

JOHN E. BAKER
President

DAN HOAGLAND
Land Surveyor

ANDREW R. CASSANO
Land Use Planner

ROBERT M. ROURKE
Civil Engineer

NEVADA CITY ENGINEERING, INC.

505 COYOTE STREET, SUITE B • P.O. BOX 1437
NEVADA CITY, CALIFORNIA 95959 • TELEPHONE (530) 265-6911 • FAX (530) 265-8058

Engineering • Surveying • Planning

RISE GRASS VALLEY INC.

HYDROLOGY & HYDRAULIC CALCULATIONS

for

Preliminary Drainage Analysis & Detention Basin Sizing for Centennial & Brunswick Sites



October 2019

**PRELIMINARY DRAINAGE ANALYSIS
&
DETENTION BASIN SIZING
For
Centennial Industrial Site & Brunswick Industrial Site**

Executive Summary

The following Preliminary Drainage Analysis has been prepared by Nevada City Engineering, Inc. (“NCE”) as supporting documentation for the Preliminary Grading Plans related to the Use Permit Application by Rise Grass Valley Inc. (“Rise”) in anticipation of the re-opening of portions of the former Idaho Maryland Mine, located in unincorporated territory of Nevada County, CA. Rise Grass Valley Inc. plans to re-open mining operations from a new facility to be located on the site of the former New Brunswick Shaft, located southwest of the intersection of Brunswick Road and East Bennett Road. Rise plans to use materials generated from underground tunneling and ore processing as engineered fill which will be placed and compacted in areas of the Centennial and Brunswick Industrial Sites. When operations are completed it is planned that the engineered fill areas will be redeveloped as industrial park facilities, ultimately adding lasting economic benefit to western Nevada County. It should be noted that final development as an industrial park facility is not part of the Use Permit Application by Rise. During the active period of mining operations, water from the underground mine will be treated on site before being discharged to South Fork Wolf Creek. This Drainage and Detention Study anticipates a peak flow rate of 2,500 gallons per minute (gpm) or 5.6 cubic feet per second (cfs) from the dewatering operation. The detention basin for the Brunswick Site is sized to detain storm flows to compensate for the quantity of treated mine water discharged to South Fork Wolf Creek, in addition to compensating for increased runoff from ultimate development of the site. The hydrologic calculations and detention studies for both sites anticipate runoff at full development. Therefore, when mining operations are completed and the sites are developed as industrial parks, all potential increases in runoff due to increases in impervious surfaces (pavement and buildings) will already be accounted for. Moreover, the drainage calculations and detention basins are specifically designed to respond to the drainage requirements of the County of Nevada and consist of Hydrologic Calculations and a Detention Study. Detailed hydraulic calculations, other than for the reservoir routing analysis contained in the Detention Study, have been omitted at this time as additional storm drain pipes that will convey site drainage flows to the detention basins will ultimately be designed to flow at less than their total capacity. Therefore, the overall system will function hydraulically as intended.

Post project storm-water discharge from both the Centennial and Brunswick Sites, including, in the case of the Brunswick Site, the treated mine water discharge of 5.6 cfs will be equal to or less than the estimated pre-project storm-water discharge levels. Therefore, with the construction of the storm-water detention ponds, the project will have no impact or increase of flows in creeks during storm events. Following is a Summary Table of Pre- and Post-Development Storm-Water flows from the location of the Brunswick Site.

Summary Table of Pre- and Post-Development Storm-Water Flows, Brunswick Site:

Storm Event	Pre-Development current	Post Development with detention and 5.6 cfs mine water discharge
2 year	79 cfs	36 cfs
10 year	140 cfs	84 cfs
25 year	195 cfs	158 cfs
100 year	227 cfs	207 cfs

Hydrologic Calculations

For the drainage basins identified on the attached Hydrology Maps as Drainage Areas >A-1= and >A-2', and >B-1' through >B-3', hydrologic calculations were developed utilizing the unit hydrograph method as contained in the Pond Pack Version 8i computer program. In accordance with the requirements of the County of Nevada's Use Permit Application process, values for the 10-year and 100-year frequency storms were developed using the County of Nevada's Design Storm Depth tables for a 24 hour storm as contained in County of Nevada, Department of Transportation Standard Drawings D-13 and D-14. Depths for a Mean Annual Precipitation of 56" were used (6.80" for Q-10, and 9.64" for Q-100). At the request of Rise Grass Valley Inc., NCE has also included analyses for the 2-year, and 25-year storms at the Brunswick site. Design storm depths for these events were attained from information published on the National Oceanic and Atmospheric Administration (NOAA) "Hydrometeorological Design Studies Center, Precipitation Frequency Data Server" website for the specific location of the Brunswick Site. For the Brunswick Site the depths were 4.73" for the 2-year storm and 8.59" for the 25-year storm.

To develop the storm hydrographs for each storm event at each site, Runoff Curve Numbers consistent with County of Nevada Standard Drawing D-16 were generated for each drainage subarea based on existing land use and vegetative conditions for the pre-development analyses. Similarly, post-development curve numbers were generated based on anticipated ultimate development for each site. Governing Times of Concentration for each drainage area were developed in accordance with County of Nevada Standard Drawing D-9 as a further input into the program.

The layouts of the storm drain systems are designed to capture flows from newly developed portions of the sites (Drainage Areas >A-1' and 'B-1' and 'B-2') routing them into and through the proposed detention basins and into proposed 60" diameter outlet riser structures. They are also designed to bypass flows from certain undeveloped and/or unchanged portions of the sites' upstream areas, along with flows from some off-site upstream tributary areas, which do not change from historic pre-development conditions. These consist of Drainage Areas 'A-2' and 'B-3'.

Detention Study

Input for the Detention Study was prepared by Nevada City Engineering, Inc. utilizing the hydrology developed as described above. The storm flows collected by the proposed on-site storm drain systems were then routed through the proposed detention basins into 60" diameter CSP (corrugated steel pipe) outlet riser structures. The results indicated reductions of peak flows ranging from 8.9% to 54.4%. The specifics of these reductions are summarized on Page 7 of the Detention Study. The total drainage areas mitigated by the proposed detention basins consist of 66.86 acres for the Centennial Site, and 126.69 acres for the Brunswick Site, in their post-development conditions. Consequently, the impact of the detention basins is to reduce the flow emanating from the developed areas of the sites to less than pre-development levels. The drainage systems draining off-site areas for which the pre- and post-development flows do not change are designed to bypass the detention basins resulting in no net impact to downstream properties.

Grading Process

Grading Plans at 1"=100' scale for both sites are included with the Use Permit Submittal. The Grading Plans demonstrate, in addition to the layout of the Brunswick Site and processing facilities, the completed engineered fill operation grading and the related drainage systems which are analyzed in this report. On-site fills are proposed to be constructed at a slope ratio of 3:1. Under this scenario, due to the relatively mild gradient, mid slope benches will not be required. Where slope banks are great enough in height to require mid-slope interceptor ditches, "J" Ditches as indicated on the detail included on Page 14 of this study will be provided. These will eliminate any likelihood of erosion occurring on the slope faces. Additionally, the 3:1 slopes have a softer, more natural look which will make the proposed ultimate development of the engineered fill areas into industrial parks more aesthetically pleasing than benched slopes. These flatter slopes will also enhance the viability of landscaping and vegetative efforts on those slopes.

The proposed detention basins at each site are intentionally located at the downstream toe of each fill site. This is done so that they may be constructed and made functional relatively early in the process of the fill operations. Therefore, as the fill areas rise throughout the anticipated duration of this portion of the mining operation, flows will be directed to these facilities via the drainage pipes which proceed downhill from the surface of the fill, allowing the flows to be directed to the detention basins. These pipes in the proposed 3:1 slope, at any given point in the process of placing the fills, will be extended up slope from the detention basins to the then current surface. Interceptor ditches and catchment sumps will be formed at the surface, as indicated on the Grading Plans, and will be replaced periodically as the fill operation progresses and the surface elevation rises. By this strategy, site drainage will continually be positively controlled throughout the process of the engineered fill placement operation.

SMARA (Surface Mining and Reclamation Act) Coordination

The Nevada County drainage requirements indicate that new storm drain systems and channels shall be designed to convey the 10- and 100-year, 24 hour storm event. Furthermore, SMARA states that erosion control methods shall be designed for the 20-year, 1 hour storm and shall control erosion and sedimentation during operations as well as after reclamation is complete (see

CCR Title 14, Section 3706). The 2-, 10-, 25-, and 100-year, 24 hour storm events were analyzed in this report, which more than satisfies the Nevada County requirements. Since the 100-year, 24 hour event is greater than the SMARA required 20-year, 1 hour event, the 100-year, 24 hour results will provide a greater factor of safety in the drainage design.

Summary

In summation, the proposed grading will result in significant areas which will be ready for final development as industrial parks, while the proposed drainage systems fully mitigate any impacts of development of the properties, resulting in downstream flows which range from 8.9% to 54.4% less than pre-development levels depending on the design storm. These mitigated flows will be released, through control outlet structures, in the case of the Centennial Site, to the main branch of Wolf Creek, and in the case of the Brunswick Site, to South Fork Wolf Creek.

Detailed Calculations

1. Develop Times of Concentration

a. Subarea A-1 (Centennial Site):

Pre-Development: $L = 3,080 \text{ lf}$, $S_o = 2,590-2,490/3,080 = 0.0325$

$T_c = 3,080 \text{ lf}/4.3 \text{ ft/sec}/60 \text{ sec/min} = 11.94 \text{ min. Use } \mathbf{12.0 \text{ min.}}$

Post-Development: $L = 2,600 \text{ lf}$, $S_o = 2,590-2,495/2,600 = 0.0365$

$T_c = 2,600 \text{ lf}/4.4 \text{ ft/sec}/60 \text{ sec/min} = 9.85 \text{ min. Use } \mathbf{10.0 \text{ min.}}$

b. Subarea A-2 (Centennial Site):

Pre- and Post-Development: $L = 2,130 \text{ lf}$, $S_o = 2,744-2,548/2,130 = 0.0920$

$T_c =$ sheet flow: $200 \text{ lf @ } 12.0\%$, avg. grass, $t_c = 12.7 \text{ min.}$

channel flow: $S_o = 2,720-2,548/1,930 = 0.0891$

$t_c = 1,930 \text{ lf}/7.14 \text{ ft/sec}/60 \text{ sec/min} = \underline{4.5 \text{ min.}}$

Total $T_c = 17.2 \text{ min.}$

For sizing culvert extension from existing log pond

c. Subarea B-1 (Brunswick Site):

Pre-Development: $L = 3,955 \text{ lf}$, $S_o = 2,946-2,716/3,955 = 0.0582$

$T_c = 3,955 \text{ lf}/5.3 \text{ ft/sec}/60 \text{ sec/min} = 12.43 \text{ min.}$

Post-Development: $L = 3,806 \text{ lf}$, $S_o = 2,946-2,725/3,806 = 0.0581$

$T_c = 3,806 \text{ lf}/5.3 \text{ ft/sec}/60 \text{ sec/min} = 11.97 \text{ min. Use } \mathbf{12.0 \text{ min., both scenarios}}$

d. Subarea B-2 (Brunswick Site):

Pre-Development: $L = 1,370 \text{ lf}$, $S_o = 2,852-2,716/1,370 = 0.0993$

$T_c =$ sheet flow: $300 \text{ lf @ } 18.0\%$, avg. grass, $t_c = 13.0 \text{ min.}$

channel flow: $S_o = 2,798-2,716/1,070 = 0.0766$

$t_c = 1,070 \text{ lf}/6.40 \text{ ft/sec}/60 \text{ sec/min} = \underline{2.8 \text{ min.}}$

Total $T_c = 15.8 \text{ min.}$

Post-Development: $L = 1,340$ lf, $S_o = 2,852-2,725/1,340 = 0.0948$
 Tc = sheet flow: 300 lf @ 18.0% , avg. grass, tc = 13.0 min.
 channel flow: $S_o = 2,798-2,725/1,040 = 0.0702$
 tc = $1,040$ lf/ 6.0 ft/sec/ 60 sec/min = 2.9 min.
 Total Tc = 15.9 min.

For conservatism and consistency use 12.0 min. per Subarea B-1

e. Subarea B-3 (Brunswick Site):

Pre- and Post-Development: $L = 3,500$ lf, $S_o = 2,866-2,738/3,500 = 0.0366$
 Tc = sheet flow: 500 lf @ 12.0% , avg. grass, tc = 16.0 min.
 channel flow: $S_o = 2,806-2,738/3,000 = 0.0227$
 tc = $3,000$ lf/ 3.50 ft/sec/ 60 sec/min = 14.3 min.
 Total Tc = 30.3 min.

For checking capacity of existing 48" culvert across/under site

2. Develop CN Values

a. Centennial Site:

Pre-Development:

69.96 ac./ 69.96 ac. = 100% Wood or Forest Land, Good Cover, Soil Type 'D'
 CN = 77.0

Post-Development:

38.11 ac./ 66.86 ac. = 57% Industrial/Commercial/Business, Soil Type 'D':	0.57×93	53.01
28.75 ac./ 66.86 ac. = 43% Wood or Forest Land, Good Cover, Soil Type 'D':	$0.43 \times 77 =$	<u>33.11</u>
Total		86.12

b. Brunswick Site:

Pre-Development

Subarea B-1:

76.10 ac./ 89.36 ac. = 85% Wood or Forest Land, Good Cover, Soil Type 'D':	$0.85 \times 77 =$	65.45
8.26 ac./ 89.36 ac. = 9% Open Space, Fair Condition, Soil Type 'D':	$0.09 \times 84 =$	7.56
5.00 ac./ 89.36 ac. = 6% Industrial/Commercial/Business, Soil Type 'D':	$0.06 \times 93 =$	<u>5.58</u>
Total		78.59

Subarea B-2:

12.45 ac./ 34.33 ac. = 36% Wood or Forest Land, Good Cover, Soil Type 'D':	$0.36 \times 77 =$	27.72
15.00 ac./ 34.33 ac. = 44% Open Space, Fair Condition, Soil Type 'D':	$0.44 \times 84 =$	36.96
6.88 ac./ 34.33 ac. = 20% Industrial/Commercial/Business, Soil Type 'D':	$0.20 \times 93 =$	<u>18.60</u>
Total		83.28

Post-Development:

Subarea B-1:

56.90 ac./98.55 ac. =	58% Wood or Forest Land, Good Cover, Soil Type 'D':	0.58 x 77 =	44.66
18.15 ac./98.55 ac. =	18% Open Space, Fair Condition, Soil Type 'D':	0.18 x 84 =	15.12
23.50 ac./98.55 ac. =	24% Industrial/Commercial/Business, Soil Type 'D':	0.24 x 93 =	22.32
Total			82.10

Subarea B-2:

4.48 ac./28.14 ac. =	16% Wood or Forest Land, Good Cover, Soil Type 'D':	0.16 x 77 =	12.32
8.30 ac./28.14 ac. =	30% Open Space, Fair Condition, Soil Type 'D':	0.30 x 84 =	25.20
15.36 ac./28.14 ac. =	54% Industrial/Commercial/Business, Soil Type 'D':	0.54 x 93 =	50.22
Total			87.74

3. Input Storm Depth Values

a. Centennial Site

10-yr, 24 hr storm:	6.80 inches+
100-yr, 24 hr storm:	9.64 inches+

b. Brunswick Site

2-yr, 24 hr storm:	4.73 inches*
10-yr, 24 hr storm:	6.80 inches+
25-yr, 24 hr storm:	8.59 inches*
100-yr, 24 hr storm:	9.64 inches+

* Values obtained from NOAA, "Hydrometeorological Design Studies Center, Precipitation Frequency Data Server"

+ Values obtained from County of Nevada Standard Drawings D-13 & D-14

4. Summary of Flow Values – Centennial Site

	<u>Pre-Dev:</u>	<u>Post-Dev:</u>	<u>Target Outflow:</u>	<u>After Detention</u>
10-yr. storm:	72.44 cfs	89.68 cfs	72.44 cfs	45.14 cfs
100-yr. storm:	121.02 cfs	137.41 cfs	121.02 cfs	75.75 cfs

5. Summary of Flow Values - Brunswick Site

	<u>Pre-Dev:</u>	<u>Post-Dev:</u>	<u>Target Outflow:</u>	<u>After Detention:</u>
2-yr. storm:	78.92 cfs	93.31 cfs	78.92-5.57 = 73.35 cfs	30.74 cfs
10-yr. storm:	139.98 cfs	157.48 cfs	139.98-5.57 = 134.41 cfs	78.63 cfs
25-yr. storm:	194.52 cfs	213.78 cfs	194.52-5.57 = 188.95 cfs	152.78 cfs
100-yr. storm:	226.76 cfs	247.08 cfs	226.76-5.57 = 221.19 cfs	201.21 cfs

6. Size Extension of Drainage Culvert from Subarea A-2

$$C = \frac{\text{Slope}}{0.15} + \frac{\text{soil}}{0.12} + \frac{\text{veg.}}{0.06} + \frac{\text{surface}}{0.12} = \frac{\text{Total}}{0.45}$$

A = 28.06 ac. Tc = 17.2 min. I-100 = 2.98 in./hr.
Q = CIA = 0.45 x 2.98 x 28.06 = 37.6 cfs
So = 2,534–2,500/1,040 = 0.0327

$$d = [Qn / K'So^{1/2}]^{3/8} = [37.6(0.012)/0.463*(0.0327)^{1/2}]^{3/8} = 1.88 \text{ ft.}$$

Use 30" pipe for extra margin of safety

* K' from King's Handbook of Hydraulics, 6th Edition, for pipe flowing at D/d = 0.82

7. Verify Size of Existing 48" Culvert Draining Subarea B-3

$$C = \frac{\text{Slope}}{0.07} + \frac{\text{soil}}{0.11} + \frac{\text{veg.}}{0.04} + \frac{\text{surface}}{0.07} = \frac{\text{Total}}{0.29}$$

A = 167.60 ac. Tc = 30.3 min. I-100 = 2.28 in./hr.
Q = CIA = 0.29 x 2.28 x 167.6 = 110.8 cfs
So = 2,740–2,710/1,645 = 0.0182

$$K' = Qn/d^{8/3}So^{1/2} = 110.8(0.024)/4.0^{8/3}(0.0182)^{1/2} = 0.4889$$

From King's Handbook of Hydraulics, 6th Edition, for K' = 0.4889, D/d = 0.0883

So, 48" pipe will flow at a depth of 0.0883 x 4.0 = 3.5 ft.

Therefore, 48" pipe is OK.

8. Size outfall culvert for Centennial Site

$$So = 2,495–2,490/170 = 0.0294, Q_{100} = 121 \text{ cfs}$$

$$d = [Qn / K'So^{1/2}]^{3/8} = [121(0.024)/0.463*(0.0294)^{1/2}]^{3/8} = 3.85 \text{ ft.}$$

Therefore, use 48" pipe

* K' from King's Handbook of Hydraulics, 6th Edition, for pipe flowing at D/d = 0.82

$$K' = Qn/d^{8/3}So^{1/2} = 121(0.024)/4.0^{8/3}(0.0294)^{1/2} = 0.4201$$

From King's Handbook of Hydraulics, 6th Edition, for K' = 0.4201, D/d = 0.7468

So, 48" pipe will flow at a depth of 0.7468 x 4.0 = 2.98 ft.

9. Size outfall culvert for Brunswick Site

$$So = 2,725–2,710/160 = 0.0938, Q_{100} = 227 \text{ cfs}$$

$$d = [Qn / K'So^{1/2}]^{3/8} = [227(0.024)/0.463*(0.0938)^{1/2}]^{3/8} = 3.93 \text{ ft.}$$

Therefore, use 48" pipe

* K' from King's Handbook of Hydraulics, 6th Edition, for pipe flowing at D/d = 0.82

$$K' = Qn/d^{8/3}So^{1/2} = 227(0.024)/4.0^{8/3}(0.0938)^{1/2} = 0.5095$$

From King's Handbook of Hydraulics, 6th edition, for K' = 0.5095, D/d = 0.07803

So, 48" pipe will flow at a depth of 0.7803 x 4.0 = 3.12 ft.

10. Size Treated Mine Water Outfall to South Fork Wolf Creek, Brunswick Site

$$K' = Qn/d_{8/3}S_o^{1/2} = 5.57(0.012)/1.00_{8/3}(0.0385)^{1/2} = 0.3406$$

From King's Handbook of Hydraulics, 6th Edition, for $K' = 0.3406$, $D/d = 0.6371$

So, 12" treated mine water outfall pipe will flow at a depth of $0.6371 \times 1.0 = 0.64$ ft.

Check Velocity at Outfall:

$$\text{At } D/d = 0.6371, C_a = 0.5281, A = C_a(d^2) = 0.5281(1.0^2) = 0.53 \text{ ft}^2$$

$$V = Q/A = 5.57/0.53 = 10.51 \text{ ft./sec.}$$

Determine Length of Outfall Apron:

$$L = 0.37V_oD^{1/2} = 0.37(10.51)1.0^{1/2} = 3.89 \text{ ft.}$$

Therefore, for conservatism, use L=5.0 ft.

Note: The existing flow line and portions of the banks of South Fork Wolf Creek are currently lined with miscellaneous rocks which will act as a stabilizing structure for both the flow line and the banks. Due to the small amount of flow being released into the South Fork Wolf Creek, it should not be necessary to install any additional armoring of either the channel bottom or its banks.

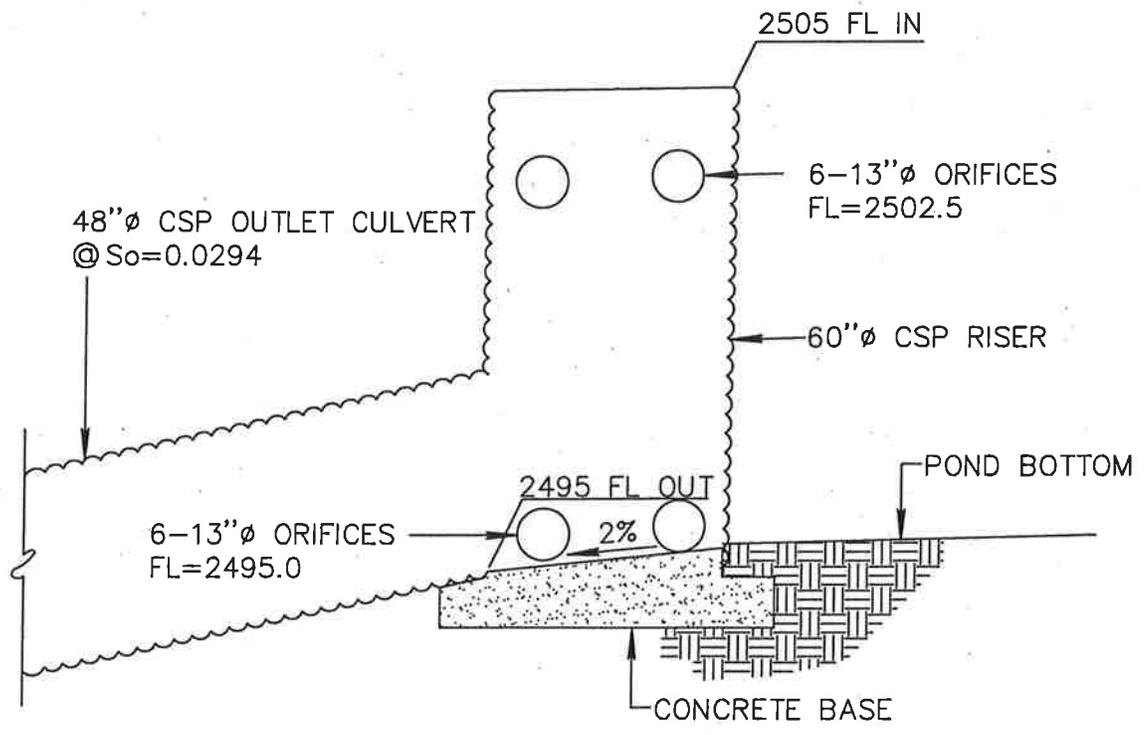
Glossary of Terminology and Technical Abbreviations

- A - Area
- ac. - acres
- C - Coefficient of Runoff for use in the Rational Formula
- C_a - Coefficient for determining the cross sectional area of flow in a circular conduit (pipe)
- cfs - flow rate in cubic feet per second
- CN - Soil Conservaton Service Curve Number
- D - Depth of flow in a circular conduit (pipe)
- d - diameter of a circular conduit (pipe)
- ft. - feet
- hr. - hour
- I - Intensity (normally in inches per hour)
- in. - inches
- K' - Conveyance factor related to Manning's equation
- L - Length
- lf. - linear feet
- n - Manning's "n" value
- V - Velocity
- V_o - Velocity at outlet
- S_o - Slope of the flow line of a pipe or open channel
- T_c - Time of Concentration
- Q - Flow rate (normally in cfs)
- Q_{10} - Flow rate for the statistical frequency of occurrence (10-year for instance)

DETAILS



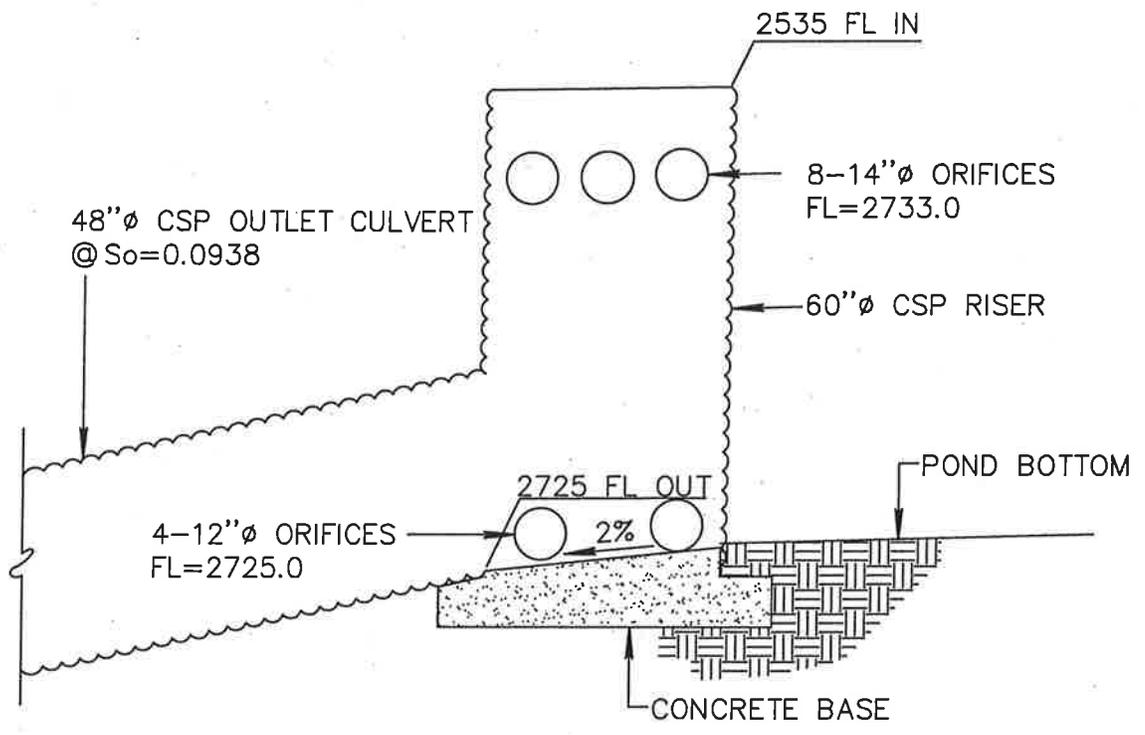
SCALE: 1" = 4'



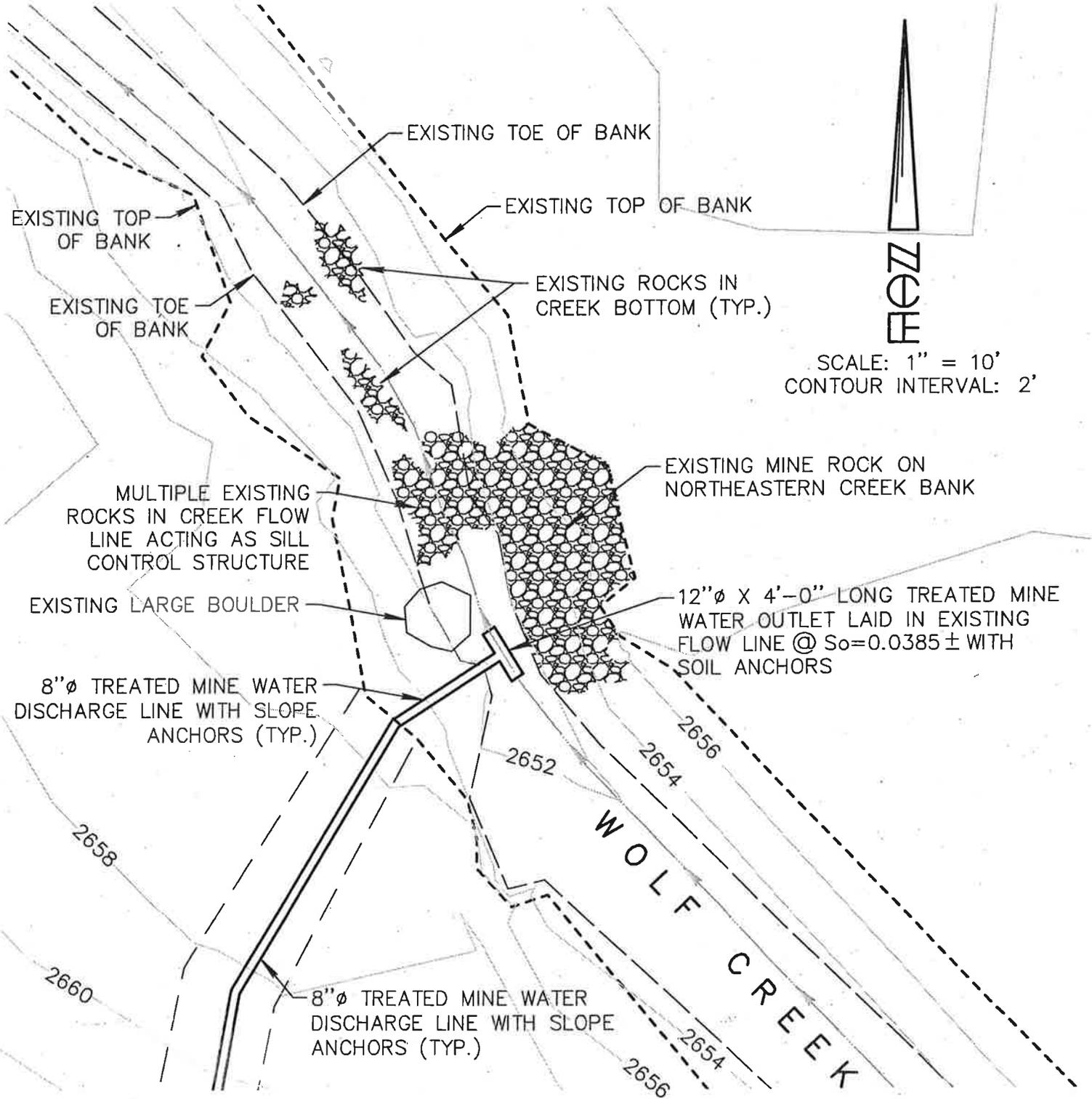
DETENTION POND OUTLET STRUCTURE CENTENNIAL SITE



SCALE: 1" = 4'

