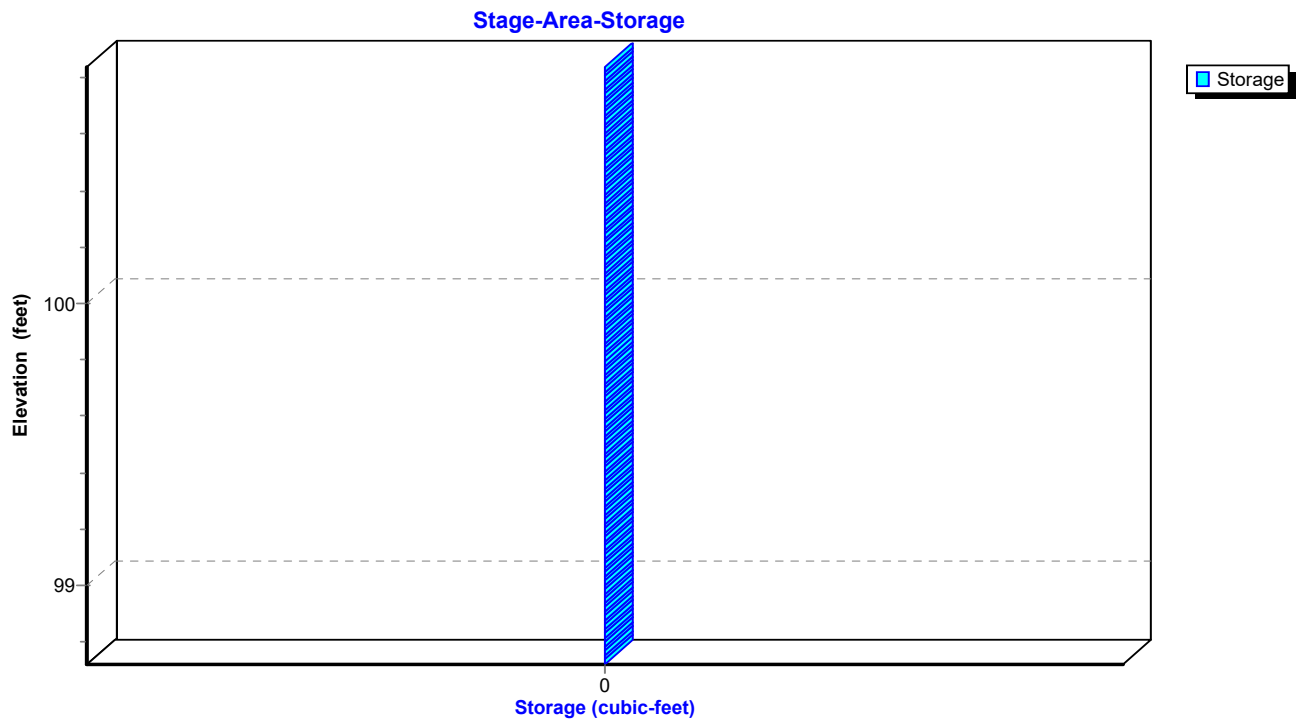
Device	Routing	Invert	Outlet Devices
#1	Primary	98.72'	4.0" Round Culvert L= 17.7' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 98.72' / 98.55' S= 0.0096 '/' Cc= 0.900 n= 0.009, Flow Area= 0.09 sf
#2	Secondary	99.00'	24.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.64 cfs @ 0.09 hrs HW=100.83' (Free Discharge)↑**1=Culvert** (Barrel Controls 0.64 cfs @ 7.29 fps)**Secondary OutFlow** Max=6.04 cfs @ 0.09 hrs HW=100.83' (Free Discharge)↑**2=Orifice/Grate** (Orifice Controls 6.04 cfs @ 6.04 fps)**Pond 5P: Diversion Manhole**

Pond 5P: Diversion Manhole



Pond 5P: Diversion Manhole



Hydrograph for Pond 5P: Diversion Manhole

Time (hours)	Inflow (cfs)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	98.72	0.00	0.00	0.00
0.10	6.67	100.83	6.67	0.64	6.04
0.20	0.00	98.72	0.00	0.00	0.00
0.30	0.00	98.72	0.00	0.00	0.00
0.40	0.00	98.72	0.00	0.00	0.00
0.50	0.00	98.72	0.00	0.00	0.00
0.60	0.00	98.72	0.00	0.00	0.00
0.70	0.00	98.72	0.00	0.00	0.00
0.80	0.00	98.72	0.00	0.00	0.00
0.90	0.00	98.72	0.00	0.00	0.00
1.00	0.00	98.72	0.00	0.00	0.00
1.10	0.00	98.72	0.00	0.00	0.00
1.20	0.00	98.72	0.00	0.00	0.00
1.30	0.00	98.72	0.00	0.00	0.00
1.40	0.00	98.72	0.00	0.00	0.00
1.50	0.00	98.72	0.00	0.00	0.00
1.60	0.00	98.72	0.00	0.00	0.00
1.70	0.00	98.72	0.00	0.00	0.00
1.80	0.00	98.72	0.00	0.00	0.00
1.90	0.00	98.72	0.00	0.00	0.00
2.00	0.00	98.72	0.00	0.00	0.00
2.10	0.00	98.72	0.00	0.00	0.00
2.20	0.00	98.72	0.00	0.00	0.00
2.30	0.00	98.72	0.00	0.00	0.00
2.40	0.00	98.72	0.00	0.00	0.00
2.50	0.00	98.72	0.00	0.00	0.00
2.60	0.00	98.72	0.00	0.00	0.00
2.70	0.00	98.72	0.00	0.00	0.00
2.80	0.00	98.72	0.00	0.00	0.00
2.90	0.00	98.72	0.00	0.00	0.00
3.00	0.00	98.72	0.00	0.00	0.00