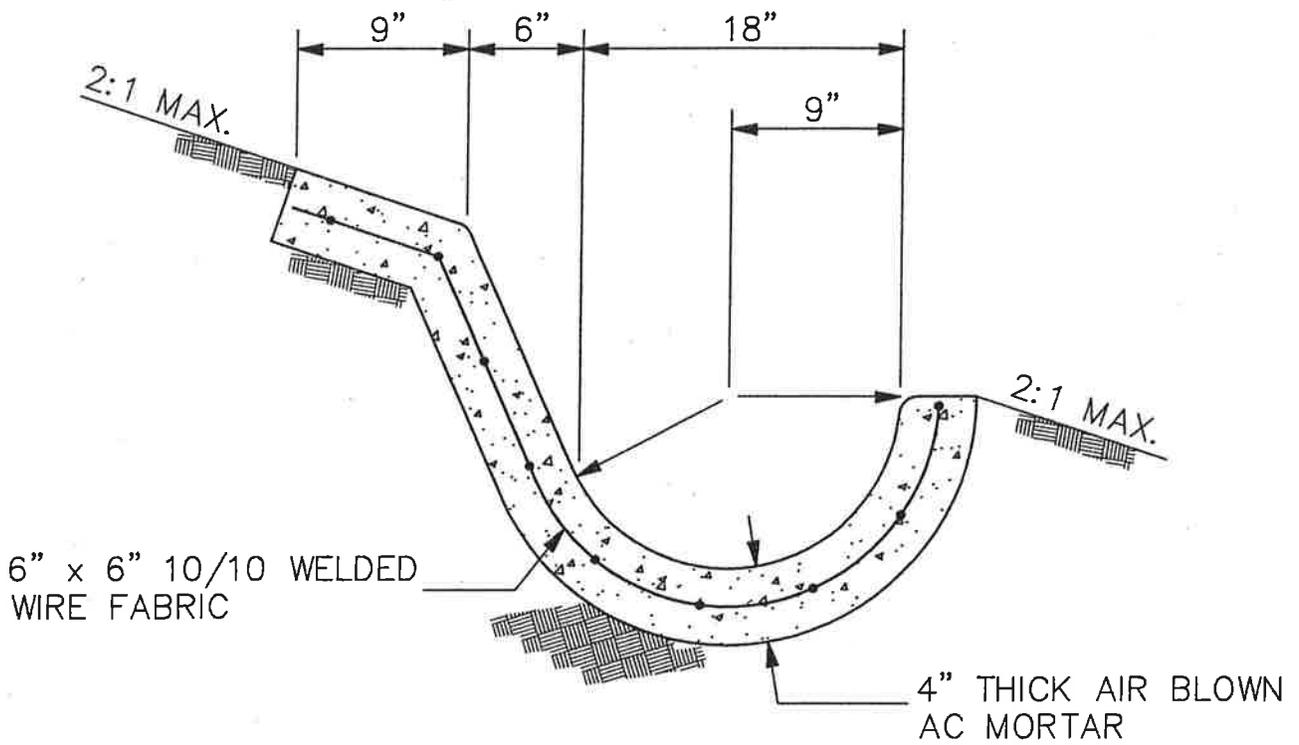


DETENTION POND OUTLET STRUCTURE BRUNSWICK SITE



SCALE: 1" = 10'
 CONTOUR INTERVAL: 2'

**TREATED MINE WATER OUTFALL to
 SOUTH FORK WOLF CREEK**



CONCRETE 'J' DRAIN

SCALE: 1" = 1'

**HYDROLOGY & HYDRAULIC
CALCULATIONS
for
Reservoir Routing & Detention Basin Sizing**

Brunswick Site

Project Summary

Title	New Brunswick Site
Engineer	RMR
Company	Nevada City Engineering, Inc.
Date	9/10/2019

Notes

Table of Contents

	User Notifications	2
	Master Network Summary	5
NC airport/NOAA		
	Time-Depth Curve, 10 years	7
	Time-Depth Curve, 10 years	7
	Time-Depth Curve, 25 years	11
	Time-Depth Curve, 25 years	11
	Time-Depth Curve, 2 years	15
	Time-Depth Curve, 2 years	15
	Time-Depth Curve, 100 years	19
	Time-Depth Curve, 100 years	19
	Unit Hydrograph Equations	23
CM-1		
	Unit Hydrograph Summary, 2 years	25
	Unit Hydrograph (Hydrograph Table), 2 years	27
	Unit Hydrograph Summary, 2 years	25
	Unit Hydrograph (Hydrograph Table), 2 years	27
	Unit Hydrograph Summary, 10 years	35
	Unit Hydrograph (Hydrograph Table), 10 years	37
	Unit Hydrograph Summary, 10 years	35
	Unit Hydrograph (Hydrograph Table), 10 years	37
	Unit Hydrograph Summary, 25 years	45
	Unit Hydrograph (Hydrograph Table), 25 years	47
	Unit Hydrograph Summary, 25 years	45
	Unit Hydrograph (Hydrograph Table), 25 years	47
	Unit Hydrograph Summary, 100 years	55
	Unit Hydrograph (Hydrograph Table), 100 years	57
	Unit Hydrograph Summary, 100 years	55
	Unit Hydrograph (Hydrograph Table), 100 years	57
CM-2		
	Unit Hydrograph Summary, 2 years	65
	Unit Hydrograph (Hydrograph Table), 2 years	67
	Unit Hydrograph Summary, 2 years	65

Table of Contents

	Unit Hydrograph (Hydrograph Table), 2 years	67
	Unit Hydrograph Summary, 10 years	75
	Unit Hydrograph (Hydrograph Table), 10 years	77
	Unit Hydrograph Summary, 10 years	75
	Unit Hydrograph (Hydrograph Table), 10 years	77
	Unit Hydrograph Summary, 25 years	85
	Unit Hydrograph (Hydrograph Table), 25 years	87
	Unit Hydrograph Summary, 25 years	85
	Unit Hydrograph (Hydrograph Table), 25 years	87
	Unit Hydrograph Summary, 100 years	95
	Unit Hydrograph (Hydrograph Table), 100 years	97
	Unit Hydrograph Summary, 100 years	95
	Unit Hydrograph (Hydrograph Table), 100 years	97
O-1		
	Addition Summary, 2 years	105
	Addition Summary, 2 years	105
	Addition Summary, 10 years	107
	Addition Summary, 10 years	107
	Addition Summary, 25 years	109
	Addition Summary, 25 years	109
	Addition Summary, 100 years	111
	Addition Summary, 100 years	111
PO-1 (OUT)		
	Time vs. Elevation, 2 years	113
	Time vs. Elevation, 10 years	116
	Time vs. Elevation, 25 years	119
	Time vs. Elevation, 100 years	122
PO-1		
	Time vs. Volume, 2 years	125
	Time vs. Volume, 10 years	128
	Time vs. Volume, 25 years	131
	Time vs. Volume, 100 years	134
PO-1		
	Elevation-Area Volume Curve, 2 years	137

Table of Contents

	Volume Equations, 2 years	138
	Elevation-Area Volume Curve, 10 years	139
	Volume Equations, 10 years	140
	Elevation-Area Volume Curve, 25 years	141
	Volume Equations, 25 years	142
	Elevation-Area Volume Curve, 100 years	143
	Volume Equations, 100 years	144
Composite Outlet Structure - 1		
	Outlet Input Data, 2 years	145
	Individual Outlet Curves, 2 years	149
	Composite Rating Curve, 2 years	158
	Outlet Input Data, 10 years	161
	Individual Outlet Curves, 10 years	165
	Composite Rating Curve, 10 years	169
	Outlet Input Data, 25 years	172
	Individual Outlet Curves, 25 years	176
	Composite Rating Curve, 25 years	180
	Outlet Input Data, 100 years	183
	Individual Outlet Curves, 100 years	187
	Composite Rating Curve, 100 years	191
Outlet-1		
	Diverted Hydrograph, 2 years	194
	Diverted Hydrograph, 10 years	197
	Diverted Hydrograph, 25 years	200
	Diverted Hydrograph, 100 years	203
PO-1		
	Elevation-Volume-Flow Table (Pond), 2 years	206
	Elevation-Volume-Flow Table (Pond), 10 years	208
	Elevation-Volume-Flow Table (Pond), 25 years	210
	Elevation-Volume-Flow Table (Pond), 100 years	212
PO-1 (IN)		
	Level Pool Pond Routing Summary, 2 years	214
	Level Pool Pond Routing Summary, 10 years	215
	Level Pool Pond Routing Summary, 25 years	216

Table of Contents

	Level Pool Pond Routing Summary, 100 years	217
PO-1 (OUT)		
	Pond Routed Hydrograph (total out), 2 years	218
	Pond Routed Hydrograph (total out), 10 years	221
	Pond Routed Hydrograph (total out), 25 years	224
	Pond Routed Hydrograph (total out), 100 years	227
PO-1 (IN)		
	Pond Inflow Summary, 2 years	230
	Pond Inflow Summary, 10 years	231
	Pond Inflow Summary, 25 years	232
	Pond Inflow Summary, 100 years	233

Brunswick Site

Subsection: User Notifications

User Notifications

Message Id	15
Scenario	Post-Development 25
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.500 .
Source	Warning
Message Id	67
Scenario	Post-Development 25
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure Composite Outlet Structure - 1. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning
Message Id	17
Scenario	Post-Development 25
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Riser orifice equation controls at one or more headwater elevations for outlet structure.
Source	Information
Message Id	15
Scenario	Post-Development 10
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified, Kr was set to same value as Ke= 0.500 .
Source	Warning

Brunswick Site

Subsection: User Notifications

User Notifications

Message Id	67
Scenario	Post-Development 10
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure Composite Outlet Structure - 1. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Message Id	17
Scenario	Post-Development 10
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Riser orifice equation controls at one or more headwater elevations for outlet structure.
Source	Information

Message Id	15
Scenario	Post-Development 100
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.500 .
Source	Warning

Message Id	67
Scenario	Post-Development 100
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure Composite Outlet Structure - 1. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Message Id	17
Scenario	Post-Development 100
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Riser orifice equation controls at one or more headwater elevations for outlet structure.
Source	Information

Brunswick Site

Subsection: User Notifications

User Notifications

Message Id	15
Scenario	Post-Development 2
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.500 .
Source	Warning

Message Id	67
Scenario	Post-Development 2
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Flow direction set to reverse for one ore more structures in composite outlet structure Composite Outlet Structure - 1. To eliminate this warning, edit outlet data and select forward only. If reverse flow analysis is required, then the tailwater conditions must be set to interconnected pond.
Source	Warning

Message Id	17
Scenario	Post-Development 2
Element Type	Composite Outlet Structure
Element Id	36
Label	Composite Outlet Structure - 1
Time	(N/A)
Message	Riser orifice equation controls at one or more headwater elevations for outlet structure.
Source	Information

Brunswick Site

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
CM-1	Pre-Development 2	2	18.803	8.000	53.72
CM-1	Post-Development 2	2	23.297	8.000	69.03
CM-1	Pre-Development 10	10	32.332	8.000	97.35
CM-1	Post-Development 10	10	38.790	8.000	118.73
CM-1	Post-Development 25	25	52.660	8.000	162.57
CM-1	Pre-Development 25	25	44.603	8.000	136.61
CM-1	Pre-Development 100	100	51.946	8.000	159.89
CM-1	Post-Development 100	100	60.912	7.950	188.38
CM-2	Pre-Development 2	2	8.421	8.000	25.20
CM-2	Post-Development 2	2	7.900	8.000	24.28
CM-2	Pre-Development 10	10	13.872	8.000	42.63
CM-2	Post-Development 10	10	12.528	7.950	38.79
CM-2	Post-Development 25	25	16.600	7.950	51.36
CM-2	Pre-Development 25	25	18.732	8.000	57.90
CM-2	Pre-Development 100	100	21.619	7.950	66.93
CM-2	Post-Development 100	100	19.005	7.950	58.70

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
O-1	Pre-Development 2	2	27.223	8.000	78.92
O-1	Post-Development 2	2	29.649	9.200	30.74
O-1	Pre-Development 10	10	46.204	8.000	139.98
O-1	Post-Development 10	10	48.566	8.400	78.63
O-1	Post-Development 25	25	64.988	8.200	152.78
O-1	Pre-Development 25	25	63.336	8.000	194.52
O-1	Pre-Development 100	100	73.565	8.000	226.76
O-1	Post-Development 100	100	74.702	8.150	201.21

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
PO-1 (IN)	Post-Development 2	2	31.197	8.000	93.31	(N/A)	(N/A)

Brunswick Site

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
PO-1 (OUT)	Post-Development 2	2	29.649	9.200	30.74	2,731.72	5.883
PO-1 (IN)	Post-Development 10	10	51.318	8.000	157.48	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 10	10	48.566	8.400	78.63	2,734.52	9.262
PO-1 (IN)	Post-Development 25	25	69.260	8.000	213.78	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 25	25	64.988	8.200	152.78	2,736.04	11.340
PO-1 (IN)	Post-Development 100	100	79.918	7.950	247.08	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 100	100	74.702	8.150	201.21	2,736.60	12.148

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Time-Depth Curve: Brunswick NC 10-yr	
Label	Brunswick NC 10-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.1
0.500	0.1	0.1	0.1	0.1	0.1
1.000	0.1	0.2	0.2	0.2	0.2
1.500	0.2	0.3	0.3	0.3	0.3
2.000	0.3	0.4	0.4	0.4	0.4
2.500	0.4	0.5	0.5	0.5	0.5
3.000	0.6	0.6	0.6	0.6	0.6
3.500	0.7	0.7	0.7	0.7	0.8
4.000	0.8	0.8	0.8	0.9	0.9
4.500	0.9	0.9	1.0	1.0	1.0
5.000	1.1	1.1	1.1	1.2	1.2
5.500	1.2	1.3	1.3	1.3	1.4
6.000	1.4	1.4	1.5	1.5	1.6
6.500	1.6	1.7	1.7	1.7	1.8
7.000	1.8	1.9	1.9	2.0	2.0
7.500	2.1	2.3	2.4	2.6	2.7
8.000	2.9	3.0	3.1	3.1	3.2
8.500	3.3	3.3	3.4	3.4	3.5
9.000	3.5	3.6	3.6	3.7	3.7
9.500	3.7	3.8	3.8	3.9	3.9
10.000	3.9	4.0	4.0	4.0	4.1
10.500	4.1	4.1	4.2	4.2	4.2
11.000	4.2	4.3	4.3	4.3	4.4
11.500	4.4	4.4	4.4	4.5	4.5
12.000	4.5	4.5	4.6	4.6	4.6
12.500	4.6	4.7	4.7	4.7	4.7
13.000	4.8	4.8	4.8	4.8	4.9
13.500	4.9	4.9	4.9	5.0	5.0
14.000	5.0	5.0	5.1	5.1	5.1
14.500	5.1	5.1	5.2	5.2	5.2
15.000	5.2	5.3	5.3	5.3	5.3
15.500	5.3	5.4	5.4	5.4	5.4
16.000	5.4	5.5	5.5	5.5	5.5

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	5.6	5.6	5.6	5.6	5.6
17.000	5.7	5.7	5.7	5.7	5.7
17.500	5.8	5.8	5.8	5.8	5.8
18.000	5.8	5.9	5.9	5.9	5.9
18.500	5.9	6.0	6.0	6.0	6.0
19.000	6.0	6.0	6.1	6.1	6.1
19.500	6.1	6.1	6.2	6.2	6.2
20.000	6.2	6.2	6.2	6.3	6.3
20.500	6.3	6.3	6.3	6.3	6.4
21.000	6.4	6.4	6.4	6.4	6.4
21.500	6.4	6.5	6.5	6.5	6.5
22.000	6.5	6.5	6.6	6.6	6.6
22.500	6.6	6.6	6.6	6.6	6.7
23.000	6.7	6.7	6.7	6.7	6.7
23.500	6.7	6.7	6.8	6.8	6.8
24.000	6.8	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Time-Depth Curve: Brunswick NC 10-yr	
Label	Brunswick NC 10-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.1
0.500	0.1	0.1	0.1	0.1	0.1
1.000	0.1	0.2	0.2	0.2	0.2
1.500	0.2	0.3	0.3	0.3	0.3
2.000	0.3	0.4	0.4	0.4	0.4
2.500	0.4	0.5	0.5	0.5	0.5
3.000	0.6	0.6	0.6	0.6	0.6
3.500	0.7	0.7	0.7	0.7	0.8
4.000	0.8	0.8	0.8	0.9	0.9
4.500	0.9	0.9	1.0	1.0	1.0
5.000	1.1	1.1	1.1	1.2	1.2
5.500	1.2	1.3	1.3	1.3	1.4
6.000	1.4	1.4	1.5	1.5	1.6
6.500	1.6	1.7	1.7	1.7	1.8
7.000	1.8	1.9	1.9	2.0	2.0
7.500	2.1	2.3	2.4	2.6	2.7
8.000	2.9	3.0	3.1	3.1	3.2
8.500	3.3	3.3	3.4	3.4	3.5
9.000	3.5	3.6	3.6	3.7	3.7
9.500	3.7	3.8	3.8	3.9	3.9
10.000	3.9	4.0	4.0	4.0	4.1
10.500	4.1	4.1	4.2	4.2	4.2
11.000	4.2	4.3	4.3	4.3	4.4
11.500	4.4	4.4	4.4	4.5	4.5
12.000	4.5	4.5	4.6	4.6	4.6
12.500	4.6	4.7	4.7	4.7	4.7
13.000	4.8	4.8	4.8	4.8	4.9
13.500	4.9	4.9	4.9	5.0	5.0
14.000	5.0	5.0	5.1	5.1	5.1
14.500	5.1	5.1	5.2	5.2	5.2
15.000	5.2	5.3	5.3	5.3	5.3
15.500	5.3	5.4	5.4	5.4	5.4
16.000	5.4	5.5	5.5	5.5	5.5

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	5.6	5.6	5.6	5.6	5.6
17.000	5.7	5.7	5.7	5.7	5.7
17.500	5.8	5.8	5.8	5.8	5.8
18.000	5.8	5.9	5.9	5.9	5.9
18.500	5.9	6.0	6.0	6.0	6.0
19.000	6.0	6.0	6.1	6.1	6.1
19.500	6.1	6.1	6.2	6.2	6.2
20.000	6.2	6.2	6.2	6.3	6.3
20.500	6.3	6.3	6.3	6.3	6.4
21.000	6.4	6.4	6.4	6.4	6.4
21.500	6.4	6.5	6.5	6.5	6.5
22.000	6.5	6.5	6.6	6.6	6.6
22.500	6.6	6.6	6.6	6.6	6.7
23.000	6.7	6.7	6.7	6.7	6.7
23.500	6.7	6.7	6.8	6.8	6.8
24.000	6.8	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Time-Depth Curve: Brunswick NC 25-yr	
Label	Brunswick NC 25-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.1	0.1
0.500	0.1	0.1	0.1	0.1	0.2
1.000	0.2	0.2	0.2	0.2	0.3
1.500	0.3	0.3	0.4	0.4	0.4
2.000	0.4	0.5	0.5	0.5	0.5
2.500	0.6	0.6	0.6	0.6	0.7
3.000	0.7	0.7	0.8	0.8	0.8
3.500	0.8	0.9	0.9	0.9	1.0
4.000	1.0	1.0	1.1	1.1	1.1
4.500	1.2	1.2	1.2	1.3	1.3
5.000	1.3	1.4	1.4	1.5	1.5
5.500	1.5	1.6	1.6	1.7	1.7
6.000	1.8	1.8	1.9	1.9	2.0
6.500	2.0	2.1	2.1	2.2	2.2
7.000	2.3	2.4	2.4	2.5	2.6
7.500	2.7	2.8	3.0	3.3	3.5
8.000	3.7	3.8	3.9	4.0	4.1
8.500	4.1	4.2	4.3	4.3	4.4
9.000	4.5	4.5	4.6	4.6	4.7
9.500	4.7	4.8	4.8	4.9	4.9
10.000	5.0	5.0	5.0	5.1	5.1
10.500	5.2	5.2	5.2	5.3	5.3
11.000	5.4	5.4	5.4	5.5	5.5
11.500	5.5	5.6	5.6	5.6	5.7
12.000	5.7	5.7	5.8	5.8	5.8
12.500	5.9	5.9	5.9	6.0	6.0
13.000	6.0	6.1	6.1	6.1	6.1
13.500	6.2	6.2	6.2	6.3	6.3
14.000	6.3	6.4	6.4	6.4	6.4
14.500	6.5	6.5	6.5	6.6	6.6
15.000	6.6	6.6	6.7	6.7	6.7
15.500	6.7	6.8	6.8	6.8	6.9
16.000	6.9	6.9	6.9	7.0	7.0

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	7.0	7.0	7.1	7.1	7.1
17.000	7.1	7.2	7.2	7.2	7.2
17.500	7.3	7.3	7.3	7.3	7.4
18.000	7.4	7.4	7.4	7.5	7.5
18.500	7.5	7.5	7.6	7.6	7.6
19.000	7.6	7.6	7.7	7.7	7.7
19.500	7.7	7.8	7.8	7.8	7.8
20.000	7.8	7.9	7.9	7.9	7.9
20.500	7.9	8.0	8.0	8.0	8.0
21.000	8.0	8.1	8.1	8.1	8.1
21.500	8.1	8.2	8.2	8.2	8.2
22.000	8.2	8.3	8.3	8.3	8.3
22.500	8.3	8.4	8.4	8.4	8.4
23.000	8.4	8.4	8.5	8.5	8.5
23.500	8.5	8.5	8.5	8.6	8.6
24.000	8.6	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Time-Depth Curve: Brunswick NC 25-yr	
Label	Brunswick NC 25-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.1	0.1
0.500	0.1	0.1	0.1	0.1	0.2
1.000	0.2	0.2	0.2	0.2	0.3
1.500	0.3	0.3	0.4	0.4	0.4
2.000	0.4	0.5	0.5	0.5	0.5
2.500	0.6	0.6	0.6	0.6	0.7
3.000	0.7	0.7	0.8	0.8	0.8
3.500	0.8	0.9	0.9	0.9	1.0
4.000	1.0	1.0	1.1	1.1	1.1
4.500	1.2	1.2	1.2	1.3	1.3
5.000	1.3	1.4	1.4	1.5	1.5
5.500	1.5	1.6	1.6	1.7	1.7
6.000	1.8	1.8	1.9	1.9	2.0
6.500	2.0	2.1	2.1	2.2	2.2
7.000	2.3	2.4	2.4	2.5	2.6
7.500	2.7	2.8	3.0	3.3	3.5
8.000	3.7	3.8	3.9	4.0	4.1
8.500	4.1	4.2	4.3	4.3	4.4
9.000	4.5	4.5	4.6	4.6	4.7
9.500	4.7	4.8	4.8	4.9	4.9
10.000	5.0	5.0	5.0	5.1	5.1
10.500	5.2	5.2	5.2	5.3	5.3
11.000	5.4	5.4	5.4	5.5	5.5
11.500	5.5	5.6	5.6	5.6	5.7
12.000	5.7	5.7	5.8	5.8	5.8
12.500	5.9	5.9	5.9	6.0	6.0
13.000	6.0	6.1	6.1	6.1	6.1
13.500	6.2	6.2	6.2	6.3	6.3
14.000	6.3	6.4	6.4	6.4	6.4
14.500	6.5	6.5	6.5	6.6	6.6
15.000	6.6	6.6	6.7	6.7	6.7
15.500	6.7	6.8	6.8	6.8	6.9
16.000	6.9	6.9	6.9	7.0	7.0

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	7.0	7.0	7.1	7.1	7.1
17.000	7.1	7.2	7.2	7.2	7.2
17.500	7.3	7.3	7.3	7.3	7.4
18.000	7.4	7.4	7.4	7.5	7.5
18.500	7.5	7.5	7.6	7.6	7.6
19.000	7.6	7.6	7.7	7.7	7.7
19.500	7.7	7.8	7.8	7.8	7.8
20.000	7.8	7.9	7.9	7.9	7.9
20.500	7.9	8.0	8.0	8.0	8.0
21.000	8.0	8.1	8.1	8.1	8.1
21.500	8.1	8.2	8.2	8.2	8.2
22.000	8.2	8.3	8.3	8.3	8.3
22.500	8.3	8.4	8.4	8.4	8.4
23.000	8.4	8.4	8.5	8.5	8.5
23.500	8.5	8.5	8.5	8.6	8.6
24.000	8.6	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Time-Depth Curve: Brunswick NC 2-yr	
Label	Brunswick NC 2-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	2 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.2
1.500	0.2	0.2	0.2	0.2	0.2
2.000	0.2	0.3	0.3	0.3	0.3
2.500	0.3	0.3	0.3	0.4	0.4
3.000	0.4	0.4	0.4	0.4	0.4
3.500	0.5	0.5	0.5	0.5	0.5
4.000	0.5	0.6	0.6	0.6	0.6
4.500	0.6	0.7	0.7	0.7	0.7
5.000	0.7	0.8	0.8	0.8	0.8
5.500	0.9	0.9	0.9	0.9	0.9
6.000	1.0	1.0	1.0	1.1	1.1
6.500	1.1	1.1	1.2	1.2	1.2
7.000	1.3	1.3	1.3	1.4	1.4
7.500	1.5	1.6	1.7	1.8	1.9
8.000	2.0	2.1	2.1	2.2	2.2
8.500	2.3	2.3	2.4	2.4	2.4
9.000	2.5	2.5	2.5	2.5	2.6
9.500	2.6	2.6	2.7	2.7	2.7
10.000	2.7	2.8	2.8	2.8	2.8
10.500	2.8	2.9	2.9	2.9	2.9
11.000	3.0	3.0	3.0	3.0	3.0
11.500	3.1	3.1	3.1	3.1	3.1
12.000	3.1	3.2	3.2	3.2	3.2
12.500	3.2	3.2	3.3	3.3	3.3
13.000	3.3	3.3	3.4	3.4	3.4
13.500	3.4	3.4	3.4	3.4	3.5
14.000	3.5	3.5	3.5	3.5	3.5
14.500	3.6	3.6	3.6	3.6	3.6
15.000	3.6	3.7	3.7	3.7	3.7
15.500	3.7	3.7	3.7	3.8	3.8
16.000	3.8	3.8	3.8	3.8	3.8
16.500	3.9	3.9	3.9	3.9	3.9

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.9	3.9	4.0	4.0	4.0
17.500	4.0	4.0	4.0	4.0	4.1
18.000	4.1	4.1	4.1	4.1	4.1
18.500	4.1	4.1	4.2	4.2	4.2
19.000	4.2	4.2	4.2	4.2	4.2
19.500	4.3	4.3	4.3	4.3	4.3
20.000	4.3	4.3	4.3	4.4	4.4
20.500	4.4	4.4	4.4	4.4	4.4
21.000	4.4	4.4	4.5	4.5	4.5
21.500	4.5	4.5	4.5	4.5	4.5
22.000	4.5	4.5	4.6	4.6	4.6
22.500	4.6	4.6	4.6	4.6	4.6
23.000	4.6	4.6	4.7	4.7	4.7
23.500	4.7	4.7	4.7	4.7	4.7
24.000	4.7	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Time-Depth Curve: Brunswick NC 2-yr	
Label	Brunswick NC 2-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	2 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.2
1.500	0.2	0.2	0.2	0.2	0.2
2.000	0.2	0.3	0.3	0.3	0.3
2.500	0.3	0.3	0.3	0.4	0.4
3.000	0.4	0.4	0.4	0.4	0.4
3.500	0.5	0.5	0.5	0.5	0.5
4.000	0.5	0.6	0.6	0.6	0.6
4.500	0.6	0.7	0.7	0.7	0.7
5.000	0.7	0.8	0.8	0.8	0.8
5.500	0.9	0.9	0.9	0.9	0.9
6.000	1.0	1.0	1.0	1.1	1.1
6.500	1.1	1.1	1.2	1.2	1.2
7.000	1.3	1.3	1.3	1.4	1.4
7.500	1.5	1.6	1.7	1.8	1.9
8.000	2.0	2.1	2.1	2.2	2.2
8.500	2.3	2.3	2.4	2.4	2.4
9.000	2.5	2.5	2.5	2.5	2.6
9.500	2.6	2.6	2.7	2.7	2.7
10.000	2.7	2.8	2.8	2.8	2.8
10.500	2.8	2.9	2.9	2.9	2.9
11.000	3.0	3.0	3.0	3.0	3.0
11.500	3.1	3.1	3.1	3.1	3.1
12.000	3.1	3.2	3.2	3.2	3.2
12.500	3.2	3.2	3.3	3.3	3.3
13.000	3.3	3.3	3.4	3.4	3.4
13.500	3.4	3.4	3.4	3.4	3.5
14.000	3.5	3.5	3.5	3.5	3.5
14.500	3.6	3.6	3.6	3.6	3.6
15.000	3.6	3.7	3.7	3.7	3.7
15.500	3.7	3.7	3.7	3.8	3.8
16.000	3.8	3.8	3.8	3.8	3.8
16.500	3.9	3.9	3.9	3.9	3.9

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.9	3.9	4.0	4.0	4.0
17.500	4.0	4.0	4.0	4.0	4.1
18.000	4.1	4.1	4.1	4.1	4.1
18.500	4.1	4.1	4.2	4.2	4.2
19.000	4.2	4.2	4.2	4.2	4.2
19.500	4.3	4.3	4.3	4.3	4.3
20.000	4.3	4.3	4.3	4.4	4.4
20.500	4.4	4.4	4.4	4.4	4.4
21.000	4.4	4.4	4.5	4.5	4.5
21.500	4.5	4.5	4.5	4.5	4.5
22.000	4.5	4.5	4.6	4.6	4.6
22.500	4.6	4.6	4.6	4.6	4.6
23.000	4.6	4.6	4.7	4.7	4.7
23.500	4.7	4.7	4.7	4.7	4.7
24.000	4.7	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Time-Depth Curve: Brunswick NC 100-yr	
Label	Brunswick NC 100-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.1	0.1
0.500	0.1	0.1	0.1	0.2	0.2
1.000	0.2	0.2	0.2	0.3	0.3
1.500	0.3	0.4	0.4	0.4	0.5
2.000	0.5	0.5	0.5	0.6	0.6
2.500	0.6	0.7	0.7	0.7	0.8
3.000	0.8	0.8	0.9	0.9	0.9
3.500	0.9	1.0	1.0	1.0	1.1
4.000	1.1	1.2	1.2	1.2	1.3
4.500	1.3	1.3	1.4	1.4	1.5
5.000	1.5	1.5	1.6	1.6	1.7
5.500	1.7	1.8	1.8	1.9	1.9
6.000	2.0	2.0	2.1	2.2	2.2
6.500	2.3	2.3	2.4	2.5	2.5
7.000	2.6	2.7	2.7	2.8	2.9
7.500	3.0	3.2	3.4	3.7	3.9
8.000	4.1	4.2	4.4	4.5	4.5
8.500	4.6	4.7	4.8	4.9	4.9
9.000	5.0	5.1	5.1	5.2	5.2
9.500	5.3	5.4	5.4	5.5	5.5
10.000	5.6	5.6	5.7	5.7	5.7
10.500	5.8	5.8	5.9	5.9	6.0
11.000	6.0	6.1	6.1	6.1	6.2
11.500	6.2	6.3	6.3	6.3	6.4
12.000	6.4	6.4	6.5	6.5	6.5
12.500	6.6	6.6	6.7	6.7	6.7
13.000	6.8	6.8	6.8	6.9	6.9
13.500	6.9	7.0	7.0	7.0	7.1
14.000	7.1	7.1	7.2	7.2	7.2
14.500	7.3	7.3	7.3	7.4	7.4
15.000	7.4	7.4	7.5	7.5	7.5
15.500	7.6	7.6	7.6	7.7	7.7
16.000	7.7	7.8	7.8	7.8	7.8

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	7.9	7.9	7.9	8.0	8.0
17.000	8.0	8.0	8.1	8.1	8.1
17.500	8.2	8.2	8.2	8.2	8.3
18.000	8.3	8.3	8.3	8.4	8.4
18.500	8.4	8.4	8.5	8.5	8.5
19.000	8.6	8.6	8.6	8.6	8.7
19.500	8.7	8.7	8.7	8.7	8.8
20.000	8.8	8.8	8.8	8.9	8.9
20.500	8.9	8.9	9.0	9.0	9.0
21.000	9.0	9.1	9.1	9.1	9.1
21.500	9.1	9.2	9.2	9.2	9.2
22.000	9.2	9.3	9.3	9.3	9.3
22.500	9.4	9.4	9.4	9.4	9.4
23.000	9.5	9.5	9.5	9.5	9.5
23.500	9.5	9.6	9.6	9.6	9.6
24.000	9.6	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Time-Depth Curve: Brunswick NC 100-yr	
Label	Brunswick NC 100-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.1	0.1
0.500	0.1	0.1	0.1	0.2	0.2
1.000	0.2	0.2	0.2	0.3	0.3
1.500	0.3	0.4	0.4	0.4	0.5
2.000	0.5	0.5	0.5	0.6	0.6
2.500	0.6	0.7	0.7	0.7	0.8
3.000	0.8	0.8	0.9	0.9	0.9
3.500	0.9	1.0	1.0	1.0	1.1
4.000	1.1	1.2	1.2	1.2	1.3
4.500	1.3	1.3	1.4	1.4	1.5
5.000	1.5	1.5	1.6	1.6	1.7
5.500	1.7	1.8	1.8	1.9	1.9
6.000	2.0	2.0	2.1	2.2	2.2
6.500	2.3	2.3	2.4	2.5	2.5
7.000	2.6	2.7	2.7	2.8	2.9
7.500	3.0	3.2	3.4	3.7	3.9
8.000	4.1	4.2	4.4	4.5	4.5
8.500	4.6	4.7	4.8	4.9	4.9
9.000	5.0	5.1	5.1	5.2	5.2
9.500	5.3	5.4	5.4	5.5	5.5
10.000	5.6	5.6	5.7	5.7	5.7
10.500	5.8	5.8	5.9	5.9	6.0
11.000	6.0	6.1	6.1	6.1	6.2
11.500	6.2	6.3	6.3	6.3	6.4
12.000	6.4	6.4	6.5	6.5	6.5
12.500	6.6	6.6	6.7	6.7	6.7
13.000	6.8	6.8	6.8	6.9	6.9
13.500	6.9	7.0	7.0	7.0	7.1
14.000	7.1	7.1	7.2	7.2	7.2
14.500	7.3	7.3	7.3	7.4	7.4
15.000	7.4	7.4	7.5	7.5	7.5
15.500	7.6	7.6	7.6	7.7	7.7
16.000	7.7	7.8	7.8	7.8	7.8

Brunswick Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	7.9	7.9	7.9	8.0	8.0
17.000	8.0	8.0	8.1	8.1	8.1
17.500	8.2	8.2	8.2	8.2	8.3
18.000	8.3	8.3	8.3	8.4	8.4
18.500	8.4	8.4	8.5	8.5	8.5
19.000	8.6	8.6	8.6	8.6	8.7
19.500	8.7	8.7	8.7	8.7	8.8
20.000	8.8	8.8	8.8	8.9	8.9
20.500	8.9	8.9	9.0	9.0	9.0
21.000	9.0	9.1	9.1	9.1	9.1
21.500	9.1	9.2	9.2	9.2	9.2
22.000	9.2	9.3	9.3	9.3	9.3
22.500	9.4	9.4	9.4	9.4	9.4
23.000	9.5	9.5	9.5	9.5	9.5
23.500	9.5	9.6	9.6	9.6	9.6
24.000	9.6	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method (Computational Notes)

Definition of Terms

At	Total area (acres): $At = Ai + Ap$
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate (time^{-1})
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of $0.1333Tc$, r_{tm} , and t_h (Smallest dt is then adjusted to match up with T_p)
UDdt	User specified override computational main time increment (only used if UDdt is $\Rightarrow .1333Tc$)
D(t)	Point on distribution curve (fraction of P) for time step t
K	$2 / (1 + (T_r/T_p))$: default $K = 0.75$: (for $T_r/T_p = 1.67$)
Ks	Hydrograph shape factor = Unit Conversions * $K = ((1\text{hr}/3600\text{sec}) * (1\text{ft}/12\text{in}) * ((5280\text{ft})^2/\text{sq.mi})) * K$ Default $K_s = 645.333 * 0.75 = 484$
Lag	Lag time from center of excess runoff (dt) to T_p : $Lag = 0.6Tc$
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
Pi(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = $(K_s * A * Q) / T_p$ (where $Q = 1\text{in. runoff}$, $A = \text{sq.mi.}$)
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: $Si = (1000/CNi) - 10$
Sp	S for pervious area: $Sp = (1000/CNp) - 10$
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: $Tb = T_p + T_r$
Tp	Time (hrs) to peak of a unit hydrograph: $Tp = (dt/2) + Lag$
Tr	Time (hrs) of receding limb of unit hydrograph: $Tr = \text{ratio of } T_p$

Brunswick Site

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method Computational Notes

Precipitation

Column (1)	Time for time step t
Column (2)	D(t) = Point on distribution curve for time step t
Column (3)	PI(t) = Pa(t) - Pa(t-1): Col.(4) - Preceding Col.(4)
Column (4)	Pa(t) = D(t) x P: Col.(2) x P

Pervious Area Runoff (using SCS Runoff CN Method)

Column (5)	Rap(t) = Accumulated pervious runoff for time step t If (Pa(t) is <= 0.2Sp) then use: Rap(t) = 0.0 If (Pa(t) is > 0.2Sp) then use: $Rap(t) = (Col.(4) - 0.2Sp) * 2 / (Col.(4) + 0.8Sp)$
Column (6)	Rip(t) = Incremental pervious runoff for time step t $Rip(t) = Rap(t) - Rap(t-1)$ Rip(t) = Col.(5) for current row - Col.(5) for preceding row.

Impervious Area Runoff

Column (7 & 8)...	Did not specify to use impervious areas.
-------------------	--

Incremental Weighted Runoff

Column (9)	$R(t) = (Ap/At) \times Rip(t) + (Ai/At) \times Ril(t)$ $R(t) = (Ap/At) \times Col.(6) + (Ai/At) \times Col.(8)$
------------	---

SCS Unit Hydrograph Method

Column (10)	Q(t) is computed with the SCS unit hydrograph method using R(t) and Qu(t).
-------------	--

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Storm Event	Brunswick NC 2-yr
Return Event	2 years
Duration	24.000 hours
Depth	4.7 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	98.600 acres

Computational Time Increment	0.027 hours
Time to Peak (Computed)	8.000 hours
Flow (Peak, Computed)	69.03 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	69.03 ft ³ /s

Drainage Area	
SCS CN (Composite)	82.100
Area (User Defined)	98.600 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in

Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.8 in
Runoff Volume (Pervious)	23.401 ac-ft

Hydrograph Volume (Area under Hydrograph curve)	
Volume	23.297 ac-ft

SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

SCS Unit Hydrograph Parameters	
Unit peak, qp	558.59 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

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

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Storm Event	Brunswick NC 2-yr
Return Event	2 years
Duration	24.000 hours
Depth	4.7 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	98.600 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)
3.350	0.00	0.01	0.04	0.10	0.18
3.600	0.28	0.39	0.51	0.63	0.75
3.850	0.88	1.01	1.14	1.27	1.40
4.100	1.52	1.64	1.77	1.89	2.02
4.350	2.15	2.29	2.43	2.57	2.72
4.600	2.87	3.02	3.17	3.33	3.49
4.850	3.66	3.83	4.01	4.20	4.39
5.100	4.59	4.81	5.03	5.25	5.46
5.350	5.67	5.88	6.09	6.30	6.50
5.600	6.67	6.83	7.01	7.21	7.43
5.850	7.66	7.91	8.17	8.44	8.76
6.100	9.17	9.60	10.02	10.39	10.73
6.350	11.05	11.35	11.62	11.88	12.05
6.600	12.06	11.99	11.98	12.09	12.30
6.850	12.58	12.93	13.32	13.79	14.30
7.100	14.88	15.52	16.23	16.99	17.84
7.350	18.74	19.73	20.78	22.00	24.80
7.600	31.84	41.16	49.56	55.80	60.55
7.850	64.11	66.68	68.33	69.03	67.85
8.100	62.82	55.95	49.68	45.03	41.29
8.350	38.23	35.57	33.33	31.36	29.96
8.600	29.43	29.45	29.36	28.97	28.38
8.850	27.73	27.02	26.32	25.62	24.95
9.100	24.28	23.66	23.04	22.47	21.91
9.350	21.38	20.88	20.43	19.99	19.68
9.600	19.60	19.66	19.68	19.61	19.50
9.850	19.36	19.20	19.03	18.86	18.67
10.100	18.44	18.20	17.98	17.78	17.61
10.350	17.46	17.34	17.23	17.13	17.07
10.600	17.09	17.17	17.19	17.16	17.08
10.850	16.98	16.87	16.75	16.63	16.50
11.100	16.38	16.25	16.12	16.00	15.87
11.350	15.74	15.60	15.47	15.34	15.20

Brunswick Site

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

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

Time (hours)	Flow (ft ³ /s)				
11.600	15.01	14.81	14.63	14.50	14.39
11.850	14.31	14.23	14.17	14.13	14.10
12.100	14.08	14.08	14.09	14.13	14.18
12.350	14.25	14.33	14.42	14.53	14.58
12.600	14.47	14.26	14.06	13.94	13.85
12.850	13.78	13.74	13.71	13.68	13.70
13.100	13.82	13.98	14.06	14.04	13.99
13.350	13.92	13.82	13.72	13.63	13.55
13.600	13.48	13.41	13.33	13.27	13.23
13.850	13.19	13.16	13.12	13.10	13.09
14.100	13.11	13.13	13.15	13.15	13.14
14.350	13.12	13.10	13.08	13.06	13.04
14.600	13.02	13.00	12.98	12.95	12.92
14.850	12.90	12.87	12.85	12.84	12.82
15.100	12.80	12.78	12.76	12.74	12.71
15.350	12.69	12.66	12.63	12.60	12.58
15.600	12.56	12.53	12.51	12.49	12.47
15.850	12.46	12.43	12.41	12.38	12.35
16.100	12.32	12.30	12.28	12.25	12.23
16.350	12.20	12.18	12.15	12.13	12.11
16.600	12.08	12.06	12.03	12.01	11.98
16.850	11.96	11.93	11.91	11.89	11.86
17.100	11.83	11.81	11.79	11.76	11.72
17.350	11.69	11.67	11.64	11.62	11.61
17.600	11.58	11.55	11.53	11.51	11.48
17.850	11.45	11.42	11.38	11.36	11.33
18.100	11.31	11.28	11.25	11.23	11.21
18.350	11.19	11.17	11.14	11.10	11.07
18.600	11.04	11.02	10.99	10.96	10.93
18.850	10.91	10.88	10.85	10.83	10.80
19.100	10.77	10.75	10.72	10.70	10.67
19.350	10.64	10.61	10.59	10.56	10.53
19.600	10.50	10.48	10.45	10.42	10.38
19.850	10.35	10.32	10.30	10.27	10.25
20.100	10.23	10.20	10.17	10.14	10.12
20.350	10.08	10.05	10.01	9.98	9.96
20.600	9.93	9.90	9.87	9.85	9.83
20.850	9.81	9.78	9.75	9.71	9.68
21.100	9.65	9.62	9.59	9.56	9.53
21.350	9.50	9.47	9.44	9.42	9.39
21.600	9.36	9.33	9.30	9.28	9.25
21.850	9.21	9.19	9.16	9.13	9.10

Brunswick Site

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

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
22.100	9.07	9.04	9.01	8.98	8.94
22.350	8.91	8.88	8.85	8.83	8.81
22.600	8.78	8.75	8.72	8.69	8.66
22.850	8.63	8.59	8.56	8.53	8.50
23.100	8.47	8.44	8.41	8.38	8.36
23.350	8.34	8.31	8.28	8.24	8.20
23.600	8.17	8.14	8.11	8.08	8.05
23.850	8.02	7.99	7.96	7.94	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Storm Event	Brunswick NC 2-yr
Return Event	2 years
Duration	24.000 hours
Depth	4.7 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	89.400 acres
Computational Time Increment	0.027 hours
Time to Peak (Computed)	8.000 hours
Flow (Peak, Computed)	53.72 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	53.72 ft ³ /s
Drainage Area	
SCS CN (Composite)	78.600
Area (User Defined)	89.400 acres
Maximum Retention (Pervious)	2.7 in
Maximum Retention (Pervious, 20 percent)	0.5 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.5 in
Runoff Volume (Pervious)	18.893 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	18.803 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

SCS Unit Hydrograph Parameters	
Unit peak, qp	506.47 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

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

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Storm Event	Brunswick NC 2-yr
Return Event	2 years
Duration	24.000 hours
Depth	4.7 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	89.400 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
4.000	0.00	0.01	0.03	0.09	0.16
4.250	0.25	0.34	0.44	0.54	0.65
4.500	0.76	0.87	0.98	1.09	1.21
4.750	1.33	1.46	1.58	1.71	1.85
5.000	1.99	2.13	2.28	2.44	2.61
5.250	2.77	2.93	3.10	3.26	3.43
5.500	3.59	3.75	3.90	4.04	4.19
5.750	4.35	4.53	4.71	4.91	5.11
6.000	5.33	5.57	5.87	6.20	6.51
6.250	6.80	7.07	7.33	7.57	7.80
6.500	8.02	8.18	8.23	8.23	8.26
6.750	8.37	8.56	8.79	9.07	9.38
7.000	9.75	10.15	10.61	11.10	11.66
7.250	12.25	12.91	13.62	14.39	15.21
7.500	16.17	18.32	23.65	30.75	37.24
7.750	42.19	46.06	49.06	51.33	52.90
8.000	53.72	53.04	49.30	44.06	39.25
8.250	35.68	32.79	30.44	28.37	26.64
8.500	25.10	24.02	23.63	23.68	23.63
8.750	23.35	22.90	22.41	21.86	21.31
9.000	20.76	20.24	19.72	19.23	18.74
9.250	18.29	17.84	17.43	17.04	16.67
9.500	16.33	16.09	16.03	16.09	16.11
9.750	16.07	15.99	15.88	15.76	15.63
10.000	15.49	15.35	15.17	14.98	14.80
10.250	14.65	14.52	14.40	14.30	14.22
10.500	14.14	14.10	14.13	14.19	14.22
10.750	14.20	14.14	14.06	13.98	13.88
11.000	13.79	13.69	13.59	13.49	13.39
11.250	13.29	13.19	13.08	12.98	12.87
11.500	12.77	12.65	12.50	12.34	12.20
11.750	12.09	12.00	11.93	11.87	11.83
12.000	11.79	11.78	11.76	11.76	11.78

Brunswick Site

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

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

Time (hours)	Flow (ft ³ /s)				
12.250	11.81	11.86	11.92	11.99	12.07
12.500	12.16	12.21	12.12	11.94	11.79
12.750	11.68	11.61	11.56	11.53	11.50
13.000	11.48	11.50	11.60	11.74	11.81
13.250	11.80	11.76	11.70	11.62	11.54
13.500	11.47	11.40	11.34	11.29	11.23
13.750	11.18	11.14	11.12	11.09	11.06
14.000	11.04	11.04	11.06	11.08	11.09
14.250	11.10	11.09	11.08	11.06	11.05
14.500	11.04	11.02	11.00	10.99	10.97
14.750	10.95	10.93	10.91	10.89	10.88
15.000	10.87	10.86	10.84	10.82	10.81
15.250	10.79	10.77	10.75	10.73	10.71
15.500	10.69	10.67	10.65	10.63	10.62
15.750	10.60	10.59	10.58	10.56	10.54
16.000	10.51	10.49	10.47	10.45	10.43
16.250	10.41	10.40	10.38	10.36	10.34
16.500	10.32	10.30	10.28	10.26	10.24
16.750	10.23	10.21	10.18	10.16	10.15
17.000	10.13	10.11	10.09	10.07	10.05
17.250	10.02	10.00	9.97	9.95	9.93
17.500	9.92	9.90	9.88	9.86	9.84
17.750	9.82	9.80	9.78	9.75	9.73
18.000	9.70	9.68	9.66	9.64	9.62
18.250	9.60	9.58	9.57	9.55	9.52
18.500	9.50	9.47	9.45	9.43	9.40
18.750	9.38	9.36	9.34	9.32	9.29
19.000	9.27	9.25	9.23	9.21	9.18
19.250	9.16	9.14	9.12	9.09	9.07
19.500	9.05	9.03	9.00	8.98	8.96
19.750	8.93	8.90	8.88	8.85	8.83
20.000	8.82	8.80	8.78	8.75	8.73
20.250	8.71	8.69	8.66	8.63	8.60
20.500	8.58	8.56	8.53	8.51	8.48
20.750	8.46	8.45	8.43	8.40	8.38
21.000	8.35	8.32	8.30	8.27	8.25
21.250	8.22	8.20	8.18	8.15	8.13
21.500	8.10	8.08	8.06	8.03	8.01
21.750	7.98	7.96	7.93	7.91	7.89
22.000	7.86	7.84	7.81	7.79	7.77
22.250	7.74	7.71	7.68	7.65	7.63
22.500	7.61	7.59	7.57	7.54	7.52

Brunswick Site

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

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

Time (hours)	Flow (ft ³ /s)				
22.750	7.50	7.47	7.44	7.41	7.38
23.000	7.35	7.33	7.30	7.28	7.25
23.250	7.23	7.21	7.19	7.17	7.14
23.500	7.11	7.08	7.05	7.03	7.00
23.750	6.98	6.95	6.93	6.90	6.88
24.000	6.86	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Storm Event	Brunswick NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	98.600 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	8.000 hours
Flow (Peak, Computed)	118.73 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	118.73 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	82.100
Area (User Defined)	98.600 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.7 in
Runoff Volume (Pervious)	38.948 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	38.790 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	558.59 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

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

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Storm Event	Brunswick NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	98.600 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft ³ /s)
2.450	0.00	0.01	0.05	0.14	0.29
2.700	0.46	0.65	0.84	1.04	1.24
2.950	1.43	1.62	1.81	1.99	2.16
3.200	2.33	2.51	2.69	2.87	3.06
3.450	3.25	3.45	3.65	3.89	4.14
3.700	4.40	4.64	4.88	5.11	5.35
3.950	5.59	5.82	6.04	6.24	6.43
4.200	6.63	6.84	7.06	7.29	7.53
4.450	7.77	8.02	8.27	8.53	8.80
4.700	9.07	9.35	9.63	9.93	10.24
4.950	10.56	10.89	11.23	11.61	12.00
5.200	12.40	12.78	13.15	13.51	13.87
5.450	14.22	14.57	14.89	15.15	15.38
5.700	15.65	15.97	16.33	16.72	17.13
5.950	17.56	18.04	18.59	19.31	20.10
6.200	20.84	21.48	22.05	22.56	23.03
6.450	23.45	23.83	24.06	23.95	23.70
6.700	23.57	23.68	23.98	24.42	24.98
6.950	25.63	26.41	27.28	28.28	29.36
7.200	30.58	31.87	33.33	34.87	36.55
7.450	38.33	40.42	45.33	57.82	74.25
7.700	88.81	99.28	106.96	112.45	116.17
7.950	118.26	118.73	116.05	106.94	94.87
8.200	83.92	75.80	69.28	63.98	59.36
8.450	55.51	52.12	49.70	48.74	48.69
8.700	48.46	47.74	46.71	45.58	44.36
8.950	43.15	41.95	40.80	39.67	38.61
9.200	37.56	36.60	35.64	34.76	33.92
9.450	33.15	32.42	31.89	31.73	31.80
9.700	31.81	31.69	31.47	31.23	30.95
9.950	30.66	30.36	30.04	29.65	29.25
10.200	28.87	28.54	28.25	27.99	27.78

Brunswick Site

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

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
10.450	27.59	27.41	27.30	27.32	27.43
10.700	27.45	27.38	27.24	27.07	26.88
10.950	26.68	26.47	26.26	26.05	25.84
11.200	25.62	25.41	25.19	24.98	24.75
11.450	24.54	24.32	24.08	23.77	23.45
11.700	23.16	22.94	22.76	22.62	22.49
11.950	22.39	22.31	22.26	22.23	22.21
12.200	22.23	22.27	22.35	22.45	22.57
12.450	22.70	22.86	22.94	22.75	22.41
12.700	22.10	21.90	21.75	21.64	21.57
12.950	21.51	21.47	21.49	21.67	21.91
13.200	22.03	22.00	21.91	21.79	21.64
13.450	21.48	21.33	21.19	21.07	20.95
13.700	20.84	20.73	20.66	20.60	20.54
13.950	20.48	20.44	20.42	20.44	20.47
14.200	20.49	20.49	20.46	20.43	20.40
14.450	20.37	20.33	20.29	20.25	20.22
14.700	20.18	20.14	20.09	20.04	20.00
14.950	19.97	19.94	19.91	19.87	19.83
15.200	19.79	19.76	19.72	19.67	19.62
15.450	19.57	19.53	19.49	19.45	19.41
15.700	19.37	19.34	19.31	19.28	19.24
15.950	19.19	19.14	19.09	19.05	19.01
16.200	18.97	18.92	18.88	18.85	18.81
16.450	18.76	18.72	18.68	18.64	18.60
16.700	18.56	18.52	18.48	18.43	18.39
16.950	18.36	18.31	18.27	18.23	18.19
17.200	18.15	18.10	18.04	17.99	17.95
17.450	17.91	17.88	17.85	17.81	17.76
17.700	17.72	17.69	17.64	17.59	17.54
17.950	17.49	17.44	17.40	17.36	17.31
18.200	17.27	17.23	17.20	17.17	17.13
18.450	17.08	17.03	16.98	16.93	16.89
18.700	16.84	16.80	16.75	16.72	16.67
18.950	16.62	16.58	16.54	16.50	16.45
19.200	16.41	16.37	16.32	16.28	16.23
19.450	16.19	16.15	16.10	16.06	16.02
19.700	15.97	15.92	15.87	15.81	15.77
19.950	15.73	15.70	15.66	15.62	15.57
20.200	15.53	15.49	15.44	15.39	15.34
20.450	15.28	15.24	15.19	15.15	15.10
20.700	15.06	15.02	14.98	14.95	14.91

Brunswick Site

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

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
20.950	14.86	14.80	14.75	14.70	14.66
21.200	14.61	14.56	14.52	14.48	14.43
21.450	14.38	14.34	14.30	14.25	14.20
21.700	14.16	14.12	14.07	14.02	13.98
21.950	13.94	13.89	13.84	13.80	13.76
22.200	13.71	13.66	13.60	13.54	13.50
22.450	13.46	13.42	13.39	13.34	13.29
22.700	13.25	13.21	13.16	13.11	13.05
22.950	13.00	12.95	12.91	12.86	12.81
23.200	12.76	12.73	12.69	12.65	12.61
23.450	12.56	12.50	12.45	12.40	12.36
23.700	12.31	12.26	12.21	12.17	12.12
23.950	12.08	12.04	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Storm Event	Brunswick NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	89.400 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	8.000 hours
Flow (Peak, Computed)	97.35 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	97.35 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.600
Area (User Defined)	89.400 acres
Maximum Retention (Pervious)	2.7 in
Maximum Retention (Pervious, 20 percent)	0.5 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.4 in
Runoff Volume (Pervious)	32.471 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	32.332 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	506.47 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

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

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Storm Event	Brunswick NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	89.400 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
2.950	0.00	0.01	0.04	0.11	0.21
3.200	0.33	0.47	0.61	0.75	0.90
3.450	1.05	1.21	1.37	1.54	1.72
3.700	1.91	2.09	2.28	2.46	2.65
3.950	2.84	3.02	3.21	3.38	3.54
4.200	3.71	3.89	4.07	4.26	4.45
4.450	4.65	4.85	5.06	5.27	5.49
4.700	5.71	5.93	6.16	6.40	6.65
4.950	6.91	7.17	7.45	7.75	8.06
5.200	8.38	8.68	8.99	9.29	9.58
5.450	9.87	10.16	10.44	10.67	10.88
5.700	11.12	11.39	11.70	12.02	12.37
5.950	12.73	13.12	13.57	14.15	14.78
6.200	15.38	15.90	16.38	16.81	17.22
6.450	17.59	17.93	18.15	18.12	17.98
6.700	17.93	18.05	18.33	18.71	19.19
6.950	19.74	20.38	21.10	21.92	22.81
7.200	23.81	24.88	26.08	27.35	28.74
7.450	30.21	31.93	35.91	45.97	59.26
7.700	71.15	79.85	86.38	91.18	94.55
7.950	96.62	97.35	95.45	88.19	78.42
8.200	69.51	62.91	57.60	53.28	49.51
8.450	46.35	43.57	41.60	40.83	40.83
8.700	40.67	40.10	39.26	38.35	37.34
8.950	36.36	35.37	34.42	33.49	32.61
9.200	31.75	30.95	30.16	29.43	28.73
9.450	28.09	27.49	27.05	26.92	27.00
9.700	27.01	26.92	26.75	26.55	26.32
9.950	26.09	25.84	25.58	25.26	24.93
10.200	24.61	24.34	24.10	23.89	23.71
10.450	23.56	23.41	23.32	23.35	23.45
10.700	23.48	23.42	23.31	23.17	23.01

Brunswick Site

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

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
10.950	22.85	22.68	22.51	22.33	22.15
11.200	21.97	21.80	21.61	21.43	21.25
11.450	21.07	20.88	20.68	20.42	20.15
11.700	19.91	19.72	19.57	19.45	19.35
11.950	19.26	19.20	19.16	19.14	19.13
12.200	19.14	19.19	19.26	19.35	19.45
12.450	19.57	19.71	19.78	19.63	19.34
12.700	19.07	18.90	18.77	18.69	18.62
12.950	18.58	18.54	18.57	18.72	18.93
13.200	19.04	19.02	18.94	18.84	18.71
13.450	18.58	18.45	18.34	18.24	18.14
13.700	18.04	17.95	17.89	17.84	17.79
13.950	17.74	17.71	17.70	17.72	17.75
14.200	17.77	17.76	17.75	17.72	17.70
14.450	17.67	17.64	17.61	17.58	17.55
14.700	17.52	17.48	17.44	17.40	17.37
14.950	17.34	17.32	17.30	17.27	17.23
15.200	17.20	17.18	17.14	17.10	17.06
15.450	17.02	16.99	16.96	16.92	16.89
15.700	16.86	16.83	16.81	16.78	16.75
15.950	16.71	16.67	16.63	16.59	16.56
16.200	16.53	16.49	16.46	16.43	16.39
16.450	16.36	16.32	16.29	16.26	16.22
16.700	16.19	16.15	16.12	16.08	16.05
16.950	16.02	15.98	15.94	15.91	15.88
17.200	15.84	15.80	15.76	15.71	15.68
17.450	15.65	15.62	15.59	15.56	15.52
17.700	15.49	15.46	15.42	15.38	15.33
17.950	15.29	15.25	15.22	15.18	15.14
18.200	15.10	15.07	15.05	15.02	14.98
18.450	14.94	14.90	14.85	14.81	14.78
18.700	14.74	14.70	14.67	14.63	14.59
18.950	14.55	14.52	14.49	14.45	14.41
19.200	14.37	14.34	14.30	14.26	14.22
19.450	14.19	14.15	14.11	14.07	14.04
19.700	14.00	13.96	13.91	13.86	13.82
19.950	13.79	13.76	13.73	13.70	13.66
20.200	13.62	13.59	13.55	13.50	13.45
20.450	13.41	13.37	13.33	13.29	13.25
20.700	13.21	13.18	13.15	13.12	13.09
20.950	13.04	12.99	12.95	12.91	12.87
21.200	12.83	12.79	12.75	12.72	12.68

Brunswick Site

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

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
21.450	12.63	12.60	12.56	12.52	12.48
21.700	12.44	12.40	12.36	12.32	12.28
21.950	12.25	12.21	12.17	12.13	12.09
22.200	12.05	12.01	11.96	11.91	11.87
22.450	11.83	11.80	11.77	11.73	11.69
22.700	11.65	11.62	11.58	11.53	11.48
22.950	11.43	11.39	11.35	11.31	11.27
23.200	11.23	11.20	11.17	11.14	11.10
23.450	11.05	11.00	10.96	10.91	10.88
23.700	10.83	10.79	10.75	10.71	10.67
23.950	10.63	10.61	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
 Label: CM-1

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Storm Event	Brunswick NC 25-yr
Return Event	25 years
Duration	24.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	98.600 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	162.74 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	162.57 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	82.100
Area (User Defined)	98.600 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.4 in
Runoff Volume (Pervious)	52.864 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	52.660 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	558.59 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

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

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Storm Event	Brunswick NC 25-yr
Return Event	25 years
Duration	24.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	98.600 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
2.000	0.00	0.00	0.03	0.12	0.29
2.250	0.54	0.82	1.13	1.44	1.75
2.500	2.06	2.37	2.67	2.96	3.24
2.750	3.52	3.80	4.07	4.34	4.60
3.000	4.86	5.11	5.34	5.55	5.77
3.250	6.00	6.24	6.48	6.75	7.02
3.500	7.30	7.60	7.95	8.33	8.71
3.750	9.07	9.41	9.74	10.07	10.40
4.000	10.72	11.02	11.29	11.53	11.79
4.250	12.06	12.36	12.67	12.99	13.33
4.500	13.67	14.02	14.38	14.74	15.11
4.750	15.49	15.89	16.29	16.73	17.17
5.000	17.62	18.09	18.62	19.17	19.72
5.250	20.24	20.76	21.24	21.72	22.19
5.500	22.65	23.07	23.40	23.68	24.02
5.750	24.43	24.91	25.43	25.98	26.56
6.000	27.21	27.96	28.97	30.07	31.09
6.250	31.96	32.72	33.39	34.00	34.54
6.500	35.02	35.27	35.04	34.59	34.33
6.750	34.42	34.79	35.35	36.10	36.97
7.000	38.02	39.20	40.56	42.03	43.69
7.250	45.45	47.44	49.53	51.83	54.24
7.500	57.08	63.86	81.21	103.97	123.97
7.750	138.13	148.31	155.41	160.02	162.40
8.000	162.57	158.48	145.72	129.01	113.91
8.250	102.72	93.75	86.46	80.13	74.85
8.500	70.21	66.90	65.54	65.42	65.06
8.750	64.06	62.62	61.08	59.40	57.75
9.000	56.11	54.54	53.01	51.56	50.14
9.250	48.83	47.54	46.34	45.20	44.15
9.500	43.17	42.44	42.21	42.30	42.29
9.750	42.11	41.82	41.47	41.09	40.70

Brunswick Site

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

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
10.000	40.28	39.85	39.32	38.78	38.26
10.250	37.82	37.42	37.07	36.77	36.52
10.500	36.27	36.11	36.14	36.26	36.29
10.750	36.19	35.99	35.77	35.50	35.23
11.000	34.95	34.66	34.37	34.09	33.80
11.250	33.51	33.21	32.92	32.62	32.33
11.500	32.04	31.71	31.30	30.87	30.49
11.750	30.19	29.95	29.76	29.59	29.45
12.000	29.34	29.27	29.22	29.20	29.21
12.250	29.27	29.37	29.50	29.65	29.81
12.500	30.02	30.11	29.87	29.42	29.01
12.750	28.73	28.53	28.39	28.29	28.21
13.000	28.15	28.17	28.40	28.71	28.86
13.250	28.83	28.70	28.54	28.34	28.13
13.500	27.92	27.75	27.58	27.43	27.27
13.750	27.13	27.03	26.95	26.86	26.78
14.000	26.73	26.71	26.73	26.77	26.79
14.250	26.78	26.75	26.70	26.66	26.61
14.500	26.56	26.50	26.45	26.41	26.35
14.750	26.29	26.22	26.16	26.10	26.06
15.000	26.02	25.98	25.92	25.87	25.82
15.250	25.77	25.71	25.65	25.58	25.52
15.500	25.46	25.41	25.35	25.29	25.24
15.750	25.20	25.16	25.11	25.06	25.00
16.000	24.93	24.87	24.81	24.76	24.70
16.250	24.64	24.59	24.54	24.48	24.42
16.500	24.37	24.32	24.26	24.20	24.14
16.750	24.10	24.04	23.98	23.92	23.87
17.000	23.81	23.75	23.70	23.65	23.59
17.250	23.53	23.46	23.39	23.33	23.28
17.500	23.24	23.19	23.14	23.08	23.03
17.750	22.97	22.92	22.85	22.78	22.71
18.000	22.65	22.60	22.54	22.48	22.42
18.250	22.37	22.33	22.29	22.23	22.17
18.500	22.10	22.03	21.97	21.91	21.85
18.750	21.79	21.74	21.68	21.62	21.56
19.000	21.50	21.45	21.39	21.33	21.27
19.250	21.22	21.16	21.10	21.04	20.99
19.500	20.93	20.87	20.81	20.76	20.70
19.750	20.63	20.56	20.49	20.43	20.38
20.000	20.33	20.29	20.23	20.17	20.11
20.250	20.06	20.00	19.93	19.86	19.79

Brunswick Site

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

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

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

Time (hours)	Flow (ft ³ /s)				
20.500	19.73	19.67	19.61	19.55	19.49
20.750	19.44	19.40	19.35	19.29	19.23
21.000	19.16	19.09	19.02	18.97	18.91
21.250	18.84	18.78	18.73	18.67	18.61
21.500	18.55	18.50	18.43	18.37	18.31
21.750	18.26	18.20	18.13	18.08	18.02
22.000	17.96	17.90	17.84	17.78	17.72
22.250	17.65	17.58	17.51	17.45	17.40
22.500	17.35	17.30	17.24	17.18	17.12
22.750	17.07	17.01	16.94	16.87	16.79
23.000	16.73	16.67	16.61	16.55	16.49
23.250	16.44	16.39	16.35	16.29	16.22
23.500	16.15	16.08	16.01	15.96	15.89
23.750	15.83	15.77	15.72	15.65	15.59
24.000	15.55	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Storm Event	Brunswick NC 25-yr
Return Event	25 years
Duration	24.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	89.400 acres
Computational Time Increment	0.027 hours
Time to Peak (Computed)	8.000 hours
Flow (Peak, Computed)	136.61 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	136.61 ft ³ /s
Drainage Area	
SCS CN (Composite)	78.600
Area (User Defined)	89.400 acres
Maximum Retention (Pervious)	2.7 in
Maximum Retention (Pervious, 20 percent)	0.5 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.0 in
Runoff Volume (Pervious)	44.784 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	44.603 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	506.47 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