Stage-Discharge for Pond 5P: Diversion Manhole

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
98.72	0.00	0.00	0.00
98.77	0.01	0.01	0.00
98.82	0.03	0.03	0.00
98.87	0.06	0.06	0.00
98.92	0.09	0.09	0.00
98.97	0.13	0.13	0.00
99.02	0.19	0.17	0.02
99.07	0.33	0.21	0.12
99.12	0.50	0.24	0.27
99.17	0.69	0.24	0.45
99.22	0.93	0.26	0.66
99.27	1.18	0.28	0.90
99.32	1.46	0.30	1.16
99.37	1.76	0.32	1.44
99.42	2.08	0.33	1.75
99.47	2.42	0.35	2.07
99.52	2.75	0.36	2.39
99.57	3.02	0.38	2.64
99.62	3.26	0.39	2.87
99.67	3.48	0.41	3.07
99.72	3.68	0.42	3.26
99.77	3.87	0.43	3.44
99.82	4.05	0.44	3.60
99.87	4.22	0.45	3.76
99.92	4.38	0.46	3.92
99.97	4.54	0.48	4.06
100.02	4.69	0.49	4.21
100.07	4.84	0.50	4.34
100.12	4.98	0.51	4.48
100.17	5.12	0.52	4.60
100.22	5.26	0.53	4.73
100.27	5.39	0.54	4.85
100.32	5.52	0.55	4.97
100.37	5.64	0.56	5.09
100.42	5.76	0.57	5.20
100.47	5.88	0.58	5.31
100.52	6.00	0.58	5.42
100.57	6.12	0.59	5.52
100.62	6.23	0.60	5.63
100.67	6.34	0.61	5.73
100.72	6.45	0.62	5.83
100.77	6.56	0.63	5.93
100.82	6.66	0.64	6.03

Summary for Pond 6P: BMP D - MWS

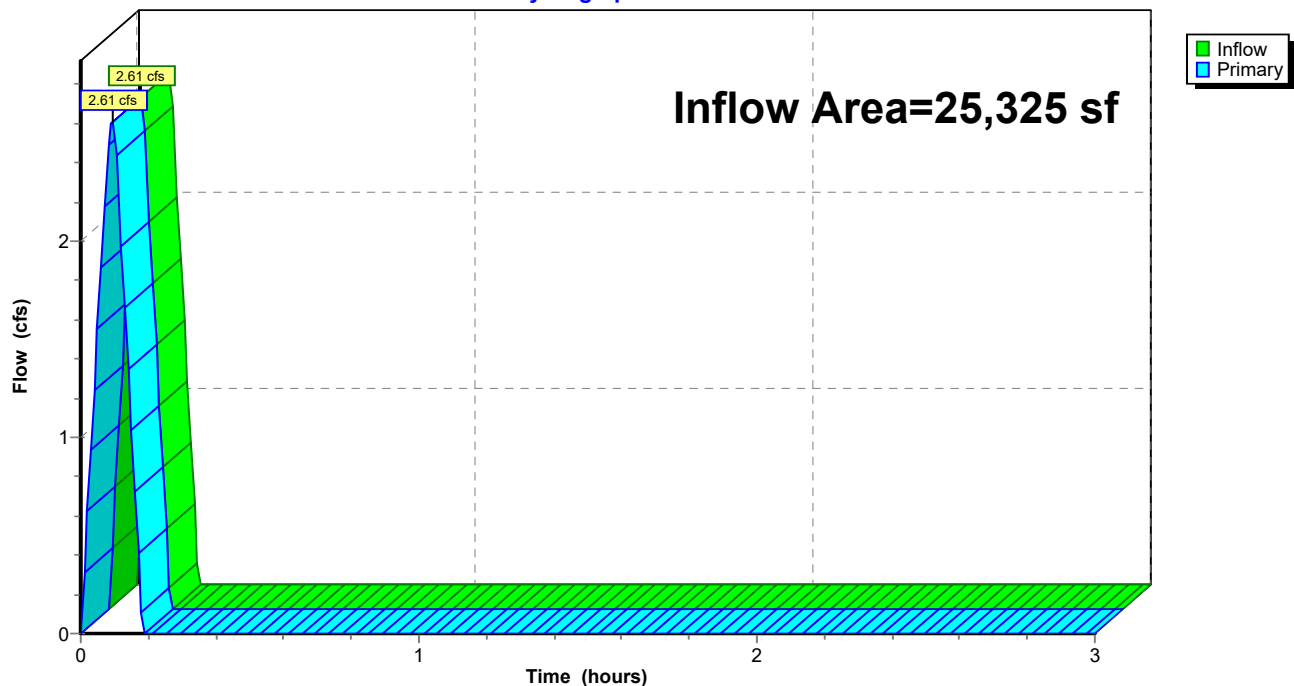
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 25,325 sf, 75.01% Impervious, Inflow Depth = 0.44" for 100-Year event
Inflow = 2.61 cfs @ 0.09 hrs, Volume= 935 cf
Primary = 2.61 cfs @ 0.09 hrs, Volume= 935 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Pond 6P: BMP D - MWS

Hydrograph



Hydrograph for Pond 6P: BMP D - MWS

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	2.55	0.00		0.00
0.05	1.56		1.56	2.60	0.00		0.00
0.10	2.60		2.60	2.65	0.00		0.00
0.15	1.04		1.04	2.70	0.00		0.00
0.20	0.00		0.00	2.75	0.00		0.00
0.25	0.00		0.00	2.80	0.00		0.00
0.30	0.00		0.00	2.85	0.00		0.00
0.35	0.00		0.00	2.90	0.00		0.00
0.40	0.00		0.00	2.95	0.00		0.00
0.45	0.00		0.00	3.00	0.00		0.00
0.50	0.00		0.00				
0.55	0.00		0.00				
0.60	0.00		0.00				
0.65	0.00		0.00				
0.70	0.00		0.00				
0.75	0.00		0.00				
0.80	0.00		0.00				
0.85	0.00		0.00				
0.90	0.00		0.00				
0.95	0.00		0.00				
1.00	0.00		0.00				
1.05	0.00		0.00				
1.10	0.00		0.00				
1.15	0.00		0.00				
1.20	0.00		0.00				
1.25	0.00		0.00				
1.30	0.00		0.00				
1.35	0.00		0.00				
1.40	0.00		0.00				
1.45	0.00		0.00				
1.50	0.00		0.00				
1.55	0.00		0.00				
1.60	0.00		0.00				
1.65	0.00		0.00				
1.70	0.00		0.00				
1.75	0.00		0.00				
1.80	0.00		0.00				
1.85	0.00		0.00				
1.90	0.00		0.00				
1.95	0.00		0.00				
2.00	0.00		0.00				
2.05	0.00		0.00				
2.10	0.00		0.00				
2.15	0.00		0.00				
2.20	0.00		0.00				
2.25	0.00		0.00				
2.30	0.00		0.00				
2.35	0.00		0.00				
2.40	0.00		0.00				
2.45	0.00		0.00				
2.50	0.00		0.00				