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

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Storm Event	Brunswick NC 25-yr
Return Event	25 years
Duration	24.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	89.400 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft ³ /s)
2.400	0.00	0.00	0.02	0.10	0.24
2.650	0.42	0.63	0.86	1.08	1.31
2.900	1.54	1.76	1.98	2.20	2.40
3.150	2.60	2.80	3.00	3.20	3.41
3.400	3.63	3.85	4.08	4.32	4.59
3.650	4.88	5.17	5.46	5.73	6.00
3.900	6.27	6.55	6.81	7.07	7.30
4.150	7.52	7.75	7.99	8.24	8.50
4.400	8.78	9.06	9.34	9.64	9.94
4.650	10.24	10.55	10.87	11.20	11.54
4.900	11.90	12.27	12.65	13.04	13.48
5.150	13.93	14.39	14.82	15.25	15.67
5.400	16.08	16.48	16.88	17.25	17.55
5.650	17.81	18.12	18.49	18.90	19.35
5.900	19.82	20.32	20.86	21.50	22.33
6.150	23.24	24.09	24.82	25.48	26.07
6.400	26.61	27.09	27.53	27.78	27.66
6.650	27.36	27.21	27.33	27.68	28.18
6.900	28.83	29.58	30.47	31.48	32.62
7.150	33.86	35.26	36.75	38.43	40.20
7.400	42.14	44.18	46.58	52.24	66.62
7.650	85.54	102.29	114.33	123.15	129.45
7.900	133.70	136.09	136.61	133.51	123.01
8.150	109.11	96.51	87.16	79.66	73.56
8.400	68.25	63.82	59.91	57.13	56.02
8.650	55.96	55.69	54.87	53.68	52.38
8.900	50.97	49.59	48.20	46.88	45.58
9.150	44.36	43.16	42.05	40.95	39.94
9.400	38.97	38.08	37.25	36.63	36.44
9.650	36.53	36.54	36.40	36.15	35.87
9.900	35.54	35.22	34.87	34.50	34.05
10.150	33.59	33.16	32.78	32.44	32.15

Brunswick Site

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

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

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

Time (hours)	Flow (ft ³ /s)				
10.400	31.90	31.69	31.48	31.35	31.38
10.650	31.49	31.53	31.44	31.28	31.09
10.900	30.87	30.64	30.40	30.16	29.91
11.150	29.67	29.42	29.18	28.92	28.68
11.400	28.42	28.17	27.92	27.64	27.29
11.650	26.92	26.59	26.33	26.13	25.97
11.900	25.82	25.70	25.61	25.56	25.52
12.150	25.50	25.52	25.57	25.66	25.78
12.400	25.91	26.06	26.25	26.33	26.12
12.650	25.73	25.37	25.14	24.97	24.84
12.900	24.76	24.69	24.64	24.67	24.87
13.150	25.14	25.28	25.25	25.15	25.01
13.400	24.83	24.65	24.48	24.33	24.18
13.650	24.05	23.91	23.80	23.71	23.64
13.900	23.57	23.50	23.45	23.44	23.46
14.150	23.50	23.52	23.51	23.48	23.45
14.400	23.41	23.38	23.33	23.28	23.24
14.650	23.20	23.16	23.11	23.05	22.99
14.900	22.95	22.91	22.88	22.84	22.80
15.150	22.75	22.71	22.67	22.62	22.57
15.400	22.51	22.46	22.41	22.37	22.32
15.650	22.27	22.22	22.19	22.15	22.12
15.900	22.07	22.02	21.96	21.91	21.86
16.150	21.81	21.76	21.71	21.67	21.63
16.400	21.58	21.53	21.48	21.44	21.39
16.650	21.34	21.29	21.25	21.20	21.15
16.900	21.10	21.06	21.01	20.96	20.91
17.150	20.87	20.82	20.76	20.70	20.64
17.400	20.59	20.55	20.51	20.48	20.43
17.650	20.38	20.33	20.29	20.24	20.18
17.900	20.12	20.06	20.01	19.97	19.91
18.150	19.86	19.81	19.77	19.73	19.70
18.400	19.65	19.59	19.53	19.47	19.42
18.650	19.37	19.32	19.27	19.22	19.18
18.900	19.12	19.07	19.02	18.98	18.92
19.150	18.87	18.82	18.78	18.72	18.67
19.400	18.62	18.58	18.52	18.47	18.42
19.650	18.38	18.32	18.26	18.20	18.14
19.900	18.09	18.04	18.00	17.96	17.91
20.150	17.86	17.81	17.77	17.71	17.66
20.400	17.59	17.53	17.48	17.43	17.37
20.650	17.32	17.27	17.23	17.19	17.15

Brunswick Site

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

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

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

Time (hours)	Flow (ft ³ /s)				
20.900	17.10	17.04	16.98	16.92	16.86
21.150	16.81	16.76	16.70	16.65	16.61
21.400	16.55	16.50	16.45	16.40	16.34
21.650	16.29	16.24	16.19	16.14	16.08
21.900	16.03	15.98	15.93	15.87	15.82
22.150	15.78	15.72	15.66	15.60	15.53
22.400	15.48	15.43	15.39	15.35	15.30
22.650	15.25	15.20	15.15	15.10	15.04
22.900	14.97	14.91	14.85	14.80	14.75
23.150	14.69	14.64	14.59	14.55	14.51
23.400	14.46	14.40	14.34	14.27	14.22
23.650	14.17	14.11	14.06	14.00	13.96
23.900	13.90	13.85	13.81	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Storm Event	Brunswick NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	98.600 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	188.66 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	7.950 hours
Flow (Peak Interpolated Output)	188.38 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	82.100
Area (User Defined)	98.600 acres
Maximum Retention (Pervious)	2.2 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.4 in
Runoff Volume (Pervious)	61.143 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	60.912 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	558.59 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

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

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Storm Event	Brunswick NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	98.600 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft ³ /s)
1.850	0.00	0.01	0.08	0.25	0.51
2.100	0.84	1.20	1.57	1.95	2.34
2.350	2.73	3.11	3.48	3.85	4.22
2.600	4.56	4.89	5.21	5.53	5.85
2.850	6.16	6.47	6.77	7.07	7.35
3.100	7.60	7.84	8.08	8.34	8.61
3.350	8.90	9.20	9.52	9.85	10.20
3.600	10.62	11.07	11.53	11.96	12.36
3.850	12.74	13.13	13.52	13.89	14.23
4.100	14.53	14.81	15.10	15.41	15.75
4.350	16.10	16.47	16.86	17.25	17.65
4.600	18.07	18.49	18.92	19.35	19.81
4.850	20.29	20.79	21.30	21.82	22.37
5.100	22.99	23.63	24.27	24.88	25.47
5.350	26.03	26.58	27.11	27.64	28.11
5.600	28.48	28.78	29.15	29.62	30.17
5.850	30.76	31.39	32.05	32.79	33.66
6.100	34.84	36.13	37.32	38.31	39.18
6.350	39.95	40.64	41.24	41.77	42.03
6.600	41.72	41.14	40.80	40.87	41.28
6.850	41.91	42.76	43.76	44.97	46.34
7.100	47.90	49.59	51.51	53.55	55.85
7.350	58.27	60.92	63.70	66.98	74.87
7.600	95.09	121.58	144.77	161.09	172.73
7.850	180.75	185.86	188.38	188.34	183.40
8.100	168.48	149.05	131.51	118.50	108.09
8.350	99.63	92.29	86.18	80.80	76.96
8.600	75.38	75.21	74.77	73.60	71.93
8.850	70.14	68.19	66.29	64.38	62.58
9.100	60.80	59.13	57.49	55.97	54.48
9.350	53.11	51.79	50.58	49.45	48.61
9.600	48.33	48.43	48.41	48.20	47.86

Brunswick Site

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

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
9.850	47.46	47.01	46.55	46.07	45.57
10.100	44.96	44.34	43.74	43.23	42.77
10.350	42.37	42.02	41.73	41.44	41.25
10.600	41.28	41.42	41.45	41.33	41.10
10.850	40.83	40.53	40.22	39.89	39.56
11.100	39.23	38.90	38.56	38.23	37.89
11.350	37.56	37.21	36.88	36.54	36.17
11.600	35.70	35.20	34.76	34.42	34.15
11.850	33.92	33.73	33.56	33.44	33.36
12.100	33.30	33.27	33.28	33.35	33.46
12.350	33.60	33.77	33.96	34.19	34.30
12.600	34.02	33.50	33.03	32.72	32.49
12.850	32.32	32.20	32.12	32.04	32.07
13.100	32.33	32.68	32.85	32.81	32.66
13.350	32.48	32.25	32.00	31.77	31.57
13.600	31.38	31.20	31.02	30.86	30.74
13.850	30.65	30.55	30.46	30.39	30.37
14.100	30.40	30.44	30.46	30.45	30.41
14.350	30.36	30.30	30.25	30.19	30.13
14.600	30.07	30.01	29.95	29.88	29.80
14.850	29.73	29.66	29.61	29.56	29.51
15.100	29.45	29.39	29.33	29.28	29.21
15.350	29.14	29.06	28.98	28.92	28.86
15.600	28.79	28.73	28.66	28.61	28.57
15.850	28.52	28.46	28.39	28.31	28.23
16.100	28.17	28.11	28.04	27.97	27.91
16.350	27.85	27.79	27.72	27.66	27.60
16.600	27.53	27.46	27.40	27.34	27.28
16.850	27.21	27.15	27.09	27.02	26.95
17.100	26.89	26.83	26.76	26.69	26.61
17.350	26.53	26.46	26.41	26.36	26.31
17.600	26.24	26.18	26.11	26.06	25.99
17.850	25.91	25.83	25.76	25.69	25.63
18.100	25.56	25.49	25.42	25.37	25.32
18.350	25.27	25.20	25.13	25.05	24.97
18.600	24.90	24.84	24.77	24.70	24.64
18.850	24.58	24.51	24.44	24.37	24.31
19.100	24.25	24.18	24.11	24.05	23.98
19.350	23.91	23.85	23.79	23.72	23.65
19.600	23.58	23.52	23.45	23.38	23.29
19.850	23.21	23.14	23.09	23.04	22.98
20.100	22.92	22.85	22.79	22.73	22.66

Brunswick Site

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

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
20.350	22.58	22.50	22.42	22.35	22.28
20.600	22.21	22.14	22.08	22.02	21.97
20.850	21.92	21.85	21.78	21.69	21.61
21.100	21.54	21.48	21.41	21.34	21.27
21.350	21.21	21.14	21.07	21.00	20.94
21.600	20.87	20.80	20.73	20.67	20.60
21.850	20.53	20.46	20.40	20.33	20.26
22.100	20.19	20.13	20.06	19.99	19.90
22.350	19.82	19.75	19.69	19.64	19.58
22.600	19.52	19.45	19.38	19.32	19.25
22.850	19.17	19.09	19.01	18.94	18.87
23.100	18.80	18.73	18.66	18.60	18.55
23.350	18.50	18.43	18.36	18.27	18.19
23.600	18.12	18.06	17.99	17.91	17.84
23.850	17.78	17.71	17.64	17.60	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Storm Event	Brunswick NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	89.400 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	159.95 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	159.89 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	78.600
Area (User Defined)	89.400 acres
Maximum Retention (Pervious)	2.7 in
Maximum Retention (Pervious, 20 percent)	0.5 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.0 in
Runoff Volume (Pervious)	52.151 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	51.946 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	506.47 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

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

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Storm Event	Brunswick NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	89.400 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
2.200	0.00	0.01	0.05	0.16	0.36
2.450	0.61	0.88	1.17	1.45	1.73
2.700	2.01	2.29	2.56	2.83	3.10
2.950	3.36	3.62	3.87	4.10	4.32
3.200	4.54	4.77	5.01	5.25	5.51
3.450	5.78	6.05	6.33	6.66	7.02
3.700	7.38	7.73	8.06	8.38	8.70
3.950	9.02	9.34	9.63	9.90	10.15
4.200	10.41	10.69	10.98	11.28	11.61
4.450	11.93	12.27	12.61	12.97	13.32
4.700	13.69	14.06	14.45	14.85	15.28
4.950	15.71	16.15	16.62	17.13	17.67
5.200	18.21	18.72	19.22	19.71	20.18
5.450	20.65	21.11	21.53	21.87	22.15
5.700	22.50	22.92	23.40	23.91	24.46
5.950	25.04	25.68	26.42	27.41	28.48
6.200	29.48	30.33	31.09	31.77	32.38
6.450	32.93	33.42	33.69	33.50	33.10
6.700	32.89	33.00	33.38	33.95	34.69
6.950	35.56	36.60	37.77	39.11	40.56
7.200	42.19	43.93	45.89	47.96	50.22
7.450	52.60	55.40	62.05	79.01	101.28
7.700	120.92	134.93	145.08	152.25	156.98
7.950	159.53	159.89	156.05	143.62	127.26
8.200	112.45	101.47	92.67	85.51	79.29
8.450	74.10	69.53	66.28	64.96	64.86
8.700	64.53	63.55	62.15	60.63	58.98
8.950	57.36	55.74	54.20	52.68	51.26
9.200	49.85	48.56	47.28	46.10	44.98
9.450	43.94	42.97	42.25	42.03	42.12
9.700	42.12	41.95	41.66	41.32	40.95
9.950	40.56	40.15	39.72	39.20	38.67

Brunswick Site

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

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
10.200	38.16	37.72	37.32	36.99	36.69
10.450	36.44	36.20	36.04	36.07	36.20
10.700	36.24	36.13	35.94	35.72	35.46
10.950	35.19	34.91	34.63	34.35	34.07
11.200	33.77	33.49	33.20	32.91	32.61
11.450	32.33	32.03	31.71	31.30	30.88
11.700	30.50	30.20	29.96	29.77	29.60
11.950	29.46	29.36	29.29	29.24	29.22
12.200	29.24	29.30	29.40	29.53	29.68
12.450	29.85	30.06	30.15	29.91	29.46
12.700	29.05	28.78	28.58	28.44	28.34
12.950	28.26	28.20	28.23	28.46	28.77
13.200	28.92	28.89	28.77	28.61	28.40
13.450	28.19	27.99	27.82	27.65	27.50
13.700	27.34	27.21	27.10	27.02	26.94
13.950	26.86	26.81	26.79	26.81	26.85
14.200	26.87	26.86	26.83	26.79	26.74
14.450	26.70	26.65	26.60	26.55	26.50
14.700	26.45	26.39	26.32	26.26	26.20
14.950	26.16	26.12	26.08	26.03	25.97
15.200	25.92	25.88	25.82	25.76	25.69
15.450	25.63	25.57	25.52	25.46	25.41
15.700	25.35	25.31	25.27	25.23	25.18
15.950	25.12	25.05	24.98	24.93	24.88
16.200	24.82	24.76	24.71	24.66	24.60
16.450	24.54	24.49	24.44	24.38	24.32
16.700	24.27	24.22	24.16	24.10	24.05
16.950	24.00	23.94	23.88	23.83	23.78
17.200	23.72	23.66	23.59	23.52	23.46
17.450	23.41	23.37	23.33	23.27	23.21
17.700	23.16	23.11	23.05	22.98	22.91
17.950	22.85	22.79	22.73	22.67	22.61
18.200	22.56	22.51	22.47	22.42	22.37
18.450	22.31	22.23	22.17	22.11	22.05
18.700	21.99	21.93	21.87	21.82	21.76
18.950	21.70	21.64	21.59	21.53	21.47
19.200	21.41	21.36	21.30	21.24	21.18
19.450	21.13	21.07	21.01	20.95	20.90
19.700	20.84	20.77	20.70	20.63	20.57
19.950	20.52	20.47	20.43	20.37	20.31
20.200	20.25	20.20	20.14	20.08	20.00
20.450	19.93	19.87	19.81	19.75	19.69

Brunswick Site

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

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
20.700	19.63	19.58	19.54	19.49	19.44
20.950	19.37	19.30	19.23	19.17	19.11
21.200	19.05	18.98	18.93	18.87	18.81
21.450	18.75	18.69	18.64	18.57	18.51
21.700	18.45	18.40	18.34	18.27	18.21
21.950	18.16	18.10	18.04	17.98	17.92
22.200	17.86	17.79	17.72	17.65	17.58
22.450	17.53	17.49	17.44	17.38	17.32
22.700	17.26	17.21	17.15	17.08	17.00
22.950	16.93	16.87	16.81	16.75	16.68
23.200	16.62	16.57	16.53	16.48	16.42
23.450	16.35	16.28	16.21	16.15	16.09
23.700	16.03	15.96	15.90	15.85	15.78
23.950	15.72	15.68	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Storm Event	Brunswick NC 2-yr
Return Event	2 years
Duration	24.000 hours
Depth	4.7 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	28.100 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	24.28 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	24.28 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	87.740
Area (User Defined)	28.100 acres
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.4 in
Runoff Volume (Pervious)	7.932 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	7.900 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

SCS Unit Hydrograph Parameters

Unit peak, q_p	159.19 ft ³ /s
Unit peak time, T_p	0.133 hours
Unit receding limb, T_r	0.533 hours
Total unit time, T_b	0.667 hours

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Storm Event	Brunswick NC 2-yr
Return Event	2 years
Duration	24.000 hours
Depth	4.7 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	28.100 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
2.300	0.00	0.00	0.01	0.03	0.07
2.550	0.11	0.15	0.19	0.23	0.27
2.800	0.31	0.35	0.39	0.43	0.47
3.050	0.51	0.55	0.58	0.62	0.65
3.300	0.69	0.72	0.76	0.80	0.84
3.550	0.89	0.94	0.99	1.04	1.10
3.800	1.14	1.19	1.24	1.29	1.34
4.050	1.38	1.42	1.46	1.50	1.54
4.300	1.59	1.64	1.68	1.73	1.79
4.550	1.84	1.89	1.95	2.00	2.06
4.800	2.12	2.18	2.24	2.31	2.37
5.050	2.44	2.52	2.60	2.68	2.76
5.300	2.84	2.91	2.99	3.06	3.13
5.550	3.19	3.24	3.29	3.34	3.41
5.800	3.48	3.56	3.64	3.73	3.83
6.050	3.94	4.09	4.25	4.40	4.53
6.300	4.65	4.75	4.84	4.93	5.01
6.550	5.05	5.02	4.96	4.93	4.95
6.800	5.01	5.10	5.21	5.35	5.50
7.050	5.68	5.88	6.10	6.35	6.62
7.300	6.91	7.23	7.57	7.94	8.36
7.550	9.37	11.94	15.31	18.29	20.42
7.800	21.97	23.07	23.81	24.21	24.28
8.050	23.70	21.83	19.35	17.10	15.44
8.300	14.10	13.02	12.07	11.28	10.59
8.550	10.10	9.90	9.88	9.83	9.69
8.800	9.47	9.24	8.99	8.75	8.50
9.050	8.27	8.04	7.82	7.61	7.41
9.300	7.22	7.04	6.86	6.71	6.56
9.550	6.45	6.42	6.43	6.43	6.41
9.800	6.36	6.31	6.25	6.20	6.13
10.050	6.07	5.99	5.91	5.83	5.76
10.300	5.70	5.65	5.61	5.57	5.53

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
10.550	5.51	5.51	5.53	5.54	5.52
10.800	5.50	5.46	5.42	5.38	5.34
11.050	5.30	5.25	5.21	5.17	5.12
11.300	5.08	5.03	4.99	4.94	4.90
11.550	4.85	4.79	4.72	4.67	4.62
11.800	4.58	4.56	4.53	4.51	4.49
12.050	4.48	4.47	4.47	4.47	4.48
12.300	4.50	4.52	4.54	4.57	4.60
12.550	4.62	4.58	4.51	4.45	4.41
12.800	4.38	4.35	4.34	4.33	4.32
13.050	4.32	4.36	4.41	4.43	4.42
13.300	4.40	4.38	4.35	4.32	4.29
13.550	4.26	4.24	4.21	4.19	4.17
13.800	4.15	4.14	4.13	4.11	4.11
14.050	4.10	4.11	4.11	4.12	4.12
14.300	4.11	4.10	4.10	4.09	4.08
14.550	4.08	4.07	4.06	4.05	4.04
14.800	4.03	4.02	4.02	4.01	4.00
15.050	4.00	3.99	3.98	3.97	3.97
15.300	3.96	3.95	3.94	3.93	3.92
15.550	3.91	3.90	3.89	3.89	3.88
15.800	3.87	3.87	3.86	3.85	3.84
16.050	3.83	3.82	3.81	3.81	3.80
16.300	3.79	3.78	3.77	3.76	3.75
16.550	3.75	3.74	3.73	3.72	3.71
16.800	3.71	3.70	3.69	3.68	3.67
17.050	3.66	3.65	3.65	3.64	3.63
17.300	3.62	3.61	3.60	3.59	3.58
17.550	3.58	3.57	3.56	3.55	3.54
17.800	3.54	3.53	3.51	3.50	3.50
18.050	3.49	3.48	3.47	3.46	3.45
18.300	3.45	3.44	3.43	3.42	3.41
18.550	3.40	3.39	3.38	3.37	3.36
18.800	3.36	3.35	3.34	3.33	3.32
19.050	3.31	3.30	3.29	3.29	3.28
19.300	3.27	3.26	3.25	3.24	3.23
19.550	3.22	3.22	3.21	3.20	3.19
19.800	3.18	3.17	3.16	3.15	3.14
20.050	3.14	3.13	3.12	3.11	3.10
20.300	3.09	3.08	3.07	3.06	3.05
20.550	3.04	3.03	3.02	3.01	3.01
20.800	3.00	2.99	2.98	2.97	2.96

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)

Label: CM-2

Return Event: 2 years

Storm Event: Brunswick NC 2-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
21.050	2.95	2.94	2.93	2.92	2.91
21.300	2.91	2.90	2.89	2.88	2.87
21.550	2.86	2.85	2.84	2.83	2.82
21.800	2.82	2.81	2.80	2.79	2.78
22.050	2.77	2.76	2.75	2.74	2.73
22.300	2.72	2.71	2.70	2.69	2.68
22.550	2.68	2.67	2.66	2.65	2.64
22.800	2.63	2.62	2.61	2.60	2.59
23.050	2.58	2.57	2.56	2.55	2.54
23.300	2.54	2.53	2.52	2.51	2.50
23.550	2.49	2.48	2.47	2.46	2.45
23.800	2.44	2.43	2.42	2.41	2.41

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Storm Event	Brunswick NC 2-yr
Return Event	2 years
Duration	24.000 hours
Depth	4.7 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	34.300 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	8.000 hours
Flow (Peak, Computed)	25.20 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	25.20 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	83.300
Area (User Defined)	34.300 acres
Maximum Retention (Pervious)	2.0 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.0 in
Runoff Volume (Pervious)	8.457 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	8.421 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

SCS Unit Hydrograph Parameters	
Unit peak, qp	194.32 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Storm Event	Brunswick NC 2-yr
Return Event	2 years
Duration	24.000 hours
Depth	4.7 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	34.300 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
3.100	0.00	0.00	0.01	0.03	0.05
3.350	0.09	0.12	0.16	0.20	0.24
3.600	0.28	0.33	0.37	0.42	0.47
3.850	0.51	0.56	0.61	0.66	0.70
4.100	0.75	0.79	0.84	0.88	0.93
4.350	0.98	1.03	1.08	1.13	1.19
4.600	1.24	1.30	1.35	1.41	1.47
4.850	1.53	1.60	1.66	1.73	1.80
5.100	1.88	1.96	2.04	2.12	2.20
5.350	2.27	2.35	2.43	2.50	2.57
5.600	2.63	2.69	2.75	2.83	2.91
5.850	2.99	3.08	3.17	3.27	3.39
6.100	3.54	3.70	3.86	3.99	4.11
6.350	4.23	4.33	4.43	4.52	4.58
6.600	4.58	4.55	4.54	4.57	4.65
6.850	4.75	4.87	5.01	5.18	5.37
7.100	5.58	5.81	6.07	6.35	6.66
7.350	6.99	7.35	7.73	8.18	9.20
7.600	11.79	15.22	18.30	20.56	22.26
7.850	23.53	24.43	24.99	25.20	24.74
8.100	22.87	20.35	18.05	16.35	14.98
8.350	13.86	12.88	12.07	11.35	10.83
8.600	10.64	10.64	10.60	10.46	10.24
8.850	10.01	9.75	9.49	9.23	8.99
9.100	8.75	8.52	8.29	8.09	7.88
9.350	7.69	7.51	7.34	7.19	7.07
9.600	7.04	7.06	7.07	7.04	7.00
9.850	6.95	6.89	6.83	6.77	6.70
10.100	6.61	6.53	6.45	6.38	6.31
10.350	6.26	6.21	6.17	6.14	6.11
10.600	6.12	6.15	6.16	6.14	6.11
10.850	6.08	6.04	5.99	5.95	5.90
11.100	5.86	5.81	5.76	5.72	5.67

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

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

Time (hours)	Flow (ft ³ /s)				
11.350	5.62	5.58	5.53	5.48	5.43
11.600	5.36	5.29	5.23	5.18	5.14
11.850	5.11	5.08	5.06	5.04	5.03
12.100	5.03	5.02	5.03	5.04	5.06
12.350	5.08	5.11	5.14	5.18	5.20
12.600	5.16	5.08	5.01	4.97	4.94
12.850	4.91	4.90	4.89	4.88	4.88
13.100	4.92	4.98	5.01	5.00	4.98
13.350	4.96	4.92	4.89	4.85	4.82
13.600	4.80	4.77	4.75	4.72	4.71
13.850	4.69	4.68	4.67	4.66	4.66
14.100	4.66	4.67	4.68	4.68	4.67
14.350	4.67	4.66	4.65	4.64	4.64
14.600	4.63	4.62	4.61	4.60	4.59
14.850	4.58	4.57	4.57	4.56	4.56
15.100	4.55	4.54	4.53	4.52	4.52
15.350	4.51	4.50	4.48	4.48	4.47
15.600	4.46	4.45	4.44	4.43	4.43
15.850	4.42	4.41	4.40	4.39	4.38
16.100	4.37	4.37	4.36	4.35	4.34
16.350	4.33	4.32	4.31	4.30	4.30
16.600	4.29	4.28	4.27	4.26	4.25
16.850	4.24	4.23	4.22	4.21	4.20
17.100	4.20	4.19	4.18	4.17	4.16
17.350	4.14	4.14	4.13	4.12	4.11
17.600	4.10	4.09	4.09	4.08	4.07
17.850	4.06	4.05	4.03	4.02	4.02
18.100	4.01	3.99	3.99	3.98	3.97
18.350	3.96	3.95	3.94	3.93	3.92
18.600	3.91	3.90	3.89	3.88	3.87
18.850	3.86	3.85	3.84	3.83	3.82
19.100	3.81	3.80	3.79	3.79	3.78
19.350	3.76	3.76	3.75	3.74	3.73
19.600	3.72	3.71	3.70	3.69	3.67
19.850	3.66	3.65	3.64	3.63	3.63
20.100	3.62	3.61	3.60	3.59	3.58
20.350	3.57	3.55	3.54	3.53	3.52
20.600	3.51	3.50	3.49	3.48	3.47
20.850	3.47	3.46	3.45	3.43	3.42
21.100	3.41	3.40	3.39	3.38	3.37
21.350	3.36	3.35	3.34	3.33	3.32
21.600	3.31	3.30	3.29	3.28	3.27

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

Time (hours)	Flow (ft ³ /s)				
21.850	3.26	3.25	3.24	3.23	3.22
22.100	3.21	3.20	3.19	3.17	3.16
22.350	3.15	3.14	3.13	3.12	3.11
22.600	3.10	3.09	3.08	3.07	3.06
22.850	3.05	3.04	3.02	3.01	3.00
23.100	2.99	2.98	2.97	2.96	2.95
23.350	2.94	2.93	2.92	2.91	2.90
23.600	2.89	2.88	2.86	2.85	2.84
23.850	2.83	2.82	2.81	2.80	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
 Label: CM-2

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Storm Event	Brunswick NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	28.100 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	38.83 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	7.950 hours
Flow (Peak Interpolated Output)	38.79 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	87.740
Area (User Defined)	28.100 acres
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.4 in
Runoff Volume (Pervious)	12.574 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	12.528 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	159.19 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Storm Event	Brunswick NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	28.100 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.700	0.00	0.00	0.01	0.04	0.10
1.950	0.16	0.23	0.31	0.39	0.47
2.200	0.56	0.64	0.72	0.80	0.88
2.450	0.96	1.04	1.11	1.18	1.25
2.700	1.32	1.38	1.45	1.51	1.57
2.950	1.63	1.69	1.75	1.80	1.85
3.200	1.89	1.95	2.00	2.06	2.12
3.450	2.19	2.26	2.33	2.42	2.51
3.700	2.61	2.70	2.78	2.86	2.94
3.950	3.02	3.10	3.17	3.23	3.28
4.200	3.34	3.40	3.47	3.54	3.62
4.450	3.70	3.78	3.86	3.95	4.03
4.700	4.12	4.21	4.30	4.40	4.50
4.950	4.61	4.72	4.83	4.96	5.09
5.200	5.22	5.35	5.47	5.58	5.69
5.450	5.80	5.91	6.01	6.08	6.13
5.700	6.21	6.30	6.41	6.53	6.66
5.950	6.80	6.95	7.13	7.37	7.64
6.200	7.88	8.09	8.26	8.42	8.56
6.450	8.68	8.78	8.83	8.76	8.63
6.700	8.56	8.56	8.64	8.77	8.95
6.950	9.15	9.40	9.68	10.00	10.34
7.200	10.74	11.16	11.63	12.12	12.67
7.450	13.24	13.91	15.54	19.72	25.19
7.700	29.96	33.30	35.67	37.29	38.31
7.950	38.79	38.75	37.70	34.61	30.60
8.200	26.98	24.30	22.16	20.41	18.90
8.450	17.65	16.54	15.75	15.42	15.38
8.700	15.29	15.05	14.70	14.33	13.93
8.950	13.54	13.15	12.78	12.42	12.07
9.200	11.74	11.43	11.12	10.84	10.57
9.450	10.32	10.09	9.91	9.86	9.88

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
9.700	9.87	9.83	9.76	9.67	9.58
9.950	9.49	9.39	9.29	9.16	9.03
10.200	8.91	8.81	8.71	8.63	8.56
10.450	8.50	8.44	8.40	8.40	8.43
10.700	8.44	8.41	8.37	8.31	8.25
10.950	8.18	8.12	8.05	7.98	7.91
11.200	7.84	7.78	7.71	7.64	7.57
11.450	7.50	7.43	7.35	7.26	7.16
11.700	7.07	7.00	6.94	6.90	6.86
11.950	6.82	6.80	6.78	6.77	6.76
12.200	6.76	6.78	6.80	6.83	6.86
12.450	6.90	6.95	6.97	6.91	6.80
12.700	6.71	6.65	6.60	6.56	6.54
12.950	6.52	6.51	6.51	6.56	6.64
13.200	6.67	6.66	6.63	6.59	6.55
13.450	6.50	6.45	6.41	6.37	6.33
13.700	6.30	6.26	6.24	6.22	6.20
13.950	6.18	6.17	6.16	6.17	6.18
14.200	6.18	6.18	6.17	6.16	6.15
14.450	6.14	6.12	6.11	6.10	6.09
14.700	6.07	6.06	6.04	6.03	6.02
14.950	6.00	5.99	5.99	5.97	5.96
15.200	5.95	5.94	5.92	5.91	5.89
15.450	5.88	5.86	5.85	5.84	5.82
15.700	5.81	5.80	5.79	5.78	5.77
15.950	5.75	5.74	5.72	5.71	5.70
16.200	5.68	5.67	5.66	5.64	5.63
16.450	5.62	5.60	5.59	5.58	5.56
16.700	5.55	5.54	5.53	5.51	5.50
16.950	5.49	5.47	5.46	5.45	5.44
17.200	5.42	5.41	5.39	5.37	5.36
17.450	5.35	5.34	5.33	5.32	5.30
17.700	5.29	5.28	5.26	5.25	5.23
17.950	5.22	5.20	5.19	5.18	5.16
18.200	5.15	5.14	5.13	5.12	5.10
18.450	5.09	5.07	5.06	5.04	5.03
18.700	5.02	5.00	4.99	4.98	4.96
18.950	4.95	4.93	4.92	4.91	4.89
19.200	4.88	4.87	4.85	4.84	4.83
19.450	4.81	4.80	4.79	4.77	4.76
19.700	4.75	4.73	4.71	4.70	4.68
19.950	4.67	4.66	4.65	4.64	4.62

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
20.200	4.61	4.60	4.58	4.57	4.55
20.450	4.54	4.52	4.51	4.49	4.48
20.700	4.47	4.46	4.45	4.43	4.42
20.950	4.41	4.39	4.37	4.36	4.35
21.200	4.33	4.32	4.30	4.29	4.28
21.450	4.26	4.25	4.24	4.22	4.21
21.700	4.19	4.18	4.17	4.15	4.14
21.950	4.13	4.11	4.10	4.08	4.07
22.200	4.06	4.04	4.03	4.01	3.99
22.450	3.98	3.97	3.96	3.95	3.93
22.700	3.92	3.91	3.89	3.88	3.86
22.950	3.84	3.83	3.82	3.80	3.79
23.200	3.77	3.76	3.75	3.74	3.73
23.450	3.71	3.69	3.68	3.66	3.65
23.700	3.64	3.62	3.61	3.60	3.58
23.950	3.57	3.56	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Storm Event	Brunswick NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	34.300 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	42.63 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	42.63 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	83.300
Area (User Defined)	34.300 acres
Maximum Retention (Pervious)	2.0 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.9 in
Runoff Volume (Pervious)	13.927 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	13.872 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	194.32 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Storm Event	Brunswick NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	34.300 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
2.300	0.00	0.00	0.02	0.06	0.12
2.550	0.19	0.26	0.34	0.41	0.48
2.800	0.56	0.63	0.70	0.77	0.84
3.050	0.90	0.97	1.03	1.09	1.15
3.300	1.21	1.28	1.35	1.42	1.49
3.550	1.56	1.65	1.74	1.84	1.93
3.800	2.02	2.10	2.19	2.27	2.36
4.050	2.44	2.51	2.58	2.64	2.72
4.300	2.80	2.88	2.96	3.05	3.14
4.550	3.23	3.33	3.42	3.52	3.62
4.800	3.72	3.83	3.94	4.06	4.18
5.050	4.30	4.43	4.58	4.72	4.86
5.300	4.99	5.12	5.25	5.37	5.50
5.550	5.61	5.70	5.78	5.87	5.99
5.800	6.12	6.25	6.40	6.55	6.72
6.050	6.92	7.18	7.47	7.74	7.96
6.300	8.17	8.35	8.51	8.66	8.80
6.550	8.87	8.82	8.72	8.67	8.70
6.800	8.81	8.96	9.16	9.39	9.67
7.050	9.98	10.34	10.72	11.16	11.62
7.300	12.15	12.70	13.30	13.94	14.69
7.550	16.46	20.96	26.89	32.12	35.87
7.800	38.59	40.52	41.81	42.51	42.63
8.050	41.62	38.33	33.97	30.03	27.11
8.300	24.76	22.85	21.20	19.81	18.59
8.550	17.73	17.38	17.35	17.27	17.01
8.800	16.63	16.23	15.79	15.36	14.93
9.050	14.51	14.11	13.73	13.35	13.01
9.300	12.67	12.35	12.05	11.78	11.52
9.550	11.32	11.27	11.29	11.29	11.25
9.800	11.17	11.08	10.98	10.88	10.77
10.050	10.65	10.51	10.37	10.24	10.12

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
10.300	10.01	9.92	9.84	9.78	9.71
10.550	9.67	9.68	9.71	9.72	9.70
10.800	9.65	9.59	9.52	9.45	9.37
11.050	9.30	9.22	9.15	9.07	8.99
11.300	8.91	8.84	8.76	8.68	8.60
11.550	8.52	8.41	8.29	8.19	8.11
11.800	8.05	8.00	7.95	7.91	7.89
12.050	7.87	7.86	7.85	7.85	7.87
12.300	7.90	7.93	7.97	8.02	8.08
12.550	8.10	8.04	7.92	7.81	7.73
12.800	7.68	7.64	7.62	7.60	7.58
13.050	7.59	7.65	7.73	7.77	7.77
13.300	7.73	7.69	7.64	7.58	7.53
13.550	7.48	7.43	7.39	7.35	7.32
13.800	7.29	7.27	7.24	7.22	7.21
14.050	7.20	7.21	7.22	7.23	7.22
14.300	7.22	7.20	7.19	7.18	7.17
14.550	7.15	7.14	7.13	7.11	7.10
14.800	7.08	7.06	7.05	7.04	7.03
15.050	7.01	7.00	6.99	6.97	6.96
15.300	6.95	6.93	6.91	6.89	6.88
15.550	6.87	6.85	6.84	6.82	6.81
15.800	6.80	6.79	6.77	6.76	6.74
16.050	6.72	6.71	6.69	6.68	6.66
16.300	6.65	6.64	6.62	6.61	6.59
16.550	6.58	6.56	6.55	6.53	6.52
16.800	6.50	6.49	6.47	6.46	6.44
17.050	6.43	6.41	6.40	6.39	6.37
17.300	6.35	6.33	6.32	6.30	6.29
17.550	6.28	6.27	6.25	6.23	6.22
17.800	6.21	6.19	6.17	6.15	6.14
18.050	6.12	6.11	6.09	6.07	6.06
18.300	6.05	6.04	6.02	6.01	5.99
18.550	5.97	5.95	5.94	5.92	5.91
18.800	5.89	5.88	5.86	5.84	5.83
19.050	5.82	5.80	5.78	5.77	5.75
19.300	5.74	5.72	5.71	5.69	5.68
19.550	5.66	5.64	5.63	5.61	5.60
19.800	5.58	5.56	5.54	5.53	5.52
20.050	5.50	5.49	5.47	5.46	5.44
20.300	5.43	5.41	5.39	5.37	5.35
20.550	5.34	5.32	5.30	5.29	5.28

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
20.800	5.26	5.25	5.24	5.22	5.20
21.050	5.18	5.16	5.15	5.13	5.11
21.300	5.10	5.08	5.07	5.05	5.04
21.550	5.02	5.00	4.99	4.97	4.96
21.800	4.94	4.92	4.91	4.89	4.88
22.050	4.86	4.84	4.83	4.81	4.79
22.300	4.77	4.76	4.74	4.72	4.71
22.550	4.70	4.68	4.67	4.65	4.64
22.800	4.62	4.60	4.58	4.56	4.55
23.050	4.53	4.51	4.50	4.48	4.47
23.300	4.45	4.44	4.43	4.41	4.39
23.550	4.37	4.35	4.34	4.32	4.30
23.800	4.29	4.27	4.25	4.24	4.23

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Storm Event	Brunswick NC 25-yr
Return Event	25 years
Duration	24.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	28.100 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	51.37 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	7.950 hours
Flow (Peak Interpolated Output)	51.36 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	87.740
Area (User Defined)	28.100 acres
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.1 in
Runoff Volume (Pervious)	16.660 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	16.600 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

SCS Unit Hydrograph Parameters

Receding/Rising, Tr/Tp	1.670
Unit peak, qp	159.19 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Storm Event	Brunswick NC 25-yr
Return Event	25 years
Duration	24.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	28.100 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.450	0.00	0.01	0.05	0.13	0.22
1.700	0.33	0.45	0.56	0.68	0.79
1.950	0.90	1.02	1.13	1.25	1.37
2.200	1.49	1.61	1.72	1.84	1.94
2.450	2.05	2.15	2.25	2.34	2.42
2.700	2.50	2.59	2.67	2.75	2.83
2.950	2.90	2.98	3.05	3.11	3.16
3.200	3.22	3.28	3.35	3.42	3.51
3.450	3.59	3.68	3.78	3.90	4.04
3.700	4.17	4.29	4.41	4.51	4.62
3.950	4.72	4.82	4.91	4.98	5.05
4.200	5.12	5.20	5.28	5.38	5.48
4.450	5.58	5.68	5.79	5.90	6.01
4.700	6.12	6.24	6.36	6.49	6.62
4.950	6.76	6.90	7.05	7.22	7.39
5.200	7.57	7.73	7.89	8.04	8.18
5.450	8.32	8.46	8.58	8.66	8.73
5.700	8.82	8.93	9.07	9.23	9.39
5.950	9.57	9.76	10.00	10.32	10.67
6.200	11.00	11.26	11.49	11.69	11.86
6.450	12.01	12.14	12.19	12.07	11.88
6.700	11.76	11.76	11.85	12.01	12.23
6.950	12.50	12.82	13.18	13.60	14.06
7.200	14.58	15.13	15.75	16.40	17.12
7.450	17.87	18.75	20.91	26.48	33.76
7.700	40.08	44.46	47.53	49.58	50.82
7.950	51.36	51.21	49.75	45.61	40.27
8.200	35.47	31.92	29.07	26.76	24.76
8.450	23.10	21.64	20.60	20.16	20.10
8.700	19.97	19.64	19.19	18.70	18.17
8.950	17.65	17.13	16.65	16.17	15.71
9.200	15.27	14.86	14.46	14.09	13.74

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

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

Time (hours)	Flow (ft ³ /s)				
9.450	13.41	13.11	12.88	12.80	12.82
9.700	12.82	12.76	12.66	12.55	12.43
9.950	12.31	12.17	12.04	11.88	11.71
10.200	11.55	11.41	11.28	11.18	11.08
10.450	11.00	10.92	10.87	10.88	10.91
10.700	10.92	10.88	10.82	10.75	10.67
10.950	10.58	10.49	10.41	10.32	10.23
11.200	10.14	10.05	9.96	9.87	9.77
11.450	9.69	9.59	9.49	9.37	9.24
11.700	9.12	9.03	8.96	8.90	8.85
11.950	8.80	8.77	8.75	8.73	8.72
12.200	8.72	8.74	8.77	8.80	8.84
12.450	8.89	8.95	8.98	8.90	8.77
12.700	8.64	8.56	8.50	8.46	8.42
12.950	8.40	8.38	8.39	8.45	8.54
13.200	8.59	8.57	8.54	8.49	8.42
13.450	8.36	8.30	8.25	8.19	8.15
13.700	8.10	8.06	8.03	8.00	7.97
13.950	7.95	7.93	7.92	7.93	7.94
14.200	7.94	7.94	7.93	7.92	7.90
14.450	7.89	7.87	7.85	7.84	7.82
14.700	7.80	7.79	7.76	7.74	7.73
14.950	7.71	7.70	7.69	7.67	7.65
15.200	7.64	7.62	7.60	7.58	7.56
15.450	7.54	7.53	7.51	7.49	7.47
15.700	7.46	7.44	7.43	7.42	7.40
15.950	7.38	7.36	7.34	7.32	7.31
16.200	7.29	7.27	7.25	7.24	7.22
16.450	7.20	7.19	7.17	7.15	7.14
16.700	7.12	7.10	7.09	7.07	7.05
16.950	7.03	7.02	7.00	6.98	6.97
17.200	6.95	6.93	6.91	6.89	6.87
17.450	6.85	6.84	6.83	6.81	6.79
17.700	6.78	6.76	6.74	6.72	6.70
17.950	6.68	6.66	6.65	6.63	6.61
18.200	6.59	6.58	6.57	6.55	6.53
18.450	6.52	6.49	6.47	6.46	6.44
18.700	6.42	6.40	6.39	6.37	6.35
18.950	6.33	6.32	6.30	6.28	6.26
19.200	6.25	6.23	6.21	6.19	6.18
19.450	6.16	6.14	6.12	6.11	6.09
19.700	6.07	6.05	6.03	6.01	5.99

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

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

Time (hours)	Flow (ft ³ /s)				
19.950	5.98	5.96	5.95	5.93	5.91
20.200	5.90	5.88	5.86	5.84	5.82
20.450	5.80	5.78	5.77	5.75	5.73
20.700	5.71	5.70	5.68	5.67	5.65
20.950	5.63	5.61	5.59	5.57	5.56
21.200	5.54	5.52	5.50	5.48	5.47
21.450	5.45	5.43	5.41	5.40	5.38
21.700	5.36	5.34	5.33	5.31	5.29
21.950	5.27	5.26	5.24	5.22	5.20
22.200	5.19	5.16	5.14	5.12	5.10
22.450	5.09	5.07	5.06	5.04	5.02
22.700	5.01	4.99	4.97	4.95	4.93
22.950	4.91	4.89	4.87	4.86	4.84
23.200	4.82	4.81	4.79	4.78	4.76
23.450	4.74	4.72	4.70	4.68	4.66
23.700	4.64	4.63	4.61	4.59	4.57
23.950	4.56	4.54	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Storm Event	Brunswick NC 25-yr
Return Event	25 years
Duration	24.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	34.300 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	57.99 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	57.90 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	83.300
Area (User Defined)	34.300 acres
Maximum Retention (Pervious)	2.0 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.6 in
Runoff Volume (Pervious)	18.804 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	18.732 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	194.32 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Storm Event	Brunswick NC 25-yr
Return Event	25 years
Duration	24.000 hours
Depth	8.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	34.300 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.900	0.00	0.00	0.03	0.08	0.16
2.150	0.26	0.37	0.49	0.60	0.72
2.400	0.83	0.95	1.06	1.17	1.28
2.650	1.38	1.48	1.58	1.68	1.77
2.900	1.87	1.96	2.05	2.14	2.22
3.150	2.29	2.37	2.45	2.53	2.62
3.400	2.71	2.81	2.91	3.02	3.15
3.650	3.29	3.43	3.56	3.68	3.80
3.900	3.92	4.03	4.15	4.25	4.35
4.150	4.43	4.52	4.62	4.72	4.83
4.400	4.95	5.07	5.19	5.31	5.44
4.650	5.57	5.70	5.83	5.98	6.12
4.900	6.28	6.43	6.59	6.76	6.95
5.150	7.15	7.35	7.53	7.71	7.89
5.400	8.06	8.22	8.38	8.53	8.64
5.650	8.74	8.85	9.00	9.17	9.35
5.900	9.55	9.75	9.98	10.25	10.61
6.150	11.00	11.37	11.67	11.94	12.18
6.400	12.39	12.58	12.75	12.83	12.73
6.650	12.56	12.46	12.49	12.61	12.81
6.900	13.07	13.38	13.75	14.17	14.65
7.150	15.17	15.77	16.39	17.10	17.84
7.400	18.66	19.52	20.52	22.95	29.15
7.650	37.29	44.42	49.44	53.03	55.51
7.900	57.10	57.90	57.90	56.40	51.83
8.150	45.86	40.47	36.47	33.27	30.67
8.400	28.42	26.54	24.88	23.70	23.22
8.650	23.17	23.04	22.68	22.16	21.61
8.900	21.01	20.43	19.84	19.29	18.74
9.150	18.23	17.72	17.26	16.80	16.37
9.400	15.97	15.60	15.25	14.99	14.91
9.650	14.93	14.93	14.87	14.76	14.64

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
9.900	14.50	14.36	14.21	14.06	13.87
10.150	13.68	13.49	13.34	13.20	13.07
10.400	12.97	12.88	12.79	12.73	12.74
10.650	12.78	12.79	12.75	12.68	12.60
10.900	12.51	12.41	12.31	12.21	12.11
11.150	12.01	11.90	11.80	11.70	11.59
11.400	11.49	11.38	11.28	11.16	11.02
11.650	10.87	10.73	10.63	10.54	10.47
11.900	10.41	10.36	10.32	10.30	10.28
12.150	10.27	10.28	10.30	10.33	10.38
12.400	10.43	10.49	10.56	10.59	10.50
12.650	10.35	10.20	10.10	10.03	9.98
12.900	9.95	9.92	9.90	9.90	9.99
13.150	10.09	10.15	10.13	10.09	10.03
13.400	9.96	9.88	9.81	9.75	9.69
13.650	9.64	9.58	9.53	9.50	9.47
13.900	9.44	9.41	9.39	9.38	9.39
14.150	9.40	9.41	9.41	9.39	9.38
14.400	9.36	9.35	9.33	9.31	9.29
14.650	9.27	9.25	9.23	9.21	9.18
14.900	9.17	9.15	9.13	9.12	9.10
15.150	9.08	9.06	9.05	9.03	9.00
15.400	8.98	8.96	8.94	8.92	8.90
15.650	8.88	8.86	8.84	8.83	8.81
15.900	8.79	8.77	8.75	8.73	8.71
16.150	8.69	8.67	8.65	8.63	8.61
16.400	8.59	8.57	8.55	8.53	8.51
16.650	8.49	8.47	8.45	8.43	8.41
16.900	8.39	8.37	8.35	8.33	8.31
17.150	8.29	8.27	8.25	8.23	8.20
17.400	8.18	8.16	8.15	8.13	8.11
17.650	8.09	8.07	8.06	8.03	8.01
17.900	7.99	7.96	7.94	7.92	7.90
18.150	7.88	7.86	7.84	7.83	7.81
18.400	7.79	7.77	7.74	7.72	7.70
18.650	7.68	7.66	7.64	7.62	7.60
18.900	7.58	7.56	7.54	7.52	7.50
19.150	7.48	7.46	7.44	7.42	7.39
19.400	7.37	7.36	7.33	7.31	7.29
19.650	7.27	7.25	7.23	7.20	7.18
19.900	7.16	7.14	7.12	7.11	7.09
20.150	7.07	7.05	7.03	7.01	6.98

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

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

Time (hours)	Flow (ft ³ /s)				
20.400	6.96	6.93	6.91	6.89	6.87
20.650	6.85	6.83	6.81	6.79	6.78
20.900	6.76	6.73	6.71	6.68	6.66
21.150	6.64	6.62	6.60	6.58	6.56
21.400	6.54	6.52	6.50	6.48	6.46
21.650	6.43	6.41	6.39	6.37	6.35
21.900	6.33	6.31	6.29	6.27	6.25
22.150	6.23	6.21	6.18	6.16	6.13
22.400	6.11	6.09	6.07	6.06	6.04
22.650	6.02	6.00	5.98	5.95	5.93
22.900	5.90	5.88	5.86	5.84	5.82
23.150	5.79	5.77	5.75	5.74	5.72
23.400	5.70	5.68	5.65	5.63	5.61
23.650	5.59	5.56	5.54	5.52	5.50
23.900	5.48	5.46	5.44	(N/A)	(N/A)

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Storm Event	Brunswick NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	28.100 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.947 hours
Flow (Peak, Computed)	58.70 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	7.950 hours
Flow (Peak Interpolated Output)	58.70 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	87.740
Area (User Defined)	28.100 acres
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	8.1 in
Runoff Volume (Pervious)	19.072 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	19.005 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

SCS Unit Hydrograph Parameters

Receding/Rising, Tr/Tp	1.670
Unit peak, qp	159.19 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Storm Event	Brunswick NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	28.100 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.300	0.00	0.00	0.02	0.09	0.20
1.550	0.33	0.48	0.62	0.76	0.89
1.800	1.03	1.17	1.30	1.44	1.57
2.050	1.70	1.84	1.99	2.13	2.26
2.300	2.39	2.52	2.65	2.76	2.88
2.550	2.99	3.09	3.19	3.28	3.37
2.800	3.46	3.55	3.63	3.72	3.80
3.050	3.88	3.94	4.00	4.06	4.13
3.300	4.20	4.29	4.38	4.48	4.58
3.550	4.69	4.83	4.99	5.14	5.28
3.800	5.41	5.53	5.65	5.77	5.88
4.050	5.98	6.06	6.14	6.21	6.30
4.300	6.39	6.50	6.61	6.72	6.84
4.550	6.96	7.08	7.21	7.34	7.47
4.800	7.61	7.75	7.90	8.06	8.22
5.050	8.39	8.58	8.78	8.98	9.16
5.300	9.34	9.51	9.67	9.82	9.98
5.550	10.11	10.20	10.27	10.37	10.50
5.800	10.65	10.83	11.01	11.21	11.43
6.050	11.70	12.07	12.47	12.84	13.14
6.300	13.40	13.62	13.82	13.98	14.12
6.550	14.17	14.02	13.80	13.65	13.64
6.800	13.74	13.92	14.17	14.47	14.83
7.050	15.25	15.72	16.24	16.83	17.46
7.300	18.17	18.91	19.72	20.58	21.58
7.550	24.05	30.44	38.78	46.00	50.99
7.800	54.45	56.75	58.13	58.70	58.48
8.050	56.77	52.02	45.91	40.42	36.35
8.300	33.10	30.46	28.18	26.28	24.61
8.550	23.42	22.92	22.85	22.69	22.32
8.800	21.80	21.24	20.63	20.04	19.46
9.050	18.90	18.35	17.84	17.33	16.87

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
9.300	16.41	15.99	15.58	15.21	14.86
9.550	14.61	14.52	14.54	14.53	14.46
9.800	14.35	14.23	14.09	13.95	13.80
10.050	13.64	13.46	13.26	13.08	12.93
10.300	12.78	12.66	12.55	12.46	12.37
10.550	12.31	12.32	12.36	12.36	12.32
10.800	12.25	12.17	12.07	11.98	11.88
11.050	11.78	11.68	11.58	11.47	11.37
11.300	11.27	11.17	11.06	10.96	10.86
11.550	10.74	10.60	10.45	10.32	10.22
11.800	10.13	10.07	10.00	9.95	9.92
12.050	9.89	9.87	9.86	9.86	9.88
12.300	9.91	9.95	10.00	10.06	10.12
12.550	10.15	10.07	9.91	9.77	9.68
12.800	9.61	9.56	9.52	9.49	9.47
13.050	9.48	9.55	9.65	9.70	9.69
13.300	9.65	9.59	9.52	9.45	9.38
13.550	9.32	9.26	9.21	9.15	9.10
13.800	9.07	9.04	9.01	8.98	8.96
14.050	8.95	8.96	8.97	8.97	8.97
14.300	8.96	8.94	8.92	8.91	8.89
14.550	8.87	8.85	8.83	8.81	8.79
14.800	8.77	8.75	8.73	8.71	8.69
15.050	8.68	8.66	8.64	8.62	8.61
15.300	8.59	8.56	8.54	8.52	8.50
15.550	8.48	8.46	8.44	8.42	8.40
15.800	8.39	8.37	8.35	8.33	8.31
16.050	8.29	8.27	8.25	8.23	8.21
16.300	8.19	8.17	8.15	8.13	8.11
16.550	8.09	8.07	8.05	8.03	8.02
16.800	8.00	7.97	7.96	7.94	7.92
17.050	7.90	7.88	7.86	7.84	7.82
17.300	7.79	7.77	7.75	7.73	7.72
17.550	7.70	7.68	7.66	7.64	7.63
17.800	7.61	7.58	7.56	7.54	7.52
18.050	7.50	7.48	7.46	7.44	7.42
18.300	7.40	7.39	7.37	7.35	7.32
18.550	7.30	7.28	7.26	7.24	7.22
18.800	7.20	7.18	7.16	7.14	7.12
19.050	7.10	7.08	7.06	7.04	7.03
19.300	7.01	6.98	6.96	6.95	6.93
19.550	6.91	6.89	6.87	6.85	6.82

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
19.800	6.80	6.78	6.76	6.74	6.72
20.050	6.71	6.69	6.67	6.65	6.63
20.300	6.61	6.59	6.56	6.54	6.52
20.550	6.50	6.48	6.46	6.44	6.42
20.800	6.41	6.39	6.37	6.35	6.33
21.050	6.30	6.28	6.26	6.24	6.22
21.300	6.20	6.18	6.16	6.14	6.12
21.550	6.10	6.08	6.06	6.04	6.02
21.800	6.00	5.98	5.96	5.94	5.92
22.050	5.90	5.88	5.86	5.84	5.82
22.300	5.80	5.77	5.75	5.73	5.72
22.550	5.70	5.68	5.66	5.64	5.63
22.800	5.60	5.58	5.56	5.53	5.51
23.050	5.49	5.47	5.45	5.43	5.41
23.300	5.40	5.38	5.36	5.34	5.32
23.550	5.29	5.27	5.25	5.23	5.21
23.800	5.19	5.17	5.15	5.13	5.12

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Storm Event	Brunswick NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	34.300 acres
Computational Time Increment	0.027 hours
Time to Peak (Computed)	7.973 hours
Flow (Peak, Computed)	67.01 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	7.950 hours
Flow (Peak Interpolated Output)	66.93 ft ³ /s
Drainage Area	
SCS CN (Composite)	83.300
Area (User Defined)	34.300 acres
Maximum Retention (Pervious)	2.0 in
Maximum Retention (Pervious, 20 percent)	0.4 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.6 in
Runoff Volume (Pervious)	21.700 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	21.619 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Brunswick Site

Subsection: Unit Hydrograph Summary
Label: CM-2

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	194.32 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
Label: CM-2

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Storm Event	Brunswick NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	34.300 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.750	0.00	0.01	0.05	0.13	0.24
2.000	0.36	0.49	0.63	0.77	0.91
2.250	1.05	1.20	1.34	1.47	1.61
2.500	1.74	1.87	1.99	2.11	2.22
2.750	2.33	2.44	2.55	2.66	2.77
3.000	2.87	2.97	3.05	3.14	3.22
3.250	3.31	3.40	3.50	3.61	3.73
3.500	3.84	3.97	4.12	4.29	4.45
3.750	4.61	4.75	4.89	5.03	5.16
4.000	5.30	5.42	5.52	5.62	5.72
4.250	5.82	5.94	6.07	6.20	6.33
4.500	6.47	6.62	6.76	6.91	7.06
4.750	7.22	7.38	7.55	7.73	7.91
5.000	8.09	8.29	8.51	8.74	8.96
5.250	9.18	9.39	9.59	9.78	9.97
5.500	10.15	10.32	10.44	10.54	10.67
5.750	10.83	11.03	11.23	11.45	11.69
6.000	11.95	12.26	12.68	13.14	13.56
6.250	13.91	14.22	14.48	14.73	14.94
6.500	15.12	15.20	15.08	14.86	14.73
6.750	14.75	14.89	15.11	15.41	15.76
7.000	16.18	16.67	17.22	17.82	18.50
7.250	19.22	20.04	20.89	21.83	22.82
7.500	23.98	26.79	33.99	43.43	51.67
7.750	57.44	61.53	64.33	66.09	66.93
8.000	66.87	65.07	59.74	52.82	46.58
8.250	41.95	38.25	35.25	32.64	30.47
8.500	28.56	27.20	26.63	26.57	26.41
8.750	25.99	25.40	24.76	24.07	23.39
9.000	22.72	22.07	21.44	20.85	20.27
9.250	19.73	19.21	18.72	18.25	17.83
9.500	17.42	17.13	17.03	17.06	17.05

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
9.750	16.98	16.85	16.71	16.55	16.39
10.000	16.22	16.04	15.83	15.61	15.40
10.250	15.21	15.05	14.91	14.79	14.68
10.500	14.58	14.51	14.52	14.57	14.58
10.750	14.53	14.45	14.36	14.25	14.14
11.000	14.02	13.91	13.79	13.68	13.56
11.250	13.44	13.32	13.20	13.08	12.96
11.500	12.84	12.71	12.54	12.37	12.21
11.750	12.09	12.00	11.92	11.85	11.79
12.000	11.75	11.72	11.70	11.68	11.69
12.250	11.71	11.75	11.80	11.86	11.92
12.500	12.01	12.04	11.94	11.76	11.60
12.750	11.49	11.40	11.35	11.30	11.27
13.000	11.25	11.26	11.35	11.47	11.53
13.250	11.51	11.46	11.40	11.31	11.23
13.500	11.15	11.08	11.01	10.95	10.88
13.750	10.83	10.78	10.75	10.72	10.68
14.000	10.66	10.65	10.66	10.67	10.68
14.250	10.68	10.66	10.65	10.63	10.61
14.500	10.59	10.56	10.54	10.52	10.50
14.750	10.48	10.45	10.42	10.40	10.38
15.000	10.36	10.35	10.32	10.30	10.28
15.250	10.26	10.24	10.21	10.19	10.16
15.500	10.14	10.11	10.09	10.07	10.05
15.750	10.03	10.01	9.99	9.97	9.95
16.000	9.92	9.89	9.87	9.85	9.82
16.250	9.80	9.78	9.76	9.73	9.71
16.500	9.69	9.67	9.64	9.62	9.60
16.750	9.58	9.55	9.53	9.51	9.49
17.000	9.46	9.44	9.42	9.40	9.37
17.250	9.35	9.32	9.29	9.27	9.25
17.500	9.23	9.21	9.19	9.17	9.14
17.750	9.12	9.10	9.07	9.05	9.02
18.000	8.99	8.97	8.95	8.92	8.90
18.250	8.88	8.86	8.85	8.82	8.80
18.500	8.77	8.74	8.72	8.70	8.67
18.750	8.65	8.62	8.60	8.58	8.55
19.000	8.53	8.51	8.49	8.46	8.44
19.250	8.42	8.39	8.37	8.35	8.32
19.500	8.30	8.28	8.25	8.23	8.21
19.750	8.18	8.15	8.12	8.10	8.08
20.000	8.06	8.04	8.02	8.00	7.97

Brunswick Site

Subsection: Unit Hydrograph (Hydrograph Table)
 Label: CM-2

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
20.250	7.95	7.93	7.90	7.87	7.84
20.500	7.82	7.80	7.77	7.75	7.72
20.750	7.70	7.69	7.67	7.64	7.62
21.000	7.59	7.56	7.54	7.51	7.49
21.250	7.46	7.44	7.42	7.40	7.37
21.500	7.35	7.33	7.30	7.28	7.25
21.750	7.23	7.21	7.18	7.16	7.14
22.000	7.11	7.09	7.06	7.04	7.02
22.250	6.99	6.96	6.93	6.91	6.89
22.500	6.87	6.85	6.83	6.80	6.78
22.750	6.76	6.73	6.71	6.68	6.65
23.000	6.62	6.60	6.57	6.55	6.53
23.250	6.51	6.49	6.47	6.45	6.42
23.500	6.39	6.36	6.34	6.31	6.29
23.750	6.26	6.24	6.22	6.19	6.17
24.000	6.15	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Addition Summary
Label: O-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Summary for Hydrograph Addition at 'O-1'

	Upstream Link	Upstream Node
Outlet-1		PO-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1	29.649	9.200	30.74
Flow (In)	O-1	29.649	9.200	30.74

Brunswick Site

Subsection: Addition Summary
Label: O-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	CM-1
<Catchment to Outflow Node>	CM-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	18.803	8.000	53.72
Flow (From)	CM-2	8.421	8.000	25.20
Flow (In)	O-1	27.223	8.000	78.92

Brunswick Site

Subsection: Addition Summary

Label: O-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Summary for Hydrograph Addition at 'O-1'

	Upstream Link	Upstream Node
Outlet-1		PO-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1	48.566	8.400	78.63
Flow (In)	O-1	48.566	8.400	78.63

Brunswick Site

Subsection: Addition Summary
Label: O-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	CM-1
<Catchment to Outflow Node>	CM-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	32.332	8.000	97.35
Flow (From)	CM-2	13.872	8.000	42.63
Flow (In)	O-1	46.204	8.000	139.98

Brunswick Site

Subsection: Addition Summary
Label: O-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Summary for Hydrograph Addition at 'O-1'

	Upstream Link	Upstream Node
Outlet-1		PO-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1	64.988	8.200	152.78
Flow (In)	O-1	64.988	8.200	152.78

Brunswick Site

Subsection: Addition Summary
Label: O-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	CM-1
<Catchment to Outflow Node>	CM-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	44.603	8.000	136.61
Flow (From)	CM-2	18.732	8.000	57.90
Flow (In)	O-1	63.336	8.000	194.52

Brunswick Site

Subsection: Addition Summary
Label: O-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Summary for Hydrograph Addition at 'O-1'

	Upstream Link	Upstream Node
Outlet-1		PO-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1	74.702	8.150	201.21
Flow (In)	O-1	74.702	8.150	201.21

Brunswick Site

Subsection: Addition Summary
Label: O-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Summary for Hydrograph Addition at 'O-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	CM-1
<Catchment to Outflow Node>	CM-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	51.946	8.000	159.89
Flow (From)	CM-2	21.619	7.950	66.93
Flow (In)	O-1	73.565	8.000	226.76

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.500	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.750	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.500	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.750	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
2.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
2.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
2.500	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
2.750	2,725.01	2,725.01	2,725.01	2,725.01	2,725.01
3.000	2,725.02	2,725.02	2,725.02	2,725.03	2,725.03
3.250	2,725.03	2,725.04	2,725.04	2,725.04	2,725.05
3.500	2,725.05	2,725.06	2,725.06	2,725.07	2,725.08
3.750	2,725.09	2,725.10	2,725.11	2,725.12	2,725.13
4.000	2,725.15	2,725.16	2,725.18	2,725.19	2,725.21
4.250	2,725.23	2,725.25	2,725.27	2,725.29	2,725.31
4.500	2,725.33	2,725.35	2,725.38	2,725.40	2,725.43
4.750	2,725.46	2,725.48	2,725.51	2,725.54	2,725.57
5.000	2,725.60	2,725.63	2,725.65	2,725.68	2,725.72
5.250	2,725.75	2,725.78	2,725.81	2,725.84	2,725.88
5.500	2,725.91	2,725.94	2,725.98	2,726.01	2,726.04
5.750	2,726.07	2,726.11	2,726.14	2,726.17	2,726.21
6.000	2,726.24	2,726.28	2,726.31	2,726.35	2,726.39
6.250	2,726.43	2,726.48	2,726.52	2,726.56	2,726.61
6.500	2,726.65	2,726.69	2,726.74	2,726.78	2,726.82
6.750	2,726.86	2,726.89	2,726.93	2,726.97	2,727.01
7.000	2,727.05	2,727.09	2,727.14	2,727.19	2,727.24
7.250	2,727.29	2,727.35	2,727.42	2,727.48	2,727.55
7.500	2,727.63	2,727.72	2,727.83	2,728.00	2,728.22
7.750	2,728.48	2,728.75	2,729.05	2,729.34	2,729.64
8.000	2,729.93	2,730.21	2,730.47	2,730.68	2,730.85
8.250	2,730.99	2,731.11	2,731.20	2,731.28	2,731.34
8.500	2,731.40	2,731.44	2,731.48	2,731.51	2,731.55
8.750	2,731.58	2,731.61	2,731.63	2,731.66	2,731.68
9.000	2,731.69	2,731.70	2,731.71	2,731.71	2,731.72
9.250	2,731.71	2,731.71	2,731.70	2,731.69	2,731.68
9.500	2,731.67	2,731.65	2,731.63	2,731.62	2,731.60
9.750	2,731.58	2,731.57	2,731.55	2,731.53	2,731.52
10.000	2,731.50	2,731.48	2,731.46	2,731.44	2,731.41