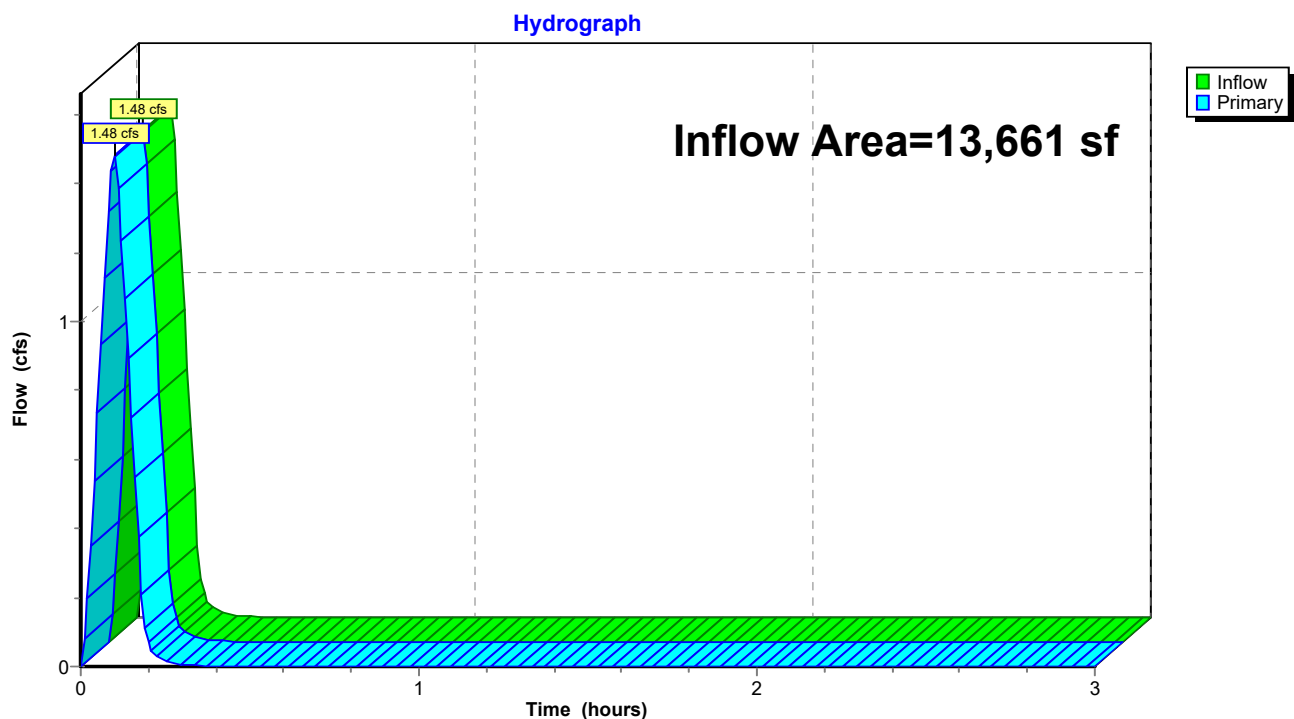
Summary for Pond 10P: OUTLET 1 - Parkway Culvert

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 13,661 sf, 84.09% Impervious, Inflow Depth = 0.48" for 100-Year event
Inflow = 1.48 cfs @ 0.10 hrs, Volume= 541 cf
Primary = 1.48 cfs @ 0.10 hrs, Volume= 541 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Pond 10P: OUTLET 1 - Parkway Culvert



OUTLET 1 $Q_{100} = 1.48$ CFS

Hydrograph for Pond 10P: OUTLET 1 - Parkway Culvert

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00		0.00	2.55	0.00		0.00
0.05	0.73		0.73	2.60	0.00		0.00
0.10	1.48		1.48	2.65	0.00		0.00
0.15	0.72		0.72	2.70	0.00		0.00
0.20	0.07		0.07	2.75	0.00		0.00
0.25	0.01		0.01	2.80	0.00		0.00
0.30	0.00		0.00	2.85	0.00		0.00
0.35	0.00		0.00	2.90	0.00		0.00
0.40	0.00		0.00	2.95	0.00		0.00
0.45	0.00		0.00	3.00	0.00		0.00
0.50	0.00		0.00				
0.55	0.00		0.00				
0.60	0.00		0.00				
0.65	0.00		0.00				
0.70	0.00		0.00				
0.75	0.00		0.00				
0.80	0.00		0.00				
0.85	0.00		0.00				
0.90	0.00		0.00				
0.95	0.00		0.00				
1.00	0.00		0.00				
1.05	0.00		0.00				
1.10	0.00		0.00				
1.15	0.00		0.00				
1.20	0.00		0.00				
1.25	0.00		0.00				
1.30	0.00		0.00				
1.35	0.00		0.00				
1.40	0.00		0.00				
1.45	0.00		0.00				
1.50	0.00		0.00				
1.55	0.00		0.00				
1.60	0.00		0.00				
1.65	0.00		0.00				
1.70	0.00		0.00				
1.75	0.00		0.00				
1.80	0.00		0.00				
1.85	0.00		0.00				
1.90	0.00		0.00				
1.95	0.00		0.00				
2.00	0.00		0.00				
2.05	0.00		0.00				
2.10	0.00		0.00				
2.15	0.00		0.00				
2.20	0.00		0.00				
2.25	0.00		0.00				
2.30	0.00		0.00				
2.35	0.00		0.00				
2.40	0.00		0.00				
2.45	0.00		0.00				
2.50	0.00		0.00				

Summary for Pond 11P: Detention A

[62] Hint: Exceeded Reach 12R OUTLET depth by 0.13' @ 0.20 hrs

Inflow Area = 37,536 sf, 85.17% Impervious, Inflow Depth = 0.48" for 100-Year event
 Inflow = 4.21 cfs @ 0.10 hrs, Volume= 1,510 cf
 Outflow = 1.07 cfs @ 0.17 hrs, Volume= 1,371 cf, Atten= 75%, Lag= 4.4 min
 Primary = 1.07 cfs @ 0.17 hrs, Volume= 1,371 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
 Peak Elev= 98.29' @ 0.17 hrs Surf.Area= 1,254 sf Storage= 1,155 cf

Plug-Flow detention time= 15.2 min calculated for 1,366 cf (90% of inflow)
 Center-of-Mass det. time= 15.2 min (21.2 - 6.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	96.50'	831 cf	8.25'W x 151.99'L x 2.00'H Field A 2,508 cf Overall - 431 cf Embedded = 2,077 cf x 40.0% Voids
#2A	97.00'	431 cf	ADS_StormTech SC-160LP +Cap x 63 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 63 Chambers in 3 Rows
		1,262 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	96.76'	6.0" Round Culvert L= 16.4' Ke= 0.500 Inlet / Outlet Invert= 96.76' / 96.60' S= 0.0098 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=1.07 cfs @ 0.17 hrs HW=98.28' (Free Discharge)↑ **1=Culvert** (Inlet Controls 1.07 cfs @ 5.44 fps)