Brunswick Site

Subsection: Time vs. Elevation
Label: PO-1 (OUT)

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.250	2,731.39	2,731.36	2,731.34	2,731.32	2,731.29
10.500	2,731.26	2,731.24	2,731.21	2,731.19	2,731.16
10.750	2,731.14	2,731.12	2,731.09	2,731.07	2,731.04
11.000	2,731.02	2,730.99	2,730.97	2,730.94	2,730.91
11.250	2,730.89	2,730.86	2,730.83	2,730.80	2,730.77
11.500	2,730.74	2,730.71	2,730.68	2,730.65	2,730.62
11.750	2,730.59	2,730.56	2,730.53	2,730.50	2,730.46
12.000	2,730.43	2,730.40	2,730.37	2,730.34	2,730.31
12.250	2,730.28	2,730.25	2,730.22	2,730.19	2,730.16
12.500	2,730.14	2,730.11	2,730.09	2,730.06	2,730.03
12.750	2,730.01	2,729.98	2,729.95	2,729.92	2,729.90
13.000	2,729.87	2,729.84	2,729.82	2,729.79	2,729.77
13.250	2,729.74	2,729.72	2,729.70	2,729.68	2,729.65
13.500	2,729.63	2,729.60	2,729.58	2,729.56	2,729.53
13.750	2,729.51	2,729.49	2,729.46	2,729.44	2,729.41
14.000	2,729.39	2,729.37	2,729.34	2,729.32	2,729.30
14.250	2,729.28	2,729.26	2,729.24	2,729.22	2,729.20
14.500	2,729.18	2,729.16	2,729.14	2,729.12	2,729.10
14.750	2,729.08	2,729.06	2,729.04	2,729.03	2,729.01
15.000	2,728.99	2,728.97	2,728.95	2,728.93	2,728.92
15.250	2,728.90	2,728.88	2,728.87	2,728.85	2,728.83
15.500	2,728.82	2,728.80	2,728.78	2,728.77	2,728.75
15.750	2,728.74	2,728.72	2,728.70	2,728.69	2,728.67
16.000	2,728.66	2,728.65	2,728.63	2,728.62	2,728.60
16.250	2,728.59	2,728.57	2,728.56	2,728.55	2,728.53
16.500	2,728.52	2,728.51	2,728.49	2,728.48	2,728.46
16.750	2,728.45	2,728.44	2,728.43	2,728.41	2,728.40
17.000	2,728.39	2,728.37	2,728.36	2,728.35	2,728.34
17.250	2,728.32	2,728.31	2,728.30	2,728.29	2,728.28
17.500	2,728.27	2,728.25	2,728.24	2,728.23	2,728.22
17.750	2,728.21	2,728.20	2,728.19	2,728.18	2,728.17
18.000	2,728.15	2,728.14	2,728.13	2,728.12	2,728.11
18.250	2,728.10	2,728.09	2,728.08	2,728.07	2,728.06
18.500	2,728.05	2,728.04	2,728.03	2,728.02	2,728.01
18.750	2,728.00	2,727.99	2,727.98	2,727.97	2,727.96
19.000	2,727.95	2,727.94	2,727.93	2,727.92	2,727.91
19.250	2,727.90	2,727.89	2,727.88	2,727.87	2,727.87
19.500	2,727.86	2,727.85	2,727.84	2,727.83	2,727.82
19.750	2,727.81	2,727.80	2,727.79	2,727.78	2,727.78
20.000	2,727.77	2,727.76	2,727.75	2,727.74	2,727.73
20.250	2,727.72	2,727.72	2,727.71	2,727.70	2,727.69

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.500	2,727.68	2,727.67	2,727.66	2,727.66	2,727.65
20.750	2,727.64	2,727.63	2,727.62	2,727.61	2,727.61
21.000	2,727.60	2,727.59	2,727.58	2,727.57	2,727.57
21.250	2,727.56	2,727.55	2,727.54	2,727.53	2,727.53
21.500	2,727.52	2,727.51	2,727.50	2,727.49	2,727.49
21.750	2,727.48	2,727.47	2,727.46	2,727.45	2,727.45
22.000	2,727.44	2,727.43	2,727.42	2,727.41	2,727.41
22.250	2,727.40	2,727.39	2,727.38	2,727.38	2,727.37
22.500	2,727.36	2,727.35	2,727.34	2,727.34	2,727.33
22.750	2,727.32	2,727.31	2,727.31	2,727.30	2,727.29
23.000	2,727.28	2,727.28	2,727.27	2,727.26	2,727.26
23.250	2,727.25	2,727.24	2,727.23	2,727.23	2,727.22
23.500	2,727.21	2,727.20	2,727.20	2,727.19	2,727.18
23.750	2,727.18	2,727.17	2,727.16	2,727.15	2,727.15
24.000	2,727.14	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.500	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.750	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.500	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.750	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
2.000	2,725.00	2,725.00	2,725.01	2,725.01	2,725.01
2.250	2,725.02	2,725.02	2,725.02	2,725.03	2,725.03
2.500	2,725.04	2,725.05	2,725.05	2,725.06	2,725.07
2.750	2,725.08	2,725.09	2,725.11	2,725.12	2,725.14
3.000	2,725.16	2,725.18	2,725.20	2,725.22	2,725.24
3.250	2,725.26	2,725.29	2,725.31	2,725.34	2,725.37
3.500	2,725.40	2,725.43	2,725.46	2,725.50	2,725.53
3.750	2,725.56	2,725.60	2,725.63	2,725.67	2,725.71
4.000	2,725.74	2,725.78	2,725.82	2,725.85	2,725.89
4.250	2,725.93	2,725.97	2,726.00	2,726.04	2,726.08
4.500	2,726.11	2,726.15	2,726.19	2,726.23	2,726.27
4.750	2,726.31	2,726.35	2,726.39	2,726.43	2,726.47
5.000	2,726.51	2,726.56	2,726.60	2,726.64	2,726.69
5.250	2,726.74	2,726.78	2,726.83	2,726.88	2,726.93
5.500	2,726.99	2,727.04	2,727.09	2,727.14	2,727.19
5.750	2,727.24	2,727.29	2,727.34	2,727.40	2,727.45
6.000	2,727.51	2,727.57	2,727.63	2,727.69	2,727.75
6.250	2,727.82	2,727.89	2,727.97	2,728.04	2,728.11
6.500	2,728.18	2,728.26	2,728.33	2,728.40	2,728.46
6.750	2,728.53	2,728.59	2,728.65	2,728.71	2,728.78
7.000	2,728.85	2,728.92	2,729.00	2,729.08	2,729.16
7.250	2,729.25	2,729.35	2,729.45	2,729.56	2,729.68
7.500	2,729.80	2,729.94	2,730.13	2,730.38	2,730.71
7.750	2,731.10	2,731.52	2,731.95	2,732.39	2,732.82
8.000	2,733.24	2,733.62	2,733.93	2,734.16	2,734.32
8.250	2,734.42	2,734.48	2,734.51	2,734.52	2,734.51
8.500	2,734.49	2,734.46	2,734.42	2,734.39	2,734.36
8.750	2,734.33	2,734.30	2,734.26	2,734.23	2,734.20
9.000	2,734.16	2,734.12	2,734.09	2,734.05	2,734.01
9.250	2,733.97	2,733.93	2,733.89	2,733.85	2,733.82
9.500	2,733.78	2,733.75	2,733.72	2,733.69	2,733.66
9.750	2,733.64	2,733.62	2,733.60	2,733.58	2,733.57
10.000	2,733.55	2,733.53	2,733.52	2,733.50	2,733.49

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.250	2,733.47	2,733.45	2,733.44	2,733.42	2,733.40
10.500	2,733.38	2,733.37	2,733.35	2,733.34	2,733.32
10.750	2,733.31	2,733.29	2,733.28	2,733.27	2,733.25
11.000	2,733.24	2,733.23	2,733.21	2,733.20	2,733.19
11.250	2,733.17	2,733.16	2,733.14	2,733.13	2,733.11
11.500	2,733.10	2,733.08	2,733.07	2,733.05	2,733.03
11.750	2,733.02	2,733.00	2,732.98	2,732.96	2,732.94
12.000	2,732.93	2,732.91	2,732.89	2,732.87	2,732.85
12.250	2,732.83	2,732.82	2,732.80	2,732.78	2,732.77
12.500	2,732.75	2,732.74	2,732.72	2,732.71	2,732.69
12.750	2,732.67	2,732.66	2,732.64	2,732.62	2,732.60
13.000	2,732.58	2,732.56	2,732.54	2,732.52	2,732.51
13.250	2,732.49	2,732.48	2,732.46	2,732.44	2,732.42
13.500	2,732.41	2,732.39	2,732.37	2,732.35	2,732.33
13.750	2,732.31	2,732.29	2,732.27	2,732.25	2,732.23
14.000	2,732.21	2,732.19	2,732.17	2,732.15	2,732.13
14.250	2,732.11	2,732.09	2,732.07	2,732.05	2,732.03
14.500	2,732.01	2,731.99	2,731.97	2,731.95	2,731.93
14.750	2,731.91	2,731.90	2,731.88	2,731.86	2,731.84
15.000	2,731.82	2,731.80	2,731.78	2,731.76	2,731.74
15.250	2,731.72	2,731.70	2,731.68	2,731.67	2,731.65
15.500	2,731.63	2,731.61	2,731.59	2,731.57	2,731.55
15.750	2,731.53	2,731.51	2,731.50	2,731.48	2,731.46
16.000	2,731.44	2,731.42	2,731.40	2,731.38	2,731.36
16.250	2,731.34	2,731.32	2,731.30	2,731.28	2,731.27
16.500	2,731.25	2,731.23	2,731.21	2,731.19	2,731.17
16.750	2,731.15	2,731.13	2,731.11	2,731.10	2,731.08
17.000	2,731.06	2,731.04	2,731.02	2,731.00	2,730.98
17.250	2,730.96	2,730.95	2,730.93	2,730.91	2,730.89
17.500	2,730.87	2,730.85	2,730.83	2,730.81	2,730.79
17.750	2,730.78	2,730.76	2,730.74	2,730.72	2,730.70
18.000	2,730.68	2,730.66	2,730.64	2,730.63	2,730.61
18.250	2,730.59	2,730.57	2,730.55	2,730.53	2,730.52
18.500	2,730.50	2,730.48	2,730.46	2,730.44	2,730.42
18.750	2,730.40	2,730.38	2,730.37	2,730.35	2,730.33
19.000	2,730.31	2,730.29	2,730.27	2,730.25	2,730.24
19.250	2,730.22	2,730.20	2,730.18	2,730.16	2,730.15
19.500	2,730.13	2,730.11	2,730.09	2,730.07	2,730.06
19.750	2,730.04	2,730.02	2,730.00	2,729.98	2,729.96
20.000	2,729.95	2,729.93	2,729.91	2,729.89	2,729.87
20.250	2,729.86	2,729.84	2,729.82	2,729.80	2,729.78

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.500	2,729.77	2,729.75	2,729.73	2,729.71	2,729.69
20.750	2,729.68	2,729.66	2,729.64	2,729.62	2,729.61
21.000	2,729.59	2,729.57	2,729.55	2,729.54	2,729.52
21.250	2,729.50	2,729.48	2,729.47	2,729.45	2,729.43
21.500	2,729.41	2,729.40	2,729.38	2,729.36	2,729.34
21.750	2,729.32	2,729.31	2,729.29	2,729.27	2,729.26
22.000	2,729.24	2,729.22	2,729.20	2,729.19	2,729.17
22.250	2,729.15	2,729.14	2,729.12	2,729.10	2,729.09
22.500	2,729.07	2,729.05	2,729.04	2,729.02	2,729.00
22.750	2,728.99	2,728.97	2,728.95	2,728.93	2,728.92
23.000	2,728.90	2,728.88	2,728.87	2,728.85	2,728.83
23.250	2,728.82	2,728.80	2,728.78	2,728.77	2,728.75
23.500	2,728.73	2,728.72	2,728.70	2,728.69	2,728.67
23.750	2,728.65	2,728.64	2,728.62	2,728.60	2,728.59
24.000	2,728.57	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.500	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.750	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.500	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.750	2,725.01	2,725.01	2,725.01	2,725.02	2,725.02
2.000	2,725.03	2,725.03	2,725.04	2,725.05	2,725.06
2.250	2,725.07	2,725.08	2,725.10	2,725.12	2,725.14
2.500	2,725.16	2,725.19	2,725.21	2,725.24	2,725.27
2.750	2,725.31	2,725.34	2,725.38	2,725.42	2,725.45
3.000	2,725.50	2,725.54	2,725.58	2,725.62	2,725.66
3.250	2,725.70	2,725.74	2,725.78	2,725.82	2,725.86
3.500	2,725.91	2,725.95	2,725.99	2,726.04	2,726.08
3.750	2,726.13	2,726.17	2,726.22	2,726.27	2,726.31
4.000	2,726.36	2,726.41	2,726.46	2,726.51	2,726.56
4.250	2,726.60	2,726.65	2,726.70	2,726.75	2,726.80
4.500	2,726.85	2,726.90	2,726.95	2,727.00	2,727.05
4.750	2,727.11	2,727.16	2,727.21	2,727.27	2,727.33
5.000	2,727.38	2,727.44	2,727.50	2,727.56	2,727.63
5.250	2,727.69	2,727.76	2,727.83	2,727.90	2,727.97
5.500	2,728.04	2,728.11	2,728.18	2,728.25	2,728.32
5.750	2,728.39	2,728.46	2,728.54	2,728.61	2,728.68
6.000	2,728.76	2,728.84	2,728.92	2,729.01	2,729.10
6.250	2,729.19	2,729.29	2,729.39	2,729.49	2,729.59
6.500	2,729.69	2,729.79	2,729.89	2,729.98	2,730.07
6.750	2,730.15	2,730.24	2,730.33	2,730.41	2,730.51
7.000	2,730.60	2,730.70	2,730.80	2,730.91	2,731.02
7.250	2,731.14	2,731.27	2,731.40	2,731.54	2,731.70
7.500	2,731.86	2,732.04	2,732.27	2,732.59	2,733.00
7.750	2,733.46	2,733.92	2,734.36	2,734.77	2,735.14
8.000	2,735.48	2,735.74	2,735.93	2,736.02	2,736.04
8.250	2,736.02	2,735.96	2,735.88	2,735.80	2,735.71
8.500	2,735.62	2,735.54	2,735.46	2,735.38	2,735.32
8.750	2,735.26	2,735.21	2,735.16	2,735.11	2,735.06
9.000	2,735.01	2,734.96	2,734.90	2,734.85	2,734.79
9.250	2,734.73	2,734.67	2,734.60	2,734.54	2,734.48
9.500	2,734.42	2,734.36	2,734.30	2,734.25	2,734.21
9.750	2,734.17	2,734.13	2,734.10	2,734.07	2,734.04
10.000	2,734.01	2,733.98	2,733.95	2,733.93	2,733.90

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.250	2,733.88	2,733.85	2,733.83	2,733.81	2,733.79
10.500	2,733.77	2,733.75	2,733.74	2,733.72	2,733.71
10.750	2,733.70	2,733.69	2,733.68	2,733.67	2,733.66
11.000	2,733.65	2,733.64	2,733.63	2,733.62	2,733.61
11.250	2,733.60	2,733.59	2,733.58	2,733.57	2,733.56
11.500	2,733.55	2,733.54	2,733.53	2,733.52	2,733.51
11.750	2,733.50	2,733.49	2,733.47	2,733.46	2,733.45
12.000	2,733.44	2,733.42	2,733.41	2,733.40	2,733.39
12.250	2,733.38	2,733.37	2,733.36	2,733.35	2,733.35
12.500	2,733.34	2,733.34	2,733.34	2,733.33	2,733.32
12.750	2,733.31	2,733.31	2,733.30	2,733.29	2,733.28
13.000	2,733.27	2,733.26	2,733.25	2,733.25	2,733.24
13.250	2,733.24	2,733.24	2,733.23	2,733.23	2,733.22
13.500	2,733.21	2,733.21	2,733.20	2,733.19	2,733.19
13.750	2,733.18	2,733.17	2,733.16	2,733.15	2,733.15
14.000	2,733.14	2,733.13	2,733.12	2,733.12	2,733.11
14.250	2,733.11	2,733.10	2,733.09	2,733.09	2,733.08
14.500	2,733.08	2,733.07	2,733.07	2,733.06	2,733.06
14.750	2,733.05	2,733.05	2,733.04	2,733.04	2,733.03
15.000	2,733.03	2,733.02	2,733.02	2,733.01	2,733.01
15.250	2,733.01	2,733.00	2,733.00	2,732.99	2,732.99
15.500	2,732.98	2,732.97	2,732.97	2,732.96	2,732.96
15.750	2,732.95	2,732.94	2,732.94	2,732.93	2,732.92
16.000	2,732.92	2,732.91	2,732.90	2,732.89	2,732.88
16.250	2,732.88	2,732.87	2,732.86	2,732.85	2,732.84
16.500	2,732.83	2,732.82	2,732.81	2,732.80	2,732.79
16.750	2,732.78	2,732.77	2,732.76	2,732.75	2,732.74
17.000	2,732.73	2,732.72	2,732.71	2,732.70	2,732.69
17.250	2,732.68	2,732.67	2,732.66	2,732.64	2,732.63
17.500	2,732.62	2,732.61	2,732.59	2,732.58	2,732.57
17.750	2,732.56	2,732.54	2,732.53	2,732.52	2,732.51
18.000	2,732.49	2,732.48	2,732.46	2,732.45	2,732.44
18.250	2,732.42	2,732.41	2,732.39	2,732.38	2,732.36
18.500	2,732.35	2,732.33	2,732.32	2,732.30	2,732.29
18.750	2,732.27	2,732.26	2,732.24	2,732.22	2,732.21
19.000	2,732.19	2,732.18	2,732.16	2,732.14	2,732.13
19.250	2,732.11	2,732.09	2,732.08	2,732.06	2,732.04
19.500	2,732.03	2,732.01	2,731.99	2,731.98	2,731.96
19.750	2,731.94	2,731.92	2,731.90	2,731.89	2,731.87
20.000	2,731.85	2,731.83	2,731.81	2,731.80	2,731.78
20.250	2,731.76	2,731.74	2,731.72	2,731.70	2,731.68

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.500	2,731.66	2,731.65	2,731.63	2,731.61	2,731.59
20.750	2,731.57	2,731.55	2,731.53	2,731.51	2,731.49
21.000	2,731.47	2,731.45	2,731.43	2,731.41	2,731.39
21.250	2,731.37	2,731.35	2,731.33	2,731.31	2,731.29
21.500	2,731.27	2,731.25	2,731.23	2,731.21	2,731.19
21.750	2,731.17	2,731.14	2,731.12	2,731.10	2,731.08
22.000	2,731.06	2,731.04	2,731.02	2,731.00	2,730.98
22.250	2,730.96	2,730.93	2,730.91	2,730.89	2,730.87
22.500	2,730.85	2,730.82	2,730.80	2,730.78	2,730.76
22.750	2,730.74	2,730.72	2,730.69	2,730.67	2,730.65
23.000	2,730.63	2,730.61	2,730.58	2,730.56	2,730.54
23.250	2,730.52	2,730.50	2,730.47	2,730.45	2,730.43
23.500	2,730.41	2,730.38	2,730.36	2,730.34	2,730.31
23.750	2,730.29	2,730.27	2,730.25	2,730.22	2,730.20
24.000	2,730.18	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.500	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
0.750	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.000	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.250	2,725.00	2,725.00	2,725.00	2,725.00	2,725.00
1.500	2,725.00	2,725.00	2,725.01	2,725.01	2,725.01
1.750	2,725.02	2,725.02	2,725.03	2,725.04	2,725.05
2.000	2,725.05	2,725.07	2,725.08	2,725.10	2,725.12
2.250	2,725.14	2,725.17	2,725.19	2,725.23	2,725.26
2.500	2,725.30	2,725.34	2,725.38	2,725.42	2,725.47
2.750	2,725.51	2,725.56	2,725.60	2,725.65	2,725.70
3.000	2,725.75	2,725.80	2,725.84	2,725.89	2,725.94
3.250	2,725.99	2,726.03	2,726.08	2,726.13	2,726.17
3.500	2,726.22	2,726.27	2,726.32	2,726.37	2,726.42
3.750	2,726.48	2,726.53	2,726.58	2,726.64	2,726.69
4.000	2,726.75	2,726.80	2,726.86	2,726.92	2,726.97
4.250	2,727.03	2,727.08	2,727.14	2,727.20	2,727.25
4.500	2,727.31	2,727.37	2,727.43	2,727.49	2,727.55
4.750	2,727.61	2,727.68	2,727.74	2,727.81	2,727.87
5.000	2,727.94	2,728.01	2,728.08	2,728.15	2,728.23
5.250	2,728.30	2,728.38	2,728.46	2,728.54	2,728.62
5.500	2,728.70	2,728.79	2,728.87	2,728.95	2,729.04
5.750	2,729.12	2,729.20	2,729.29	2,729.37	2,729.46
6.000	2,729.55	2,729.64	2,729.74	2,729.84	2,729.95
6.250	2,730.05	2,730.16	2,730.28	2,730.39	2,730.51
6.500	2,730.62	2,730.74	2,730.85	2,730.96	2,731.06
6.750	2,731.16	2,731.26	2,731.36	2,731.46	2,731.57
7.000	2,731.67	2,731.78	2,731.90	2,732.03	2,732.15
7.250	2,732.29	2,732.43	2,732.58	2,732.74	2,732.91
7.500	2,733.09	2,733.28	2,733.52	2,733.83	2,734.20
7.750	2,734.61	2,735.03	2,735.43	2,735.78	2,736.08
8.000	2,736.31	2,736.48	2,736.58	2,736.60	2,736.56
8.250	2,736.47	2,736.37	2,736.25	2,736.14	2,736.02
8.500	2,735.91	2,735.81	2,735.71	2,735.63	2,735.56
8.750	2,735.51	2,735.45	2,735.40	2,735.35	2,735.30
9.000	2,735.25	2,735.19	2,735.14	2,735.09	2,735.04
9.250	2,734.99	2,734.94	2,734.89	2,734.83	2,734.78
9.500	2,734.72	2,734.66	2,734.61	2,734.55	2,734.50
9.750	2,734.46	2,734.41	2,734.37	2,734.34	2,734.30
10.000	2,734.27	2,734.23	2,734.20	2,734.17	2,734.14

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.250	2,734.11	2,734.09	2,734.06	2,734.04	2,734.01
10.500	2,733.99	2,733.97	2,733.95	2,733.93	2,733.92
10.750	2,733.90	2,733.89	2,733.88	2,733.87	2,733.86
11.000	2,733.84	2,733.83	2,733.82	2,733.81	2,733.80
11.250	2,733.79	2,733.77	2,733.76	2,733.75	2,733.74
11.500	2,733.73	2,733.71	2,733.70	2,733.69	2,733.68
11.750	2,733.66	2,733.65	2,733.64	2,733.62	2,733.61
12.000	2,733.60	2,733.59	2,733.58	2,733.57	2,733.57
12.250	2,733.56	2,733.56	2,733.55	2,733.55	2,733.55
12.500	2,733.54	2,733.54	2,733.54	2,733.54	2,733.54
12.750	2,733.53	2,733.53	2,733.52	2,733.52	2,733.51
13.000	2,733.51	2,733.50	2,733.50	2,733.50	2,733.49
13.250	2,733.49	2,733.49	2,733.49	2,733.49	2,733.49
13.500	2,733.48	2,733.48	2,733.47	2,733.46	2,733.46
13.750	2,733.45	2,733.44	2,733.44	2,733.43	2,733.42
14.000	2,733.42	2,733.41	2,733.40	2,733.40	2,733.39
14.250	2,733.39	2,733.38	2,733.38	2,733.37	2,733.37
14.500	2,733.36	2,733.36	2,733.35	2,733.35	2,733.34
14.750	2,733.34	2,733.33	2,733.33	2,733.32	2,733.32
15.000	2,733.31	2,733.31	2,733.30	2,733.30	2,733.29
15.250	2,733.29	2,733.28	2,733.28	2,733.27	2,733.27
15.500	2,733.26	2,733.26	2,733.25	2,733.25	2,733.24
15.750	2,733.24	2,733.23	2,733.23	2,733.22	2,733.22
16.000	2,733.21	2,733.21	2,733.20	2,733.20	2,733.19
16.250	2,733.19	2,733.18	2,733.18	2,733.17	2,733.17
16.500	2,733.16	2,733.16	2,733.15	2,733.14	2,733.14
16.750	2,733.13	2,733.13	2,733.12	2,733.12	2,733.11
17.000	2,733.11	2,733.10	2,733.10	2,733.09	2,733.09
17.250	2,733.08	2,733.08	2,733.07	2,733.07	2,733.06
17.500	2,733.06	2,733.05	2,733.05	2,733.04	2,733.04
17.750	2,733.03	2,733.03	2,733.02	2,733.02	2,733.01
18.000	2,733.01	2,733.00	2,733.00	2,732.99	2,732.98
18.250	2,732.98	2,732.97	2,732.96	2,732.96	2,732.95
18.500	2,732.94	2,732.94	2,732.93	2,732.92	2,732.91
18.750	2,732.90	2,732.90	2,732.89	2,732.88	2,732.87
19.000	2,732.86	2,732.85	2,732.84	2,732.83	2,732.82
19.250	2,732.81	2,732.80	2,732.79	2,732.78	2,732.76
19.500	2,732.75	2,732.74	2,732.73	2,732.72	2,732.71
19.750	2,732.69	2,732.68	2,732.67	2,732.65	2,732.64
20.000	2,732.63	2,732.61	2,732.60	2,732.59	2,732.57
20.250	2,732.56	2,732.55	2,732.53	2,732.52	2,732.50

Brunswick Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.500	2,732.49	2,732.47	2,732.46	2,732.44	2,732.42
20.750	2,732.41	2,732.39	2,732.38	2,732.36	2,732.34
21.000	2,732.33	2,732.31	2,732.29	2,732.27	2,732.26
21.250	2,732.24	2,732.22	2,732.20	2,732.19	2,732.17
21.500	2,732.15	2,732.13	2,732.11	2,732.10	2,732.08
21.750	2,732.06	2,732.04	2,732.02	2,732.00	2,731.98
22.000	2,731.96	2,731.94	2,731.92	2,731.90	2,731.88
22.250	2,731.86	2,731.84	2,731.82	2,731.80	2,731.78
22.500	2,731.76	2,731.74	2,731.72	2,731.70	2,731.68
22.750	2,731.66	2,731.64	2,731.61	2,731.59	2,731.57
23.000	2,731.55	2,731.53	2,731.51	2,731.48	2,731.46
23.250	2,731.44	2,731.42	2,731.39	2,731.37	2,731.35
23.500	2,731.33	2,731.30	2,731.28	2,731.26	2,731.23
23.750	2,731.21	2,731.19	2,731.17	2,731.14	2,731.12
24.000	2,731.10	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.001	0.001	0.002	0.003
2.750	0.004	0.005	0.006	0.007	0.009
3.000	0.011	0.013	0.014	0.017	0.019
3.250	0.021	0.023	0.026	0.029	0.031
3.500	0.035	0.038	0.042	0.047	0.052
3.750	0.058	0.065	0.072	0.080	0.088
4.000	0.097	0.107	0.117	0.128	0.139
4.250	0.151	0.164	0.177	0.190	0.204
4.500	0.219	0.235	0.251	0.268	0.286
4.750	0.304	0.323	0.342	0.361	0.380
5.000	0.400	0.420	0.440	0.461	0.483
5.250	0.504	0.527	0.549	0.572	0.595
5.500	0.619	0.643	0.667	0.691	0.714
5.750	0.737	0.761	0.785	0.809	0.834
6.000	0.860	0.886	0.913	0.942	0.972
6.250	1.004	1.036	1.068	1.100	1.133
6.500	1.166	1.200	1.233	1.264	1.294
6.750	1.324	1.353	1.383	1.413	1.445
7.000	1.477	1.510	1.546	1.585	1.626
7.250	1.670	1.717	1.768	1.823	1.881
7.500	1.943	2.015	2.114	2.256	2.441
7.750	2.666	2.913	3.180	3.457	3.740
8.000	4.026	4.303	4.560	4.778	4.958
8.250	5.106	5.226	5.326	5.410	5.479
8.500	5.536	5.582	5.623	5.662	5.699
8.750	5.734	5.767	5.795	5.820	5.840
9.000	5.856	5.869	5.877	5.882	5.883
9.250	5.881	5.876	5.868	5.858	5.845
9.500	5.829	5.812	5.794	5.775	5.758
9.750	5.740	5.722	5.704	5.685	5.666
10.000	5.645	5.624	5.601	5.578	5.553

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.250	5.528	5.502	5.476	5.449	5.422
10.500	5.394	5.367	5.340	5.313	5.287
10.750	5.262	5.236	5.211	5.185	5.159
11.000	5.132	5.105	5.078	5.049	5.021
11.250	4.992	4.963	4.934	4.905	4.875
11.500	4.845	4.815	4.784	4.752	4.721
11.750	4.688	4.656	4.624	4.591	4.558
12.000	4.525	4.492	4.460	4.429	4.397
12.250	4.367	4.337	4.308	4.280	4.253
12.500	4.227	4.202	4.177	4.151	4.125
12.750	4.098	4.071	4.043	4.016	3.989
13.000	3.962	3.936	3.910	3.886	3.863
13.250	3.840	3.818	3.796	3.773	3.751
13.500	3.728	3.706	3.683	3.660	3.638
13.750	3.615	3.592	3.569	3.546	3.524
14.000	3.501	3.479	3.458	3.437	3.416
14.250	3.396	3.377	3.357	3.338	3.319
14.500	3.301	3.283	3.264	3.247	3.229
14.750	3.212	3.194	3.177	3.160	3.144
15.000	3.127	3.110	3.094	3.077	3.061
15.250	3.045	3.029	3.014	2.999	2.984
15.500	2.969	2.954	2.939	2.925	2.910
15.750	2.896	2.882	2.869	2.855	2.842
16.000	2.829	2.815	2.802	2.790	2.777
16.250	2.764	2.752	2.739	2.727	2.715
16.500	2.703	2.691	2.679	2.667	2.655
16.750	2.643	2.632	2.620	2.609	2.598
17.000	2.587	2.576	2.565	2.554	2.543
17.250	2.533	2.522	2.512	2.501	2.491
17.500	2.481	2.471	2.461	2.451	2.442
17.750	2.432	2.423	2.413	2.404	2.394
18.000	2.385	2.376	2.367	2.358	2.349
18.250	2.340	2.331	2.322	2.313	2.305
18.500	2.296	2.288	2.279	2.271	2.262
18.750	2.254	2.245	2.237	2.228	2.220
19.000	2.211	2.203	2.195	2.187	2.179
19.250	2.171	2.163	2.155	2.147	2.139
19.500	2.131	2.124	2.116	2.108	2.101
19.750	2.093	2.086	2.078	2.071	2.064
20.000	2.056	2.049	2.042	2.035	2.028
20.250	2.021	2.013	2.006	1.999	1.992