Pond 11P: Detention A - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-160LP+Cap (ADS StormTech®SC-160LP with cap length)

Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf

Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap

21 Chambers/Row x 7.12' Long +0.23' Cap Length x 2 = 149.99' Row Length +12.0" End Stone x 2 =
151.99' Base Length

3 Rows x 25.0" Wide + 12.0" Side Stone x 2 = 8.25' Base Width

6.0" Base + 12.0" Chamber Height + 6.0" Cover = 2.00' Field Height

63 Chambers x 6.8 cf = 430.7 cf Chamber Storage

2,507.8 cf Field - 430.7 cf Chambers = 2,077.1 cf Stone x 40.0% Voids = 830.8 cf Stone Storage

Chamber Storage + Stone Storage = 1,261.5 cf = 0.029 af

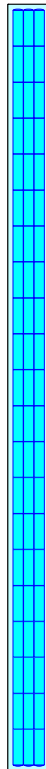
Overall Storage Efficiency = 50.3%

Overall System Size = 151.99' x 8.25' x 2.00'

63 Chambers

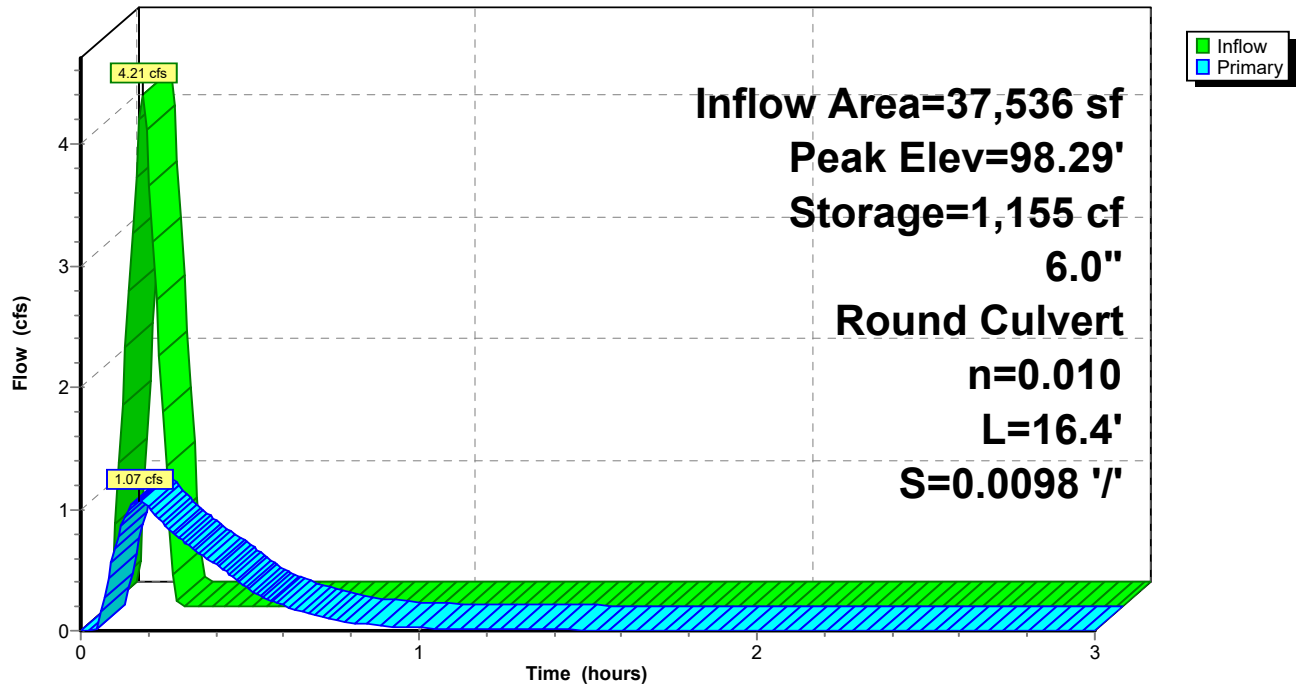
92.9 cy Field

76.9 cy Stone



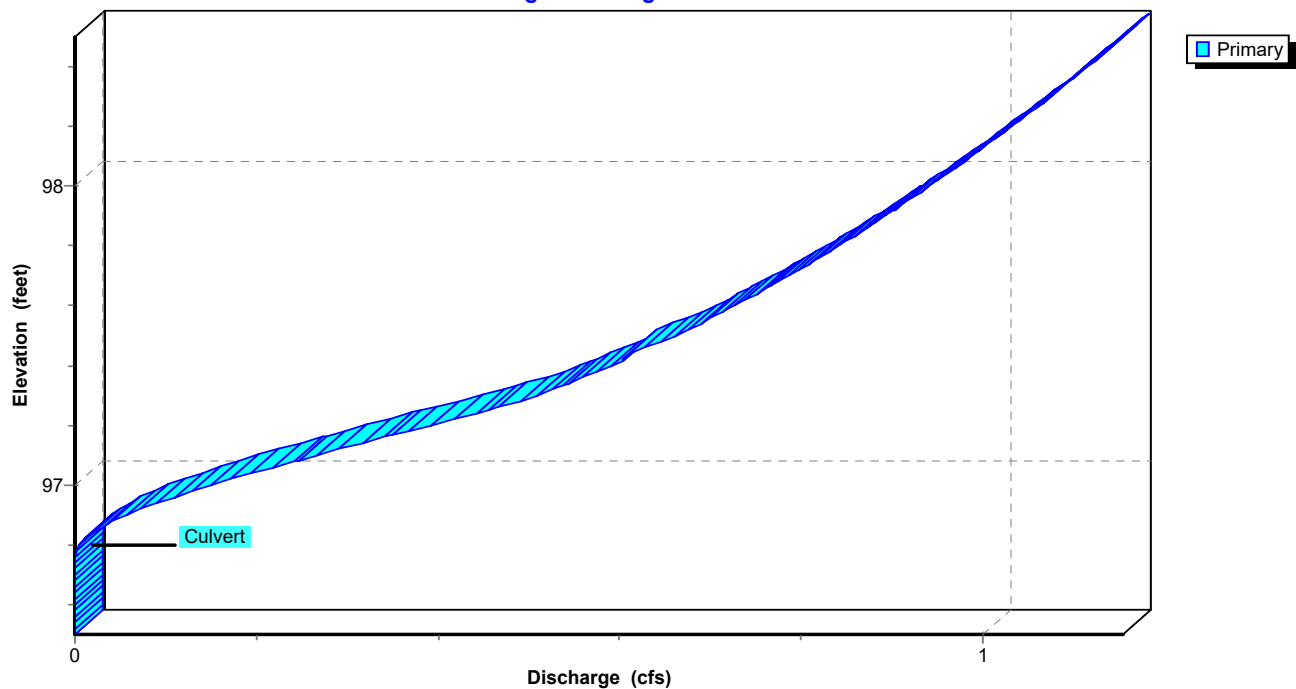
Pond 11P: Detention A

Hydrograph