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.500	1.985	1.978	1.972	1.965	1.958
20.750	1.951	1.944	1.937	1.931	1.924
21.000	1.917	1.911	1.904	1.897	1.891
21.250	1.884	1.877	1.871	1.864	1.858
21.500	1.851	1.845	1.838	1.832	1.825
21.750	1.818	1.812	1.805	1.799	1.792
22.000	1.786	1.779	1.773	1.767	1.760
22.250	1.754	1.748	1.741	1.735	1.729
22.500	1.723	1.716	1.710	1.704	1.698
22.750	1.692	1.686	1.680	1.674	1.668
23.000	1.662	1.656	1.650	1.644	1.638
23.250	1.632	1.627	1.621	1.615	1.609
23.500	1.603	1.598	1.592	1.586	1.580
23.750	1.574	1.569	1.563	1.557	1.552
24.000	1.546	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.001
2.000	0.002	0.003	0.004	0.006	0.008
2.250	0.010	0.013	0.016	0.019	0.022
2.500	0.026	0.030	0.035	0.040	0.046
2.750	0.053	0.061	0.070	0.080	0.091
3.000	0.103	0.115	0.129	0.143	0.158
3.250	0.174	0.190	0.208	0.226	0.245
3.500	0.265	0.286	0.307	0.331	0.354
3.750	0.377	0.401	0.426	0.450	0.476
4.000	0.501	0.527	0.553	0.580	0.606
4.250	0.633	0.660	0.687	0.713	0.740
4.500	0.767	0.794	0.822	0.850	0.879
4.750	0.908	0.938	0.968	0.999	1.031
5.000	1.063	1.094	1.127	1.161	1.196
5.250	1.232	1.269	1.307	1.346	1.385
5.500	1.425	1.465	1.505	1.545	1.585
5.750	1.626	1.667	1.710	1.754	1.799
6.000	1.844	1.891	1.939	1.991	2.046
6.250	2.103	2.163	2.224	2.285	2.347
6.500	2.410	2.473	2.535	2.595	2.653
6.750	2.709	2.764	2.820	2.877	2.938
7.000	3.001	3.067	3.138	3.211	3.289
7.250	3.373	3.464	3.562	3.665	3.776
7.500	3.896	4.034	4.216	4.475	4.814
7.750	5.218	5.666	6.143	6.638	7.142
8.000	7.642	8.109	8.501	8.794	8.996
8.250	9.129	9.209	9.250	9.262	9.250
8.500	9.220	9.178	9.131	9.086	9.045
8.750	9.006	8.966	8.925	8.883	8.838
9.000	8.792	8.745	8.697	8.648	8.600
9.250	8.550	8.501	8.452	8.405	8.359
9.500	8.314	8.272	8.232	8.197	8.166
9.750	8.138	8.113	8.089	8.067	8.045
10.000	8.025	8.005	7.986	7.967	7.947

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.250	7.927	7.906	7.884	7.863	7.841
10.500	7.820	7.799	7.779	7.761	7.744
10.750	7.728	7.712	7.696	7.680	7.663
11.000	7.647	7.630	7.613	7.596	7.579
11.250	7.562	7.544	7.527	7.509	7.491
11.500	7.472	7.454	7.435	7.416	7.396
11.750	7.375	7.355	7.334	7.313	7.291
12.000	7.269	7.246	7.224	7.202	7.180
12.250	7.159	7.138	7.118	7.098	7.080
12.500	7.062	7.046	7.029	7.011	6.991
12.750	6.971	6.949	6.927	6.905	6.883
13.000	6.861	6.839	6.818	6.798	6.779
13.250	6.760	6.741	6.722	6.702	6.682
13.500	6.661	6.639	6.617	6.595	6.572
13.750	6.549	6.526	6.503	6.479	6.456
14.000	6.432	6.409	6.386	6.364	6.341
14.250	6.320	6.298	6.277	6.255	6.234
14.500	6.212	6.191	6.169	6.147	6.126
14.750	6.104	6.083	6.061	6.040	6.018
15.000	5.997	5.975	5.954	5.933	5.912
15.250	5.891	5.870	5.849	5.829	5.808
15.500	5.787	5.766	5.746	5.725	5.704
15.750	5.684	5.663	5.643	5.622	5.601
16.000	5.580	5.559	5.539	5.518	5.497
16.250	5.477	5.456	5.436	5.415	5.395
16.500	5.375	5.355	5.334	5.314	5.294
16.750	5.274	5.254	5.234	5.214	5.195
17.000	5.175	5.155	5.136	5.116	5.096
17.250	5.076	5.056	5.036	5.016	4.996
17.500	4.976	4.956	4.936	4.917	4.897
17.750	4.878	4.858	4.839	4.820	4.800
18.000	4.781	4.762	4.743	4.723	4.704
18.250	4.685	4.666	4.647	4.629	4.610
18.500	4.591	4.572	4.553	4.533	4.514
18.750	4.495	4.476	4.458	4.439	4.420
19.000	4.401	4.383	4.364	4.346	4.327
19.250	4.309	4.290	4.272	4.254	4.236
19.500	4.218	4.200	4.182	4.164	4.146
19.750	4.128	4.110	4.093	4.074	4.056
20.000	4.038	4.020	4.002	3.984	3.966
20.250	3.949	3.931	3.913	3.896	3.878

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.500	3.861	3.844	3.826	3.809	3.792
20.750	3.774	3.757	3.741	3.724	3.707
21.000	3.690	3.673	3.657	3.640	3.623
21.250	3.607	3.590	3.573	3.556	3.539
21.500	3.522	3.505	3.489	3.472	3.456
21.750	3.439	3.423	3.407	3.390	3.374
22.000	3.358	3.342	3.326	3.310	3.295
22.250	3.279	3.263	3.247	3.232	3.216
22.500	3.200	3.185	3.170	3.154	3.139
22.750	3.123	3.108	3.092	3.077	3.061
23.000	3.045	3.030	3.015	2.999	2.984
23.250	2.969	2.954	2.939	2.924	2.910
23.500	2.895	2.880	2.866	2.851	2.837
23.750	2.822	2.808	2.793	2.779	2.765
24.000	2.751	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.001	0.001	0.002
1.750	0.004	0.006	0.008	0.011	0.014
2.000	0.018	0.022	0.027	0.032	0.038
2.250	0.045	0.054	0.065	0.077	0.090
2.500	0.105	0.122	0.140	0.159	0.180
2.750	0.202	0.225	0.250	0.276	0.303
3.000	0.331	0.359	0.386	0.414	0.442
3.250	0.471	0.499	0.528	0.557	0.587
3.500	0.617	0.648	0.679	0.710	0.742
3.750	0.775	0.809	0.843	0.878	0.914
4.000	0.950	0.986	1.023	1.059	1.095
4.250	1.131	1.167	1.204	1.241	1.279
4.500	1.318	1.357	1.397	1.438	1.478
4.750	1.520	1.562	1.605	1.649	1.695
5.000	1.742	1.790	1.840	1.889	1.941
5.250	1.994	2.049	2.106	2.164	2.224
5.500	2.283	2.343	2.404	2.465	2.527
5.750	2.589	2.653	2.718	2.783	2.850
6.000	2.919	2.992	3.068	3.148	3.231
6.250	3.317	3.407	3.500	3.596	3.690
6.500	3.786	3.883	3.978	4.071	4.159
6.750	4.244	4.330	4.417	4.507	4.600
7.000	4.695	4.796	4.902	5.015	5.135
7.250	5.261	5.396	5.542	5.697	5.861
7.500	6.040	6.242	6.506	6.877	7.361
7.750	7.918	8.492	9.048	9.582	10.088
8.000	10.543	10.912	11.172	11.309	11.340
8.250	11.301	11.219	11.114	10.995	10.870
8.500	10.746	10.626	10.515	10.416	10.330
8.750	10.252	10.179	10.108	10.039	9.972
9.000	9.905	9.836	9.764	9.689	9.611
9.250	9.532	9.451	9.370	9.288	9.205
9.500	9.124	9.047	8.976	8.912	8.855
9.750	8.804	8.757	8.713	8.672	8.633
10.000	8.597	8.561	8.527	8.494	8.462

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.250	8.431	8.402	8.374	8.347	8.322
10.500	8.299	8.277	8.258	8.241	8.226
10.750	8.213	8.201	8.189	8.177	8.165
11.000	8.153	8.140	8.128	8.116	8.104
11.250	8.091	8.079	8.066	8.054	8.041
11.500	8.028	8.016	8.003	7.989	7.974
11.750	7.960	7.945	7.929	7.914	7.898
12.000	7.883	7.868	7.854	7.840	7.826
12.250	7.814	7.803	7.793	7.784	7.777
12.500	7.771	7.766	7.761	7.754	7.746
12.750	7.736	7.725	7.714	7.704	7.693
13.000	7.682	7.672	7.663	7.656	7.651
13.250	7.646	7.641	7.635	7.629	7.622
13.500	7.615	7.606	7.598	7.589	7.579
13.750	7.570	7.560	7.550	7.541	7.531
14.000	7.522	7.513	7.505	7.497	7.489
14.250	7.483	7.476	7.469	7.463	7.457
14.500	7.451	7.445	7.438	7.433	7.427
14.750	7.421	7.415	7.409	7.403	7.397
15.000	7.391	7.386	7.380	7.374	7.369
15.250	7.363	7.358	7.352	7.346	7.340
15.500	7.333	7.326	7.319	7.312	7.305
15.750	7.297	7.289	7.281	7.273	7.264
16.000	7.256	7.247	7.238	7.228	7.219
16.250	7.209	7.199	7.189	7.179	7.168
16.500	7.158	7.147	7.136	7.124	7.113
16.750	7.101	7.090	7.078	7.066	7.053
17.000	7.041	7.028	7.016	7.003	6.990
17.250	6.976	6.963	6.949	6.935	6.921
17.500	6.907	6.893	6.879	6.864	6.850
17.750	6.835	6.820	6.805	6.790	6.775
18.000	6.759	6.743	6.727	6.710	6.694
18.250	6.677	6.661	6.644	6.627	6.610
18.500	6.593	6.576	6.559	6.541	6.524
18.750	6.506	6.489	6.471	6.453	6.435
19.000	6.417	6.399	6.380	6.362	6.343
19.250	6.325	6.306	6.288	6.269	6.250
19.500	6.231	6.212	6.193	6.173	6.153
19.750	6.134	6.114	6.093	6.073	6.053
20.000	6.033	6.012	5.992	5.972	5.952
20.250	5.931	5.911	5.890	5.870	5.849

Brunswick Site

Subsection: Time vs. Volume
 Label: PO-1

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.500	5.828	5.807	5.786	5.765	5.744
20.750	5.723	5.702	5.681	5.660	5.639
21.000	5.617	5.596	5.574	5.552	5.530
21.250	5.508	5.486	5.464	5.442	5.420
21.500	5.398	5.376	5.354	5.332	5.310
21.750	5.288	5.266	5.244	5.222	5.200
22.000	5.178	5.155	5.133	5.111	5.088
22.250	5.066	5.043	5.020	4.997	4.974
22.500	4.951	4.929	4.906	4.883	4.861
22.750	4.838	4.816	4.793	4.770	4.748
23.000	4.725	4.702	4.680	4.657	4.635
23.250	4.612	4.590	4.566	4.544	4.521
23.500	4.498	4.475	4.452	4.429	4.406
23.750	4.383	4.361	4.338	4.315	4.293
24.000	4.270	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.001	0.002	0.003	0.006	0.008
1.750	0.012	0.015	0.019	0.024	0.030
2.000	0.036	0.043	0.053	0.064	0.077
2.250	0.092	0.109	0.128	0.149	0.171
2.500	0.196	0.222	0.250	0.279	0.310
2.750	0.342	0.374	0.406	0.438	0.472
3.000	0.505	0.539	0.573	0.607	0.642
3.250	0.676	0.710	0.743	0.777	0.812
3.500	0.846	0.882	0.918	0.956	0.995
3.750	1.035	1.075	1.115	1.156	1.198
4.000	1.241	1.284	1.328	1.372	1.416
4.250	1.460	1.503	1.547	1.592	1.638
4.500	1.685	1.732	1.781	1.831	1.880
4.750	1.930	1.982	2.035	2.089	2.145
5.000	2.203	2.262	2.321	2.383	2.447
5.250	2.513	2.581	2.652	2.723	2.794
5.500	2.867	2.942	3.018	3.095	3.171
5.750	3.247	3.324	3.404	3.486	3.571
6.000	3.656	3.744	3.836	3.934	4.038
6.250	4.145	4.255	4.368	4.484	4.602
6.500	4.719	4.837	4.954	5.068	5.176
6.750	5.281	5.387	5.495	5.606	5.719
7.000	5.836	5.960	6.090	6.229	6.372
7.250	6.526	6.692	6.867	7.053	7.254
7.500	7.465	7.696	7.990	8.376	8.847
7.750	9.374	9.929	10.476	10.967	11.386
8.000	11.721	11.973	12.118	12.148	12.084
8.250	11.960	11.804	11.638	11.472	11.310
8.500	11.153	11.003	10.869	10.757	10.665
8.750	10.587	10.514	10.442	10.371	10.299
9.000	10.229	10.158	10.089	10.020	9.953
9.250	9.887	9.818	9.746	9.672	9.597
9.500	9.520	9.444	9.370	9.301	9.236
9.750	9.175	9.119	9.067	9.018	8.972
10.000	8.929	8.887	8.847	8.809	8.771

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.250	8.734	8.699	8.665	8.634	8.603
10.500	8.574	8.547	8.523	8.501	8.483
10.750	8.466	8.451	8.435	8.421	8.406
11.000	8.391	8.376	8.362	8.347	8.332
11.250	8.317	8.303	8.288	8.273	8.258
11.500	8.243	8.228	8.212	8.196	8.180
11.750	8.163	8.147	8.131	8.116	8.102
12.000	8.088	8.076	8.065	8.054	8.045
12.250	8.037	8.031	8.026	8.022	8.019
12.500	8.018	8.018	8.017	8.015	8.010
12.750	8.004	7.997	7.990	7.983	7.976
13.000	7.970	7.964	7.960	7.957	7.956
13.250	7.955	7.954	7.952	7.949	7.945
13.500	7.940	7.934	7.927	7.919	7.912
13.750	7.903	7.894	7.886	7.877	7.868
14.000	7.859	7.851	7.843	7.835	7.829
14.250	7.822	7.816	7.810	7.804	7.797
14.500	7.791	7.785	7.779	7.773	7.767
14.750	7.761	7.755	7.749	7.743	7.737
15.000	7.731	7.725	7.719	7.713	7.707
15.250	7.701	7.695	7.689	7.683	7.677
15.500	7.671	7.664	7.658	7.652	7.646
15.750	7.640	7.634	7.628	7.622	7.616
16.000	7.610	7.604	7.598	7.592	7.585
16.250	7.579	7.573	7.567	7.561	7.555
16.500	7.549	7.542	7.536	7.530	7.524
16.750	7.518	7.512	7.506	7.500	7.494
17.000	7.487	7.481	7.475	7.469	7.463
17.250	7.457	7.451	7.444	7.438	7.432
17.500	7.426	7.419	7.413	7.407	7.401
17.750	7.395	7.389	7.383	7.377	7.370
18.000	7.364	7.358	7.351	7.344	7.337
18.250	7.330	7.322	7.314	7.306	7.298
18.500	7.289	7.280	7.271	7.262	7.252
18.750	7.242	7.232	7.221	7.210	7.199
19.000	7.188	7.177	7.165	7.153	7.141
19.250	7.128	7.116	7.103	7.090	7.077
19.500	7.063	7.050	7.036	7.022	7.008
19.750	6.993	6.979	6.964	6.948	6.933
20.000	6.917	6.902	6.886	6.870	6.854
20.250	6.838	6.822	6.805	6.788	6.771

Brunswick Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.500	6.753	6.735	6.717	6.699	6.681
20.750	6.662	6.644	6.625	6.606	6.587
21.000	6.568	6.549	6.529	6.510	6.490
21.250	6.470	6.450	6.430	6.410	6.390
21.500	6.370	6.349	6.329	6.308	6.287
21.750	6.266	6.245	6.224	6.203	6.181
22.000	6.159	6.137	6.115	6.093	6.070
22.250	6.048	6.025	6.003	5.980	5.957
22.500	5.934	5.911	5.888	5.865	5.842
22.750	5.819	5.796	5.773	5.750	5.726
23.000	5.703	5.679	5.656	5.632	5.607
23.250	5.583	5.558	5.534	5.510	5.485
23.500	5.461	5.436	5.412	5.387	5.362
23.750	5.338	5.313	5.288	5.263	5.239
24.000	5.214	(N/A)	(N/A)	(N/A)	(N/A)

Brunswick Site

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

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
2,725.00	0.0	0.650	0.000	0.000	0.000
2,726.00	0.0	0.720	2.054	0.685	0.685
2,728.00	0.0	0.850	2.352	1.568	2.253
2,730.00	0.0	0.990	2.757	1.838	4.091
2,732.00	0.0	1.120	3.163	2.109	6.200
2,734.00	0.0	1.270	3.583	2.388	8.588
2,736.00	0.0	1.420	4.033	2.689	11.277
2,738.00	0.0	1.590	4.513	3.008	14.285
2,740.00	0.0	1.750	5.008	3.339	17.624

Brunswick Site

Subsection: Volume Equations
Label: PO-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Pond Volume Equations

*** Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

where: EL1, EL2 Lower and upper elevations of the increment
 Area1, Area2 Areas computed for EL1, EL2, respectively
 Volume Incremental volume between EL1 and EL2

Brunswick Site

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

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
2,725.00	0.0	0.650	0.000	0.000	0.000
2,726.00	0.0	0.720	2.054	0.685	0.685
2,728.00	0.0	0.850	2.352	1.568	2.253
2,730.00	0.0	0.990	2.757	1.838	4.091
2,732.00	0.0	1.120	3.163	2.109	6.200
2,734.00	0.0	1.270	3.583	2.388	8.588
2,736.00	0.0	1.420	4.033	2.689	11.277
2,738.00	0.0	1.590	4.513	3.008	14.285
2,740.00	0.0	1.750	5.008	3.339	17.624

Brunswick Site

Subsection: Volume Equations
Label: PO-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Pond Volume Equations

*** Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

where: EL1, EL2 Lower and upper elevations of the increment
 Area1, Area2 Areas computed for EL1, EL2, respectively
 Volume Incremental volume between EL1 and EL2

Brunswick Site

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

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
2,725.00	0.0	0.650	0.000	0.000	0.000
2,726.00	0.0	0.720	2.054	0.685	0.685
2,728.00	0.0	0.850	2.352	1.568	2.253
2,730.00	0.0	0.990	2.757	1.838	4.091
2,732.00	0.0	1.120	3.163	2.109	6.200
2,734.00	0.0	1.270	3.583	2.388	8.588
2,736.00	0.0	1.420	4.033	2.689	11.277
2,738.00	0.0	1.590	4.513	3.008	14.285
2,740.00	0.0	1.750	5.008	3.339	17.624

Brunswick Site

Subsection: Volume Equations
Label: PO-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Pond Volume Equations

*** Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

where: EL1, EL2 Lower and upper elevations of the increment
 Area1, Area2 Areas computed for EL1, EL2, respectively
 Volume Incremental volume between EL1 and EL2

Brunswick Site

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

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
2,725.00	0.0	0.650	0.000	0.000	0.000
2,726.00	0.0	0.720	2.054	0.685	0.685
2,728.00	0.0	0.850	2.352	1.568	2.253
2,730.00	0.0	0.990	2.757	1.838	4.091
2,732.00	0.0	1.120	3.163	2.109	6.200
2,734.00	0.0	1.270	3.583	2.388	8.588
2,736.00	0.0	1.420	4.033	2.689	11.277
2,738.00	0.0	1.590	4.513	3.008	14.285
2,740.00	0.0	1.750	5.008	3.339	17.624

Brunswick Site

Subsection: Volume Equations
Label: PO-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Pond Volume Equations

*** Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

where:	EL1, EL2	Lower and upper elevations of the increment
	Area1, Area2	Areas computed for EL1, EL2, respectively
	Volume	Incremental volume between EL1 and EL2

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	2,725.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	2,740.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Riser - 1	Forward	Culvert - 1	2,735.00	2,740.00
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	2,725.00	2,740.00
Culvert-Circular	Culvert - 1	Forward	TW	2,725.00	2,740.00
Orifice-Circular	Orifice - 2	Forward	TW	2,733.00	2,740.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	48.0 in
Length	160.00 ft
Length (Computed Barrel)	160.70 ft
Slope (Computed)	0.094 ft/ft
Outlet Control Data	
Manning's n	0.024
Ke	0.500
Kb	0.017
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0078
M	2.0000
C	0.0379
Y	0.6900
T1 ratio (HW/D)	1.089
T2 ratio (HW/D)	1.250
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T.1 & T.2...

T1 Elevation	2,729.36 ft	T1 Flow	87.96 ft ³ /s
T2 Elevation	2,730.00 ft	T2 Flow	100.53 ft ³ /s

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Structure ID: Riser - 1	
Structure Type: Stand Pipe	
Number of Openings	1
Elevation	2,735.00 ft
Diameter	60.0 in
Orifice Area	19.6 ft ²
Orifice Coefficient	0.600
Weir Length	15.71 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False
Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	4
Elevation	2,725.00 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600
Structure ID: Orifice - 2	
Structure Type: Orifice-Circular	
Number of Openings	8
Elevation	2,733.00 ft
Orifice Diameter	14.0 in
Orifice Coefficient	0.600
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft

Brunswick Site

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Convergence Tolerances	
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Brunswick Site

Subsection: Individual Outlet Curves
 Label: Composite Outlet Structure - 1

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

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

Mannings open channel maximum capacity: 256.26 ft³/s
 Upstream ID = Riser - 1, Orifice - 1
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
2,725.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
2,725.50	1.06	2,725.45	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,726.00	4.36	2,725.92	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,726.50	7.78	2,726.23	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,727.00	10.94	2,726.48	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,727.50	13.80	2,726.67	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,728.00	16.38	2,726.83	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,728.50	18.74	2,726.97	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,729.00	20.91	2,727.08	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,729.50	22.95	2,727.19	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,730.00	24.88	2,727.29	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,730.50	26.71	2,727.38	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,731.00	28.43	2,727.46	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,731.50	30.06	2,727.54	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,732.00	31.64	2,727.61	Free Outfall	Free Outfall	0.00	0.03	(N/A)	0.00
2,732.50	33.17	2,727.68	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,733.00	34.65	2,727.75	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,733.50	36.05	2,727.81	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,734.00	37.40	2,727.87	Free Outfall	Free Outfall	0.00	0.03	(N/A)	0.00
2,734.50	38.73	2,727.93	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,735.00	40.03	2,727.98	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,735.50	56.24	2,728.64	Free Outfall	Free Outfall	0.00	0.03	(N/A)	0.00
2,736.00	84.99	2,729.71	Free Outfall	Free Outfall	0.00	0.06	(N/A)	0.00
2,736.50	121.71	2,731.13	Free Outfall	Free Outfall	0.00	0.09	(N/A)	0.00
2,737.00	160.57	2,733.76	Free Outfall	Free Outfall	0.00	0.07	(N/A)	0.00
2,737.50	174.14	2,734.85	Free Outfall	Free Outfall	0.00	0.11	(N/A)	0.00
2,738.00	185.85	2,735.86	Free Outfall	Free Outfall	0.00	0.05	(N/A)	0.00
2,738.50	196.41	2,736.83	Free Outfall	Free Outfall	0.00	0.07	(N/A)	0.00
2,739.00	205.96	2,737.75	Free Outfall	Free Outfall	0.00	0.07	(N/A)	0.00
2,739.50	214.61	2,738.63	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,740.00	222.54	2,739.46	Free Outfall	Free Outfall	0.00	0.09	(N/A)	0.00

Message

WS below an invert; no flow.

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Culvert - 1 (Culvert-Circular)

Mannings open channel maximum capacity: 256.26 ft³/s

Upstream ID = Riser - 1, Orifice - 1

Downstream ID = Tailwater (Pond Outfall)

Message

CRIT.DEPTH CONTROL Vh= .100ft
Dcr= .296ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .208ft
Dcr= .604ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .283ft
Dcr= .810ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .341ft
Dcr= .964ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .388ft
Dcr= 1.087ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .427ft
Dcr= 1.187ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .461ft
Dcr= 1.273ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .492ft
Dcr= 1.347ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .519ft
Dcr= 1.413ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .545ft
Dcr= 1.474ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .568ft
Dcr= 1.529ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .590ft
Dcr= 1.580ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .610ft
Dcr= 1.626ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .630ft
Dcr= 1.670ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .649ft
Dcr= 1.712ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .666ft
Dcr= 1.751ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .683ft
Dcr= 1.788ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .700ft
Dcr= 1.823ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .715ft
Dcr= 1.856ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .731ft
Dcr= 1.889ft CRIT.DEPTH Hev= .00ft

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

Mannings open channel maximum capacity: 256.26 ft³/s
Upstream ID = Riser - 1, Orifice - 1
Downstream ID = Tailwater (Pond Outfall)

Message

CRIT.DEPTH CONTROL Vh= .921ft Dcr= 2.257ft CRIT.DEPTH Hev= .00ft CRIT.DEPTH CONTROL Vh= 1.277ft Dcr= 2.795ft CRIT.DEPTH Hev= .00ft INLET CONTROL... Submerged: HW =6.13 INLET CONTROL... Submerged: HW =8.76 INLET CONTROL... Submerged: HW =9.85 INLET CONTROL... Submerged: HW =10.86 INLET CONTROL... Submerged: HW =11.83 INLET CONTROL... Submerged: HW =12.75 INLET CONTROL... Submerged: HW =13.63 INLET CONTROL... Submerged: HW =14.46
--

Brunswick Site

Subsection: Individual Outlet Curves
 Label: Composite Outlet Structure - 1

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = Riser - 1 (Stand Pipe)

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

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(Into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
2,725.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
2,725.50	0.00	0.00	0.00	2,725.45	0.00	0.00	(N/A)	0.00
2,726.00	0.00	0.00	0.00	2,725.92	0.00	0.00	(N/A)	0.00
2,726.50	0.00	0.00	0.00	2,726.23	0.00	0.00	(N/A)	0.00
2,727.00	0.00	0.00	0.00	2,726.48	0.00	0.00	(N/A)	0.00
2,727.50	0.00	0.00	0.00	2,726.67	0.00	0.00	(N/A)	0.00
2,728.00	0.00	0.00	0.00	2,726.83	0.00	0.00	(N/A)	0.00
2,728.50	0.00	0.00	0.00	2,726.97	0.00	0.00	(N/A)	0.00
2,729.00	0.00	0.00	0.00	2,727.08	0.00	0.00	(N/A)	0.00
2,729.50	0.00	0.00	0.00	2,727.19	0.00	0.00	(N/A)	0.00
2,730.00	0.00	0.00	0.00	2,727.29	0.00	0.00	(N/A)	0.00
2,730.50	0.00	0.00	0.00	2,727.38	0.00	0.00	(N/A)	0.00
2,731.00	0.00	0.00	0.00	2,727.46	0.00	0.00	(N/A)	0.00
2,731.50	0.00	0.00	0.00	2,727.54	0.00	0.00	(N/A)	0.00
2,732.00	0.00	0.00	0.00	2,727.61	0.00	0.00	(N/A)	0.00
2,732.50	0.00	0.00	0.00	2,727.68	0.00	0.00	(N/A)	0.00
2,733.00	0.00	0.00	0.00	2,727.75	0.00	0.00	(N/A)	0.00
2,733.50	0.00	0.00	0.00	2,727.81	0.00	0.00	(N/A)	0.00
2,734.00	0.00	0.00	0.00	2,727.87	0.00	0.00	(N/A)	0.00
2,734.50	0.00	0.00	0.00	2,727.93	0.00	0.00	(N/A)	0.00
2,735.00	0.00	0.00	0.00	2,727.98	0.00	0.00	(N/A)	0.00
2,735.50	16.66	2,735.50	Free Outfall	2,728.64	0.00	0.00	(N/A)	0.00
2,736.00	47.12	2,736.00	Free Outfall	2,729.71	0.00	0.00	(N/A)	0.00
2,736.50	86.57	2,736.50	Free Outfall	2,731.13	0.00	0.00	(N/A)	0.00
2,737.00	133.29	2,737.00	Free Outfall	2,733.76	0.00	0.00	(N/A)	0.00
2,737.50	149.42	2,737.50	Free Outfall	2,734.85	0.00	0.00	(N/A)	0.00
2,738.00	163.69	2,738.00	2,735.86	2,735.86	0.00	0.00	(N/A)	0.00
2,738.50	176.80	2,738.50	2,736.83	2,736.83	0.00	0.00	(N/A)	0.00
2,739.00	189.01	2,739.00	2,737.75	2,737.75	0.00	0.00	(N/A)	0.00
2,739.50	200.47	2,739.50	2,738.63	2,738.63	0.00	0.00	(N/A)	0.00
2,740.00	211.32	2,740.00	2,739.46	2,739.46	0.00	0.00	(N/A)	0.00

Message

WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

RATING TABLE FOR ONE OUTLET TYPE Structure ID = Riser - 1 (Stand Pipe)

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

Message

WS below an invert; no flow.
Weir: H =0.5ft
Weir: H =1ft
Weir: H =1.5ft
Weir: H =2ft
Orifice: H =2.50; Riser orifice equation
controlling.
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=3.00
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=3.50
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=4.00
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=4.50
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=5.00

Brunswick Site

Subsection: Individual Outlet Curves
 Label: Composite Outlet Structure - 1

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

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

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

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
2,725.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
2,725.50	1.06	2,725.50	2,725.44	2,725.45	0.00	0.00	(N/A)	0.00
2,726.00	4.37	2,726.00	2,725.92	2,725.92	0.00	0.00	(N/A)	0.00
2,726.50	7.79	2,726.50	2,726.23	2,726.23	0.00	0.00	(N/A)	0.00
2,727.00	10.94	2,727.00	2,726.48	2,726.48	0.00	0.00	(N/A)	0.00
2,727.50	13.79	2,727.50	2,726.67	2,726.67	0.00	0.00	(N/A)	0.00
2,728.00	16.37	2,728.00	2,726.83	2,726.83	0.00	0.00	(N/A)	0.00
2,728.50	18.73	2,728.50	2,726.97	2,726.97	0.00	0.00	(N/A)	0.00
2,729.00	20.93	2,729.00	2,727.08	2,727.08	0.00	0.00	(N/A)	0.00
2,729.50	22.97	2,729.50	2,727.19	2,727.19	0.00	0.00	(N/A)	0.00
2,730.00	24.89	2,730.00	2,727.29	2,727.29	0.00	0.00	(N/A)	0.00
2,730.50	26.70	2,730.50	2,727.38	2,727.38	0.00	0.00	(N/A)	0.00
2,731.00	28.43	2,731.00	2,727.46	2,727.46	0.00	0.00	(N/A)	0.00
2,731.50	30.08	2,731.50	2,727.54	2,727.54	0.00	0.00	(N/A)	0.00
2,732.00	31.66	2,732.00	2,727.61	2,727.61	0.00	0.00	(N/A)	0.00
2,732.50	33.18	2,732.50	2,727.68	2,727.68	0.00	0.00	(N/A)	0.00
2,733.00	34.65	2,733.00	2,727.75	2,727.75	0.00	0.00	(N/A)	0.00
2,733.50	36.06	2,733.50	2,727.81	2,727.81	0.00	0.00	(N/A)	0.00
2,734.00	37.43	2,734.00	2,727.87	2,727.87	0.00	0.00	(N/A)	0.00
2,734.50	38.76	2,734.50	2,727.93	2,727.93	0.00	0.00	(N/A)	0.00
2,735.00	40.05	2,735.00	2,727.98	2,727.98	0.00	0.00	(N/A)	0.00
2,735.50	39.61	2,735.50	2,728.64	2,728.64	0.00	0.00	(N/A)	0.00
2,736.00	37.92	2,736.00	2,729.71	2,729.71	0.00	0.00	(N/A)	0.00
2,736.50	35.05	2,736.50	2,731.13	2,731.13	0.00	0.00	(N/A)	0.00
2,737.00	27.22	2,737.00	2,733.76	2,733.76	0.00	0.00	(N/A)	0.00
2,737.50	24.61	2,737.50	2,734.85	2,734.85	0.00	0.00	(N/A)	0.00
2,738.00	22.11	2,738.00	2,735.86	2,735.86	0.00	0.00	(N/A)	0.00
2,738.50	19.54	2,738.50	2,736.83	2,736.83	0.00	0.00	(N/A)	0.00
2,739.00	16.88	2,739.00	2,737.75	2,737.75	0.00	0.00	(N/A)	0.00
2,739.50	14.13	2,739.50	2,738.63	2,738.63	0.00	0.00	(N/A)	0.00
2,740.00	11.13	2,740.00	2,739.46	2,739.46	0.00	0.00	(N/A)	0.00

Message

WS below an invert; no flow.
 BACKWATER CONTROL.. Vh= .055ft
 hwDi= .445ft Lbw= .0ft Hev= .00ft

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

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

Message

H =.08
H =.27
H =.52
H =.83
H =1.17
H =1.53
H =1.92
H =2.31
H =2.71
H =3.12
H =3.54
H =3.96
H =4.39
H =4.82
H =5.25
H =5.69
H =6.13
H =6.57
H =7.02
H =6.86
H =6.29
H =5.37
H =3.24
H =2.65
H =2.14
H =1.67
H =1.25
H =.87
H =.54

Brunswick Site

Subsection: Individual Outlet Curves
 Label: Composite Outlet Structure - 1

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Orifice - 2 (Orifice-Circular)

Upstream ID = (Pond Water Surface)
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
2,725.00	0.00	(N/A)	0.00
2,725.50	0.00	(N/A)	0.00
2,726.00	0.00	(N/A)	0.00
2,726.50	0.00	(N/A)	0.00
2,727.00	0.00	(N/A)	0.00
2,727.50	0.00	(N/A)	0.00
2,728.00	0.00	(N/A)	0.00
2,728.50	0.00	(N/A)	0.00
2,729.00	0.00	(N/A)	0.00
2,729.50	0.00	(N/A)	0.00
2,730.00	0.00	(N/A)	0.00
2,730.50	0.00	(N/A)	0.00
2,731.00	0.00	(N/A)	0.00
2,731.50	0.00	(N/A)	0.00
2,732.00	0.00	(N/A)	0.00
2,732.50	0.00	(N/A)	0.00
2,733.00	0.00	(N/A)	0.00
2,733.50	6.75	(N/A)	0.00
2,734.00	23.58	(N/A)	0.00
2,734.50	39.41	(N/A)	0.00
2,735.00	48.99	(N/A)	0.00
2,735.50	56.99	(N/A)	0.00
2,736.00	63.99	(N/A)	0.00
2,736.50	70.30	(N/A)	0.00
2,737.00	76.08	(N/A)	0.00
2,737.50	81.46	(N/A)	0.00
2,738.00	86.50	(N/A)	0.00
2,738.50	91.27	(N/A)	0.00
2,739.00	95.80	(N/A)	0.00
2,739.50	100.12	(N/A)	0.00
2,740.00	104.27	(N/A)	0.00

Computation Messages

WS below an invert; no flow.
 WS below an invert; no flow.