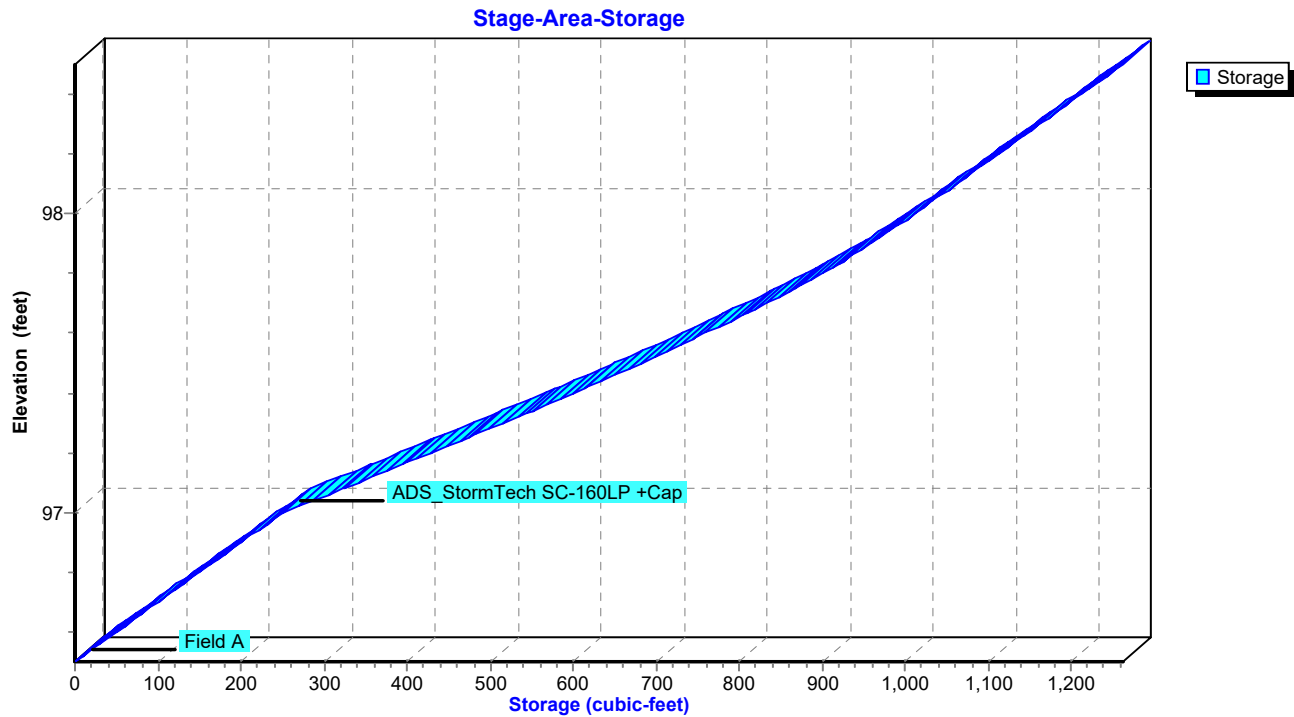


Pond 11P: Detention A

Stage-Discharge



Pond 11P: Detention A



Hydrograph for Pond 11P: Detention A

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	96.50	0.00
0.10	4.21	697	97.52	0.67
0.20	0.04	1,096	98.17	1.02
0.30	0.00	784	97.63	0.75
0.40	0.00	553	97.34	0.55
0.50	0.00	393	97.16	0.34
0.60	0.00	297	97.05	0.21
0.70	0.00	237	96.97	0.12
0.80	0.00	205	96.91	0.06
0.90	0.00	187	96.87	0.04
1.00	0.00	176	96.85	0.03
1.10	0.00	168	96.84	0.02
1.20	0.00	163	96.82	0.01
1.30	0.00	159	96.82	0.01
1.40	0.00	156	96.81	0.01
1.50	0.00	153	96.80	0.01
1.60	0.00	151	96.80	0.01
1.70	0.00	149	96.80	0.00
1.80	0.00	148	96.79	0.00
1.90	0.00	146	96.79	0.00
2.00	0.00	145	96.79	0.00
2.10	0.00	144	96.79	0.00
2.20	0.00	143	96.79	0.00
2.30	0.00	143	96.78	0.00
2.40	0.00	142	96.78	0.00
2.50	0.00	141	96.78	0.00
2.60	0.00	141	96.78	0.00
2.70	0.00	140	96.78	0.00
2.80	0.00	140	96.78	0.00
2.90	0.00	140	96.78	0.00
3.00	0.00	139	96.78	0.00

Stage-Discharge for Pond 11P: Detention A

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
96.50	0.00	97.01	0.16	97.52	0.68	98.03	0.95
96.51	0.00	97.02	0.17	97.53	0.68	98.04	0.96
96.52	0.00	97.03	0.18	97.54	0.69	98.05	0.96
96.53	0.00	97.04	0.19	97.55	0.69	98.06	0.97
96.54	0.00	97.05	0.21	97.56	0.70	98.07	0.97
96.55	0.00	97.06	0.22	97.57	0.71	98.08	0.98
96.56	0.00	97.07	0.23	97.58	0.71	98.09	0.98
96.57	0.00	97.08	0.24	97.59	0.72	98.10	0.99
96.58	0.00	97.09	0.25	97.60	0.73	98.11	0.99
96.59	0.00	97.10	0.27	97.61	0.73	98.12	1.00
96.60	0.00	97.11	0.28	97.62	0.74	98.13	1.00
96.61	0.00	97.12	0.29	97.63	0.74	98.14	1.00
96.62	0.00	97.13	0.30	97.64	0.75	98.15	1.01
96.63	0.00	97.14	0.32	97.65	0.76	98.16	1.01
96.64	0.00	97.15	0.33	97.66	0.76	98.17	1.02
96.65	0.00	97.16	0.34	97.67	0.77	98.18	1.02
96.66	0.00	97.17	0.35	97.68	0.77	98.19	1.03
96.67	0.00	97.18	0.37	97.69	0.78	98.20	1.03
96.68	0.00	97.19	0.38	97.70	0.79	98.21	1.04
96.69	0.00	97.20	0.39	97.71	0.79	98.22	1.04
96.70	0.00	97.21	0.41	97.72	0.80	98.23	1.04
96.71	0.00	97.22	0.42	97.73	0.80	98.24	1.05
96.72	0.00	97.23	0.43	97.74	0.81	98.25	1.05
96.73	0.00	97.24	0.44	97.75	0.81	98.26	1.06
96.74	0.00	97.25	0.46	97.76	0.82	98.27	1.06
96.75	0.00	97.26	0.47	97.77	0.82	98.28	1.07
96.76	0.00	97.27	0.48	97.78	0.83	98.29	1.07
96.77	0.00	97.28	0.49	97.79	0.83	98.30	1.07
96.78	0.00	97.29	0.50	97.80	0.84	98.31	1.08
96.79	0.00	97.30	0.51	97.81	0.85	98.32	1.08
96.80	0.00	97.31	0.52	97.82	0.85	98.33	1.09
96.81	0.01	97.32	0.53	97.83	0.86	98.34	1.09
96.82	0.01	97.33	0.53	97.84	0.86	98.35	1.09
96.83	0.02	97.34	0.54	97.85	0.87	98.36	1.10
96.84	0.02	97.35	0.55	97.86	0.87	98.37	1.10
96.85	0.02	97.36	0.56	97.87	0.88	98.38	1.11
96.86	0.03	97.37	0.57	97.88	0.88	98.39	1.11
96.87	0.04	97.38	0.58	97.89	0.89	98.40	1.11
96.88	0.04	97.39	0.58	97.90	0.89	98.41	1.12
96.89	0.05	97.40	0.59	97.91	0.90	98.42	1.12
96.90	0.06	97.41	0.60	97.92	0.90	98.43	1.13
96.91	0.07	97.42	0.60	97.93	0.91	98.44	1.13
96.92	0.07	97.43	0.60	97.94	0.91	98.45	1.13
96.93	0.08	97.44	0.61	97.95	0.92	98.46	1.14
96.94	0.09	97.45	0.62	97.96	0.92	98.47	1.14
96.95	0.10	97.46	0.63	97.97	0.93	98.48	1.15
96.96	0.11	97.47	0.64	97.98	0.93	98.49	1.15
96.97	0.12	97.48	0.65	97.99	0.94	98.50	1.15
96.98	0.13	97.49	0.65	98.00	0.94		
96.99	0.14	97.50	0.66	98.01	0.95		
97.00	0.15	97.51	0.67	98.02	0.95		

Summary for Pond 13P: Detention B

[44] Hint: Outlet device #1 is below defined storage

[63] Warning: Exceeded Reach 9R INLET depth by 0.23' @ 0.19 hrs

Inflow Area = 60,995 sf, 83.46% Impervious, Inflow Depth = 0.47" for 100-Year event
 Inflow = 6.70 cfs @ 0.10 hrs, Volume= 2,403 cf
 Outflow = 2.06 cfs @ 0.16 hrs, Volume= 2,391 cf, Atten= 69%, Lag= 3.9 min
 Primary = 2.06 cfs @ 0.16 hrs, Volume= 2,391 cf

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Peak Elev= 98.62' @ 0.16 hrs Surf.Area= 1,791 sf Storage= 1,699 cf

Plug-Flow detention time= 13.2 min calculated for 2,383 cf (99% of inflow)

Center-of-Mass det. time= 13.5 min (19.4 - 5.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	96.80'	1,170 cf	10.33'W x 173.35'L x 2.00'H Field A 3,582 cf Overall - 656 cf Embedded = 2,926 cf x 40.0% Voids
#2A	97.30'	656 cf	ADS_StormTech SC-160LP +Cap x 96 Inside #1 Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap 96 Chambers in 4 Rows
		1,827 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	96.79'	8.0" Round Culvert L= 21.2' Ke= 0.500 Inlet / Outlet Invert= 96.79' / 96.68' S= 0.0052 ' / Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 0.35 sf

Primary OutFlow Max=2.05 cfs @ 0.16 hrs HW=98.62' (Free Discharge)↑ **1=Culvert** (Inlet Controls 2.05 cfs @ 5.89 fps)

Pond 13P: Detention B - Chamber Wizard Field A

Chamber Model = ADS_StormTechSC-160LP+Cap (ADS StormTech®SC-160LP with cap length)

Effective Size= 18.0"W x 12.0"H => 0.96 sf x 7.12'L = 6.8 cf

Overall Size= 25.0"W x 12.0"H x 7.56'L with 0.44' Overlap

24 Chambers/Row x 7.12' Long +0.23' Cap Length x 2 = 171.35' Row Length +12.0" End Stone x 2 =
173.35' Base Length

4 Rows x 25.0" Wide + 12.0" Side Stone x 2 = 10.33' Base Width

6.0" Base + 12.0" Chamber Height + 6.0" Cover = 2.00' Field Height

96 Chambers x 6.8 cf = 656.4 cf Chamber Storage

3,582.5 cf Field - 656.4 cf Chambers = 2,926.1 cf Stone x 40.0% Voids = 1,170.5 cf Stone Storage

Chamber Storage + Stone Storage = 1,826.8 cf = 0.042 af

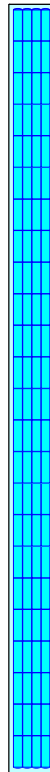
Overall Storage Efficiency = 51.0%

Overall System Size = 173.35' x 10.33' x 2.00'

96 Chambers

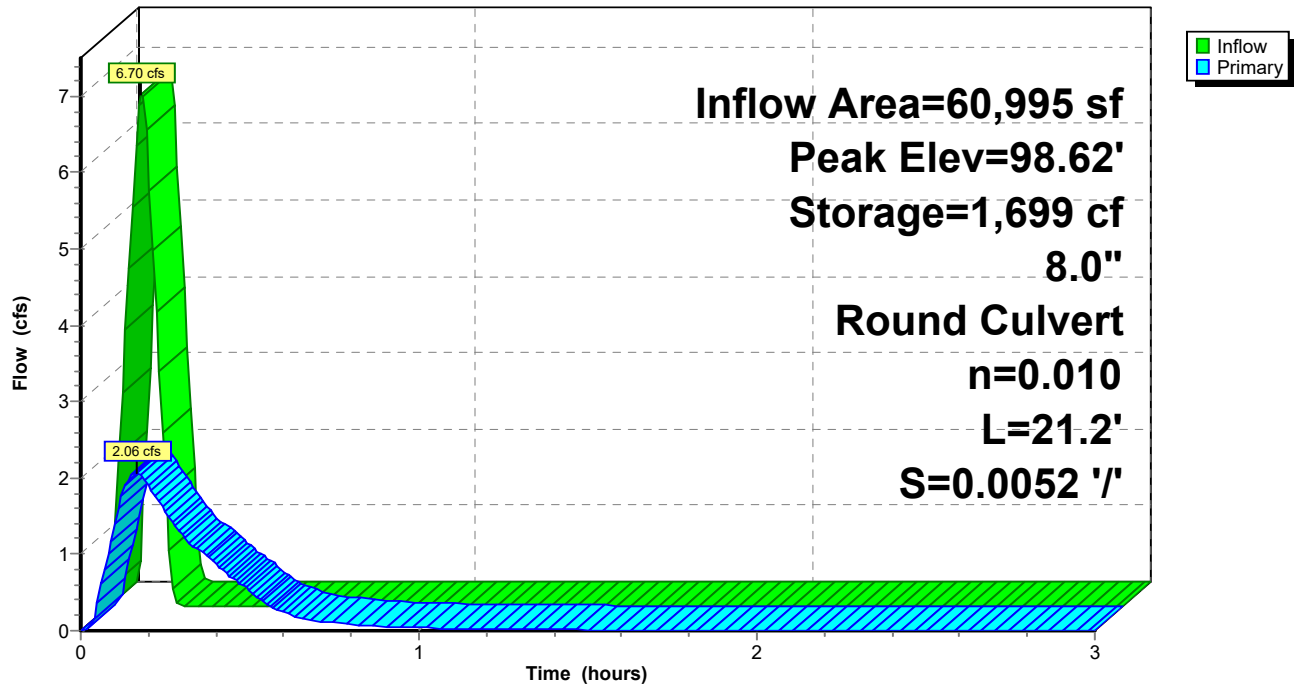
132.7 cy Field

108.4 cy Stone



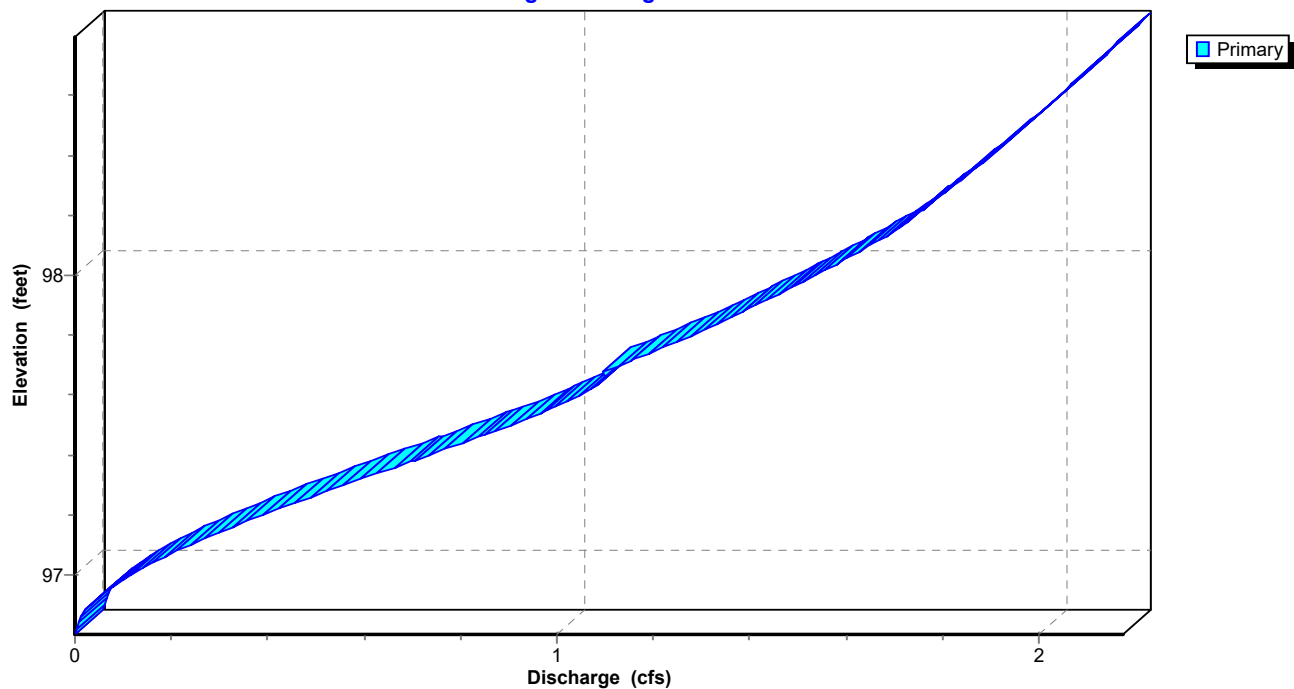
Pond 13P: Detention B

Hydrograph

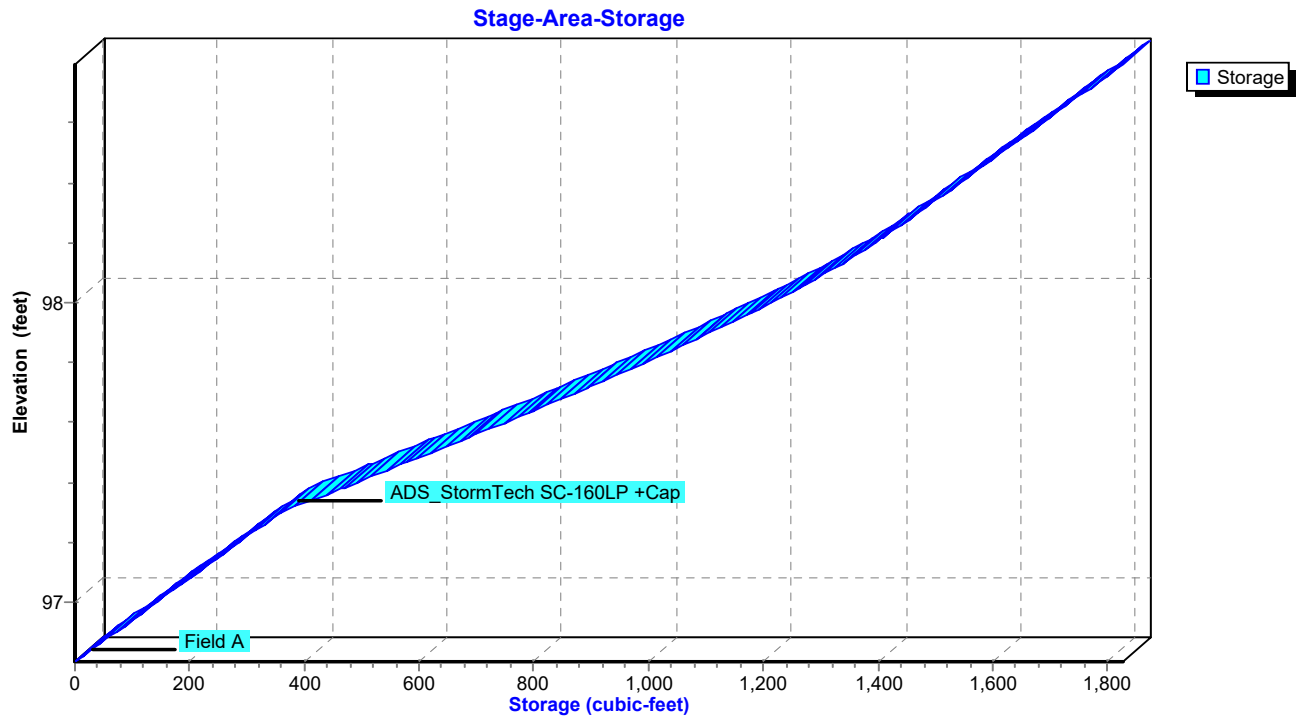


Pond 13P: Detention B

Stage-Discharge



Pond 13P: Detention B



Hydrograph for Pond 13P: Detention B

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	96.80	0.00
0.10	6.68	1,097	97.89	1.40
0.20	0.05	1,540	98.40	1.90
0.30	0.00	978	97.79	1.26
0.40	0.00	596	97.48	0.87
0.50	0.00	346	97.28	0.53
0.60	0.00	216	97.10	0.24
0.70	0.00	152	97.01	0.13
0.80	0.00	115	96.96	0.08
0.90	0.00	91	96.93	0.05
1.00	0.00	75	96.91	0.04
1.10	0.00	64	96.89	0.03
1.20	0.00	55	96.88	0.02
1.30	0.00	48	96.87	0.02
1.40	0.00	43	96.86	0.01
1.50	0.00	38	96.85	0.01
1.60	0.00	34	96.85	0.01
1.70	0.00	31	96.84	0.01
1.80	0.00	29	96.84	0.01
1.90	0.00	26	96.84	0.01
2.00	0.00	24	96.83	0.01
2.10	0.00	22	96.83	0.00
2.20	0.00	21	96.83	0.00
2.30	0.00	19	96.83	0.00
2.40	0.00	18	96.83	0.00
2.50	0.00	17	96.82	0.00
2.60	0.00	16	96.82	0.00
2.70	0.00	15	96.82	0.00
2.80	0.00	14	96.82	0.00
2.90	0.00	13	96.82	0.00
3.00	0.00	12	96.82	0.00

Stage-Discharge for Pond 13P: Detention B

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
96.80	0.00	97.31	0.58	97.82	1.31	98.33	1.85
96.81	0.00	97.32	0.59	97.83	1.32	98.34	1.85
96.82	0.00	97.33	0.61	97.84	1.33	98.35	1.86
96.83	0.00	97.34	0.63	97.85	1.35	98.36	1.87
96.84	0.01	97.35	0.65	97.86	1.36	98.37	1.88
96.85	0.01	97.36	0.66	97.87	1.37	98.38	1.88
96.86	0.01	97.37	0.68	97.88	1.39	98.39	1.89
96.87	0.02	97.38	0.70	97.89	1.40	98.40	1.90
96.88	0.02	97.39	0.72	97.90	1.41	98.41	1.91
96.89	0.03	97.40	0.73	97.91	1.43	98.42	1.91
96.90	0.03	97.41	0.75	97.92	1.44	98.43	1.92
96.91	0.04	97.42	0.77	97.93	1.45	98.44	1.93
96.92	0.05	97.43	0.79	97.94	1.46	98.45	1.94
96.93	0.05	97.44	0.80	97.95	1.47	98.46	1.94
96.94	0.06	97.45	0.82	97.96	1.49	98.47	1.95
96.95	0.07	97.46	0.84	97.97	1.50	98.48	1.96
96.96	0.08	97.47	0.86	97.98	1.51	98.49	1.96
96.97	0.09	97.48	0.87	97.99	1.52	98.50	1.97
96.98	0.10	97.49	0.89	98.00	1.53	98.51	1.98
96.99	0.11	97.50	0.90	98.01	1.55	98.52	1.99
97.00	0.12	97.51	0.92	98.02	1.56	98.53	1.99
97.01	0.13	97.52	0.94	98.03	1.57	98.54	2.00
97.02	0.14	97.53	0.95	98.04	1.58	98.55	2.01
97.03	0.15	97.54	0.97	98.05	1.59	98.56	2.01
97.04	0.16	97.55	0.98	98.06	1.60	98.57	2.02
97.05	0.18	97.56	1.00	98.07	1.61	98.58	2.03
97.06	0.19	97.57	1.01	98.08	1.63	98.59	2.04
97.07	0.20	97.58	1.02	98.09	1.64	98.60	2.04
97.08	0.21	97.59	1.04	98.10	1.65	98.61	2.05
97.09	0.23	97.60	1.05	98.11	1.66	98.62	2.06
97.10	0.24	97.61	1.06	98.12	1.67	98.63	2.06
97.11	0.25	97.62	1.07	98.13	1.68	98.64	2.07
97.12	0.27	97.63	1.08	98.14	1.69	98.65	2.08
97.13	0.28	97.64	1.09	98.15	1.70	98.66	2.08
97.14	0.30	97.65	1.10	98.16	1.71	98.67	2.09
97.15	0.31	97.66	1.10	98.17	1.72	98.68	2.10
97.16	0.33	97.67	1.10	98.18	1.73	98.69	2.10
97.17	0.34	97.68	1.10	98.19	1.74	98.70	2.11
97.18	0.36	97.69	1.11	98.20	1.74	98.71	2.12
97.19	0.37	97.70	1.13	98.21	1.75	98.72	2.12
97.20	0.39	97.71	1.14	98.22	1.76	98.73	2.13
97.21	0.41	97.72	1.16	98.23	1.77	98.74	2.14
97.22	0.42	97.73	1.18	98.24	1.78	98.75	2.14
97.23	0.44	97.74	1.19	98.25	1.78	98.76	2.15
97.24	0.46	97.75	1.21	98.26	1.79	98.77	2.16
97.25	0.47	97.76	1.22	98.27	1.80	98.78	2.16
97.26	0.49	97.77	1.24	98.28	1.81	98.79	2.17
97.27	0.51	97.78	1.25	98.29	1.82	98.80	2.18
97.28	0.52	97.79	1.26	98.30	1.82		
97.29	0.54	97.80	1.28	98.31	1.83		
97.30	0.56	97.81	1.29	98.32	1.84		