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Orifice - 2 (Orifice-Circular)

Upstream ID = (Pond Water Surface)
Downstream ID = Tailwater (Pond Outfall)

Computation Messages

WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .133ft Dcr= .367ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .296ft Dcr= .705ft CRIT.DEPTH Hev= .00ft
H =.92
H =1.42
H =1.92
H =2.42
H =2.92
H =3.42
H =3.92
H =4.42
H =4.92
H =5.42
H =5.92
H =6.42

Brunswick Site

Subsection: Composite Rating Curve
 Label: Composite Outlet Structure - 1

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
2,725.00	0.00	(N/A)	0.00
2,725.50	1.06	(N/A)	0.00
2,726.00	4.36	(N/A)	0.00
2,726.50	7.78	(N/A)	0.00
2,727.00	10.94	(N/A)	0.00
2,727.50	13.80	(N/A)	0.00
2,728.00	16.38	(N/A)	0.00
2,728.50	18.74	(N/A)	0.00
2,729.00	20.91	(N/A)	0.00
2,729.50	22.95	(N/A)	0.00
2,730.00	24.88	(N/A)	0.00
2,730.50	26.71	(N/A)	0.00
2,731.00	28.43	(N/A)	0.00
2,731.50	30.06	(N/A)	0.00
2,732.00	31.64	(N/A)	0.00
2,732.50	33.17	(N/A)	0.00
2,733.00	34.65	(N/A)	0.00
2,733.50	42.81	(N/A)	0.00
2,734.00	60.98	(N/A)	0.00
2,734.50	78.14	(N/A)	0.00
2,735.00	89.03	(N/A)	0.00
2,735.50	113.23	(N/A)	0.00
2,736.00	148.98	(N/A)	0.00
2,736.50	192.01	(N/A)	0.00
2,737.00	236.66	(N/A)	0.00
2,737.50	255.60	(N/A)	0.00
2,738.00	272.35	(N/A)	0.00
2,738.50	287.68	(N/A)	0.00
2,739.00	301.76	(N/A)	0.00
2,739.50	314.73	(N/A)	0.00
2,740.00	326.81	(N/A)	0.00

Contributing Structures

(no Q: Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)

Brunswick Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Composite Outflow Summary

Contributing Structures

Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2

Brunswick Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Composite Outflow Summary

Contributing Structures

Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2
Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2
Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	2,725.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	2,740.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Riser - 1	Forward	Culvert - 1	2,735.00	2,740.00
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	2,725.00	2,740.00
Culvert-Circular	Culvert - 1	Forward	TW	2,725.00	2,740.00
Orifice-Circular	Orifice - 2	Forward	TW	2,733.00	2,740.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	48.0 in
Length	160.00 ft
Length (Computed Barrel)	160.70 ft
Slope (Computed)	0.094 ft/ft
Outlet Control Data	
Manning's n	0.024
Ke	0.500
Kb	0.017
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0078
M	2.0000
C	0.0379
Y	0.6900
T1 ratio (HW/D)	1.089
T2 ratio (HW/D)	1.250
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

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

T1 Elevation	2,729.36 ft	T1 Flow	87.96 ft ³ /s
T2 Elevation	2,730.00 ft	T2 Flow	100.53 ft ³ /s

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Structure ID: Riser - 1
 Structure Type: Stand Pipe

Number of Openings	1
Elevation	2,735.00 ft
Diameter	60.0 in
Orifice Area	19.6 ft ²
Orifice Coefficient	0.600
Weir Length	15.71 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: Orifice - 1
 Structure Type: Orifice-Circular

Number of Openings	4
Elevation	2,725.00 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 2
 Structure Type: Orifice-Circular

Number of Openings	8
Elevation	2,733.00 ft
Orifice Diameter	14.0 in
Orifice Coefficient	0.600

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall
----------------	--------------

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft

Brunswick Site

Subsection: Outlet Input Data

Return Event: 10 years

Label: Composite Outlet Structure - 1

Storm Event: Brunswick NC 10-yr

Convergence Tolerances	
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

RATING TABLE FOR ONE OUTLET TYPE

Structure ID = ()

Upstream ID =

Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Composite Rating Curve
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
2,725.00	0.00	(N/A)	0.00
2,725.50	1.06	(N/A)	0.00
2,726.00	4.36	(N/A)	0.00
2,726.50	7.78	(N/A)	0.00
2,727.00	10.94	(N/A)	0.00
2,727.50	13.80	(N/A)	0.00
2,728.00	16.38	(N/A)	0.00
2,728.50	18.74	(N/A)	0.00
2,729.00	20.91	(N/A)	0.00
2,729.50	22.95	(N/A)	0.00
2,730.00	24.88	(N/A)	0.00
2,730.50	26.71	(N/A)	0.00
2,731.00	28.43	(N/A)	0.00
2,731.50	30.06	(N/A)	0.00
2,732.00	31.64	(N/A)	0.00
2,732.50	33.17	(N/A)	0.00
2,733.00	34.65	(N/A)	0.00
2,733.50	42.81	(N/A)	0.00
2,734.00	60.98	(N/A)	0.00
2,734.50	78.14	(N/A)	0.00
2,735.00	89.03	(N/A)	0.00
2,735.50	113.23	(N/A)	0.00
2,736.00	148.98	(N/A)	0.00
2,736.50	192.01	(N/A)	0.00
2,737.00	236.66	(N/A)	0.00
2,737.50	255.60	(N/A)	0.00
2,738.00	272.35	(N/A)	0.00
2,738.50	287.68	(N/A)	0.00
2,739.00	301.76	(N/A)	0.00
2,739.50	314.73	(N/A)	0.00
2,740.00	326.81	(N/A)	0.00

Contributing Structures

(no Q: Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)

Brunswick Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Composite Outflow Summary

Contributing Structures

Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2

Brunswick Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Composite Outflow Summary

Contributing Structures

Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2
Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2
Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	2,725.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	2,740.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Riser - 1	Forward	Culvert - 1	2,735.00	2,740.00
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	2,725.00	2,740.00
Culvert-Circular	Culvert - 1	Forward	TW	2,725.00	2,740.00
Orifice-Circular	Orifice - 2	Forward	TW	2,733.00	2,740.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	48.0 in
Length	160.00 ft
Length (Computed Barrel)	160.70 ft
Slope (Computed)	0.094 ft/ft
Outlet Control Data	
Manning's n	0.024
Ke	0.500
Kb	0.017
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0078
M	2.0000
C	0.0379
Y	0.6900
T1 ratio (HW/D)	1.089
T2 ratio (HW/D)	1.250
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

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

T1 Elevation	2,729.36 ft	T1 Flow	87.96 ft ³ /s
T2 Elevation	2,730.00 ft	T2 Flow	100.53 ft ³ /s

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Structure ID: Riser - 1	
Structure Type: Stand Pipe	
Number of Openings	1
Elevation	2,735.00 ft
Diameter	60.0 in
Orifice Area	19.6 ft ²
Orifice Coefficient	0.600
Weir Length	15.71 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False
Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	4
Elevation	2,725.00 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600
Structure ID: Orifice - 2	
Structure Type: Orifice-Circular	
Number of Openings	8
Elevation	2,733.00 ft
Orifice Diameter	14.0 in
Orifice Coefficient	0.600
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft

Brunswick Site

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Convergence Tolerances	
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

RATING TABLE FOR ONE OUTLET TYPE Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Composite Rating Curve
 Label: Composite Outlet Structure - 1

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
2,725.00	0.00	(N/A)	0.00
2,725.50	1.06	(N/A)	0.00
2,726.00	4.36	(N/A)	0.00
2,726.50	7.78	(N/A)	0.00
2,727.00	10.94	(N/A)	0.00
2,727.50	13.80	(N/A)	0.00
2,728.00	16.38	(N/A)	0.00
2,728.50	18.74	(N/A)	0.00
2,729.00	20.91	(N/A)	0.00
2,729.50	22.95	(N/A)	0.00
2,730.00	24.88	(N/A)	0.00
2,730.50	26.71	(N/A)	0.00
2,731.00	28.43	(N/A)	0.00
2,731.50	30.06	(N/A)	0.00
2,732.00	31.64	(N/A)	0.00
2,732.50	33.17	(N/A)	0.00
2,733.00	34.65	(N/A)	0.00
2,733.50	42.81	(N/A)	0.00
2,734.00	60.98	(N/A)	0.00
2,734.50	78.14	(N/A)	0.00
2,735.00	89.03	(N/A)	0.00
2,735.50	113.23	(N/A)	0.00
2,736.00	148.98	(N/A)	0.00
2,736.50	192.01	(N/A)	0.00
2,737.00	236.66	(N/A)	0.00
2,737.50	255.60	(N/A)	0.00
2,738.00	272.35	(N/A)	0.00
2,738.50	287.68	(N/A)	0.00
2,739.00	301.76	(N/A)	0.00
2,739.50	314.73	(N/A)	0.00
2,740.00	326.81	(N/A)	0.00

Contributing Structures

(no Q: Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)

Brunswick Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Composite Outflow Summary

Contributing Structures

Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2

Brunswick Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Composite Outflow Summary

Contributing Structures

Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2
Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2
Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 100 years
 Storm Event: Brunswik NC 100-yr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	2,725.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	2,740.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Stand Pipe	Riser - 1	Forward	Culvert - 1	2,735.00	2,740.00
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	2,725.00	2,740.00
Culvert-Circular	Culvert - 1	Forward	TW	2,725.00	2,740.00
Orifice-Circular	Orifice - 2	Forward	TW	2,733.00	2,740.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	48.0 in
Length	160.00 ft
Length (Computed Barrel)	160.70 ft
Slope (Computed)	0.094 ft/ft
<hr/>	
Outlet Control Data	
Manning's n	0.024
Ke	0.500
Kb	0.017
Kr	0.000
Convergence Tolerance	0.00 ft
<hr/>	
Inlet Control Data	
Equation Form	Form 1
K	0.0078
M	2.0000
C	0.0379
Y	0.6900
T1 ratio (HW/D)	1.089
T2 ratio (HW/D)	1.250
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

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

T1 Elevation	2,729.36 ft	T1 Flow	87.96 ft ³ /s
T2 Elevation	2,730.00 ft	T2 Flow	100.53 ft ³ /s

Brunswick Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Structure ID: Riser - 1	
Structure Type: Stand Pipe	
Number of Openings	1
Elevation	2,735.00 ft
Diameter	60.0 in
Orifice Area	19.6 ft ²
Orifice Coefficient	0.600
Weir Length	15.71 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
K Reverse	1.000
Manning's n	0.000
Key, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False
Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	4
Elevation	2,725.00 ft
Orifice Diameter	12.0 in
Orifice Coefficient	0.600
Structure ID: Orifice - 2	
Structure Type: Orifice-Circular	
Number of Openings	8
Elevation	2,733.00 ft
Orifice Diameter	14.0 in
Orifice Coefficient	0.600
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft

Brunswick Site

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Convergence Tolerances	
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Brunswik NC 100-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Brunswik NC 100-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Brunswick Site

Subsection: Composite Rating Curve
 Label: Composite Outlet Structure - 1

Return Event: 100 years
 Storm Event: Brunswik NC 100-yr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
2,725.00	0.00	(N/A)	0.00
2,725.50	1.06	(N/A)	0.00
2,726.00	4.36	(N/A)	0.00
2,726.50	7.78	(N/A)	0.00
2,727.00	10.94	(N/A)	0.00
2,727.50	13.80	(N/A)	0.00
2,728.00	16.38	(N/A)	0.00
2,728.50	18.74	(N/A)	0.00
2,729.00	20.91	(N/A)	0.00
2,729.50	22.95	(N/A)	0.00
2,730.00	24.88	(N/A)	0.00
2,730.50	26.71	(N/A)	0.00
2,731.00	28.43	(N/A)	0.00
2,731.50	30.06	(N/A)	0.00
2,732.00	31.64	(N/A)	0.00
2,732.50	33.17	(N/A)	0.00
2,733.00	34.65	(N/A)	0.00
2,733.50	42.81	(N/A)	0.00
2,734.00	60.98	(N/A)	0.00
2,734.50	78.14	(N/A)	0.00
2,735.00	89.03	(N/A)	0.00
2,735.50	113.23	(N/A)	0.00
2,736.00	148.98	(N/A)	0.00
2,736.50	192.01	(N/A)	0.00
2,737.00	236.66	(N/A)	0.00
2,737.50	255.60	(N/A)	0.00
2,738.00	272.35	(N/A)	0.00
2,738.50	287.68	(N/A)	0.00
2,739.00	301.76	(N/A)	0.00
2,739.50	314.73	(N/A)	0.00
2,740.00	326.81	(N/A)	0.00

Contributing Structures

(no Q: Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)
 Orifice - 1, Culvert - 1 (no Q: Riser - 1, Orifice - 2)

Brunswick Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Composite Outflow Summary

Contributing Structures

Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1 (no Q: Riser - 1,Orifice - 2)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Orifice - 1,Culvert - 1,Orifice - 2 (no Q: Riser - 1)
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2
Riser - 1,Orifice - 1,Culvert - 1,Orifice - 2

Brunswick Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Brunswik NC 100-yr

Composite Outflow Summary

Contributing Structures

Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2
Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2
Riser - 1, Orifice - 1, Culvert - 1, Orifice - 2

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Peak Discharge	30.74 ft ³ /s
Time to Peak	9.200 hours
Hydrograph Volume	29.649 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)
2.450	0.00	0.00	0.00	0.00	0.01
2.700	0.01	0.01	0.02	0.02	0.02
2.950	0.03	0.03	0.04	0.05	0.05
3.200	0.06	0.07	0.08	0.08	0.09
3.450	0.10	0.11	0.12	0.14	0.15
3.700	0.17	0.19	0.21	0.23	0.26
3.950	0.29	0.32	0.35	0.38	0.41
4.200	0.45	0.49	0.53	0.57	0.61
4.450	0.66	0.71	0.75	0.81	0.86
4.700	0.91	0.97	1.03	1.15	1.33
4.950	1.51	1.70	1.89	2.09	2.28
5.200	2.48	2.69	2.90	3.11	3.32
5.450	3.54	3.76	3.98	4.20	4.42
5.700	4.64	4.86	5.08	5.31	5.54
5.950	5.77	6.01	6.25	6.51	6.77
6.200	7.05	7.34	7.63	7.91	8.18
6.450	8.46	8.73	9.01	9.28	9.54
6.700	9.78	10.02	10.26	10.50	10.75
6.950	11.00	11.23	11.48	11.73	12.01
7.200	12.30	12.62	12.95	13.32	13.70
7.450	14.08	14.47	14.92	15.53	16.40
7.700	17.42	18.63	19.84	21.11	22.31
7.950	23.50	24.63	25.66	26.59	27.32
8.200	27.92	28.40	28.77	29.08	29.34
8.450	29.55	29.72	29.86	29.98	30.10
8.700	30.21	30.31	30.40	30.49	30.56
8.950	30.61	30.66	30.70	30.72	30.74
9.200	30.74	30.73	30.72	30.70	30.67
9.450	30.63	30.58	30.53	30.48	30.43
9.700	30.38	30.33	30.28	30.22	30.17
9.950	30.11	30.05	29.99	29.92	29.85
10.200	29.77	29.70	29.62	29.54	29.46
10.450	29.37	29.29	29.21	29.12	29.04
10.700	28.96	28.89	28.81	28.73	28.65
10.950	28.57	28.49	28.40	28.31	28.22
11.200	28.13	28.03	27.94	27.84	27.74
11.450	27.64	27.55	27.45	27.34	27.24

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

Time (hours)	Flow (ft ³ /s)				
11.700	27.13	27.02	26.92	26.81	26.70
11.950	26.58	26.46	26.34	26.23	26.11
12.200	26.00	25.89	25.78	25.68	25.58
12.450	25.48	25.38	25.29	25.20	25.10
12.700	25.01	24.91	24.80	24.70	24.59
12.950	24.48	24.38	24.27	24.17	24.08
13.200	23.99	23.90	23.81	23.72	23.63
13.450	23.54	23.45	23.36	23.27	23.18
13.700	23.08	22.99	22.90	22.80	22.70
13.950	22.60	22.51	22.41	22.32	22.23
14.200	22.14	22.05	21.97	21.88	21.80
14.450	21.72	21.64	21.56	21.48	21.40
14.700	21.32	21.24	21.17	21.09	21.02
14.950	20.94	20.87	20.79	20.71	20.63
15.200	20.55	20.48	20.40	20.33	20.25
15.450	20.18	20.11	20.04	19.97	19.90
15.700	19.83	19.76	19.70	19.63	19.56
15.950	19.50	19.43	19.37	19.31	19.24
16.200	19.18	19.12	19.06	19.00	18.94
16.450	18.88	18.82	18.76	18.70	18.64
16.700	18.57	18.51	18.45	18.39	18.33
16.950	18.26	18.21	18.15	18.09	18.03
17.200	17.97	17.91	17.86	17.80	17.75
17.450	17.69	17.64	17.58	17.53	17.47
17.700	17.42	17.37	17.32	17.27	17.21
17.950	17.16	17.11	17.06	17.01	16.96
18.200	16.91	16.86	16.81	16.77	16.72
18.450	16.67	16.62	16.58	16.53	16.48
18.700	16.44	16.39	16.34	16.29	16.23
18.950	16.18	16.13	16.08	16.03	15.98
19.200	15.93	15.88	15.83	15.78	15.74
19.450	15.69	15.64	15.59	15.55	15.50
19.700	15.45	15.41	15.36	15.31	15.27
19.950	15.22	15.18	15.13	15.09	15.04
20.200	15.00	14.95	14.91	14.87	14.82
20.450	14.78	14.74	14.69	14.65	14.61
20.700	14.56	14.52	14.48	14.43	14.39
20.950	14.35	14.31	14.27	14.22	14.18
21.200	14.14	14.10	14.06	14.02	13.97
21.450	13.93	13.89	13.85	13.81	13.76
21.700	13.72	13.67	13.62	13.58	13.53
21.950	13.49	13.44	13.40	13.35	13.31

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

Time (hours)	Flow (ft ³ /s)				
22.200	13.26	13.22	13.17	13.13	13.08
22.450	13.04	13.00	12.95	12.91	12.87
22.700	12.82	12.78	12.74	12.69	12.65
22.950	12.61	12.57	12.52	12.48	12.44
23.200	12.40	12.35	12.31	12.27	12.23
23.450	12.19	12.15	12.10	12.06	12.02
23.700	11.98	11.94	11.90	11.85	11.81
23.950	11.77	11.73	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Peak Discharge	78.63 ft ³ /s
Time to Peak	8.400 hours
Hydrograph Volume	48.566 ac-ft

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

Time (hours)	Flow (ft ³ /s)				
1.850	0.00	0.00	0.00	0.01	0.01
2.100	0.01	0.02	0.03	0.03	0.04
2.350	0.05	0.06	0.07	0.08	0.10
2.600	0.11	0.13	0.15	0.17	0.20
2.850	0.23	0.26	0.30	0.33	0.37
3.100	0.42	0.46	0.51	0.56	0.61
3.350	0.67	0.73	0.79	0.85	0.91
3.600	0.98	1.05	1.26	1.48	1.71
3.850	1.94	2.18	2.42	2.66	2.90
4.100	3.15	3.39	3.64	3.89	4.13
4.350	4.38	4.63	4.88	5.14	5.40
4.600	5.66	5.92	6.19	6.46	6.73
4.850	7.01	7.30	7.58	7.87	8.13
5.100	8.41	8.69	8.98	9.27	9.58
5.350	9.89	10.20	10.52	10.85	11.15
5.600	11.43	11.72	12.01	12.31	12.60
5.850	12.91	13.22	13.53	13.85	14.14
6.100	14.45	14.77	15.11	15.47	15.83
6.350	16.21	16.56	16.90	17.25	17.59
6.600	17.93	18.25	18.56	18.85	19.12
6.850	19.39	19.67	19.96	20.26	20.58
7.100	20.92	21.24	21.58	21.95	22.34
7.350	22.77	23.19	23.64	24.11	24.66
7.600	25.34	26.28	27.44	28.75	30.11
7.850	31.48	32.82	34.11	38.52	47.10
8.100	58.49	66.51	71.91	75.41	77.54
8.350	78.44	78.63	78.44	77.83	76.71
8.600	75.46	74.28	73.20	72.16	71.11
8.850	70.02	68.88	67.69	66.46	65.20
9.100	63.91	62.60	61.28	59.88	58.46
9.350	57.07	55.71	54.38	53.09	51.85
9.600	50.70	49.67	48.77	47.96	47.21
9.850	46.51	45.86	45.23	44.63	44.06
10.100	43.49	42.93	42.60	42.33	42.05
10.350	41.76	41.48	41.19	40.91	40.63
10.600	40.37	40.12	39.89	39.67	39.46
10.850	39.24	39.03	38.81	38.59	38.36

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
11.100	38.14	37.91	37.67	37.44	37.20
11.350	36.96	36.72	36.47	36.22	35.97
11.600	35.72	35.45	35.18	34.90	34.64
11.850	34.59	34.54	34.48	34.43	34.37
12.100	34.32	34.26	34.21	34.16	34.10
12.350	34.05	34.00	33.96	33.91	33.87
12.600	33.83	33.78	33.74	33.68	33.63
12.850	33.57	33.52	33.46	33.41	33.35
13.100	33.30	33.25	33.20	33.15	33.10
13.350	33.05	33.00	32.94	32.88	32.83
13.600	32.77	32.71	32.65	32.59	32.52
13.850	32.46	32.40	32.33	32.27	32.21
14.100	32.15	32.09	32.03	31.97	31.91
14.350	31.85	31.79	31.73	31.67	31.61
14.600	31.55	31.49	31.43	31.37	31.31
14.850	31.25	31.18	31.12	31.06	31.00
15.100	30.94	30.88	30.82	30.76	30.70
15.350	30.64	30.58	30.52	30.46	30.40
15.600	30.34	30.28	30.22	30.16	30.10
15.850	30.04	29.98	29.92	29.86	29.79
16.100	29.73	29.67	29.60	29.54	29.48
16.350	29.42	29.36	29.29	29.23	29.17
16.600	29.11	29.05	28.98	28.92	28.86
16.850	28.80	28.74	28.68	28.62	28.56
17.100	28.50	28.43	28.37	28.30	28.24
17.350	28.17	28.11	28.04	27.98	27.91
17.600	27.85	27.78	27.72	27.65	27.59
17.850	27.53	27.46	27.40	27.33	27.27
18.100	27.21	27.14	27.08	27.01	26.95
18.350	26.89	26.83	26.76	26.70	26.63
18.600	26.56	26.49	26.42	26.35	26.29
18.850	26.22	26.15	26.08	26.02	25.95
19.100	25.88	25.81	25.75	25.68	25.61
19.350	25.55	25.48	25.41	25.35	25.28
19.600	25.22	25.15	25.08	25.02	24.95
19.850	24.89	24.82	24.75	24.67	24.60
20.100	24.53	24.46	24.39	24.32	24.25
20.350	24.19	24.12	24.05	23.98	23.91
20.600	23.84	23.77	23.70	23.63	23.57
20.850	23.50	23.43	23.36	23.30	23.23
21.100	23.16	23.09	23.03	22.96	22.89
21.350	22.81	22.74	22.67	22.60	22.52

Brunswick Site

Subsection: Diverted Hydrograph

Label: Outlet-1

Return Event: 10 years

Storm Event: Brunswick NC 10-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
21.600	22.45	22.38	22.31	22.24	22.17
21.850	22.10	22.03	21.96	21.89	21.82
22.100	21.75	21.68	21.61	21.54	21.47
22.350	21.40	21.33	21.26	21.19	21.13
22.600	21.06	20.99	20.92	20.85	20.77
22.850	20.70	20.63	20.55	20.48	20.40
23.100	20.33	20.26	20.19	20.11	20.04
23.350	19.97	19.90	19.83	19.76	19.69
23.600	19.61	19.54	19.47	19.40	19.33
23.850	19.26	19.19	19.12	19.05	(N/A)

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Peak Discharge	152.78 ft ³ /s
Time to Peak	8.200 hours
Hydrograph Volume	64.988 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.550	0.00	0.00	0.00	0.01	0.01
1.800	0.02	0.03	0.04	0.05	0.06
2.050	0.07	0.09	0.10	0.12	0.15
2.300	0.18	0.21	0.25	0.29	0.34
2.550	0.39	0.45	0.51	0.58	0.65
2.800	0.72	0.80	0.88	0.97	1.06
3.050	1.30	1.57	1.84	2.10	2.37
3.300	2.64	2.91	3.19	3.46	3.74
3.550	4.02	4.31	4.61	4.91	5.22
3.800	5.53	5.86	6.18	6.51	6.84
4.050	7.18	7.51	7.84	8.14	8.44
4.300	8.74	9.04	9.35	9.66	9.98
4.550	10.30	10.62	10.95	11.24	11.54
4.800	11.85	12.16	12.47	12.80	13.13
5.050	13.47	13.82	14.13	14.46	14.79
5.300	15.13	15.48	15.84	16.21	16.55
5.550	16.88	17.21	17.55	17.88	18.22
5.800	18.56	18.89	19.21	19.54	19.87
6.050	20.22	20.58	20.96	21.33	21.71
6.300	22.10	22.50	22.91	23.30	23.68
6.550	24.06	24.44	24.80	25.13	25.44
6.800	25.76	26.07	26.40	26.73	27.05
7.050	27.38	27.73	28.11	28.49	28.88
7.300	29.30	29.74	30.20	30.68	31.18
7.550	31.76	32.47	33.45	34.71	42.21
7.800	58.22	73.28	83.92	95.94	112.05
8.050	130.47	143.69	150.93	152.78	150.41
8.300	146.09	140.73	134.69	128.34	121.96
8.550	115.80	111.08	107.60	104.54	101.78
8.800	99.18	96.67	94.21	91.78	89.39
9.050	88.07	86.90	85.67	84.41	83.10
9.300	81.77	80.42	79.06	77.43	75.29
9.550	73.26	71.37	69.67	68.15	66.78
9.800	65.51	64.34	63.23	62.19	61.21
10.050	60.20	59.22	58.27	57.35	56.46
10.300	55.61	54.81	54.04	53.32	52.65
10.550	52.02	51.45	50.95	50.53	50.14

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
10.800	49.78	49.43	49.08	48.73	48.38
11.050	48.02	47.67	47.31	46.95	46.59
11.300	46.22	45.85	45.48	45.11	44.74
11.550	44.36	43.98	43.57	43.15	42.77
11.800	42.57	42.36	42.16	41.95	41.75
12.050	41.55	41.35	41.17	40.99	40.83
12.300	40.68	40.55	40.43	40.33	40.25
12.550	40.19	40.12	40.03	39.91	39.78
12.800	39.64	39.49	39.35	39.20	39.06
13.050	38.92	38.80	38.71	38.64	38.57
13.300	38.50	38.43	38.35	38.25	38.15
13.550	38.04	37.92	37.80	37.68	37.55
13.800	37.41	37.28	37.15	37.03	36.90
14.050	36.78	36.66	36.56	36.46	36.36
14.300	36.27	36.18	36.10	36.01	35.93
14.550	35.85	35.76	35.68	35.60	35.52
14.800	35.44	35.36	35.28	35.20	35.12
15.050	35.04	34.97	34.89	34.81	34.74
15.300	34.66	34.64	34.62	34.60	34.59
15.550	34.57	34.55	34.54	34.52	34.50
15.800	34.48	34.46	34.44	34.42	34.40
16.050	34.37	34.35	34.33	34.31	34.28
16.300	34.26	34.23	34.21	34.18	34.15
16.550	34.13	34.10	34.07	34.04	34.01
16.800	33.98	33.95	33.92	33.89	33.86
17.050	33.83	33.80	33.76	33.73	33.70
17.300	33.66	33.63	33.59	33.56	33.52
17.550	33.49	33.45	33.42	33.38	33.34
17.800	33.30	33.27	33.23	33.19	33.15
18.050	33.10	33.06	33.02	32.97	32.93
18.300	32.88	32.84	32.80	32.75	32.70
18.550	32.66	32.61	32.57	32.52	32.47
18.800	32.42	32.38	32.33	32.28	32.23
19.050	32.18	32.13	32.08	32.03	31.98
19.300	31.93	31.88	31.83	31.78	31.72
19.550	31.67	31.62	31.56	31.51	31.45
19.800	31.40	31.34	31.28	31.22	31.17
20.050	31.11	31.05	30.99	30.93	30.88
20.300	30.82	30.76	30.70	30.64	30.58
20.550	30.52	30.46	30.40	30.34	30.28
20.800	30.22	30.16	30.10	30.03	29.97
21.050	29.90	29.84	29.77	29.70	29.64

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

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

Time (hours)	Flow (ft ³ /s)				
21.300	29.57	29.50	29.44	29.37	29.30
21.550	29.24	29.17	29.10	29.03	28.97
21.800	28.90	28.83	28.76	28.69	28.63
22.050	28.56	28.49	28.42	28.35	28.27
22.300	28.20	28.12	28.05	27.97	27.90
22.550	27.82	27.75	27.67	27.60	27.52
22.800	27.45	27.37	27.30	27.22	27.15
23.050	27.07	27.00	26.92	26.85	26.77
23.300	26.69	26.61	26.53	26.45	26.36
23.550	26.28	26.20	26.12	26.03	25.95
23.800	25.87	25.79	25.70	25.62	25.54

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 100 years
Storm Event: Brunswik NC 100-yr

Peak Discharge	201.21 ft ³ /s
Time to Peak	8.150 hours
Hydrograph Volume	74.702 ac-ft

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

Time (hours)	Flow (ft ³ /s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)
1.450	0.00	0.00	0.01	0.01	0.02
1.700	0.03	0.04	0.05	0.06	0.08
1.950	0.10	0.12	0.14	0.17	0.21
2.200	0.25	0.30	0.35	0.41	0.48
2.450	0.55	0.63	0.71	0.80	0.89
2.700	0.99	1.15	1.45	1.76	2.07
2.950	2.38	2.70	3.01	3.33	3.65
3.200	3.97	4.29	4.60	4.92	5.24
3.450	5.56	5.89	6.22	6.55	6.90
3.700	7.26	7.62	7.97	8.31	8.65
3.950	8.99	9.35	9.70	10.06	10.42
4.200	10.77	11.11	11.42	11.74	12.06
4.450	12.39	12.73	13.06	13.41	13.76
4.700	14.07	14.39	14.71	15.04	15.38
4.950	15.72	16.08	16.43	16.76	17.10
5.200	17.45	17.81	18.18	18.55	18.92
5.450	19.27	19.62	19.98	20.35	20.71
5.700	21.06	21.40	21.74	22.09	22.44
5.950	22.80	23.16	23.51	23.88	24.27
6.200	24.68	25.08	25.48	25.89	26.31
6.450	26.74	27.13	27.52	27.91	28.28
6.700	28.62	28.95	29.27	29.60	29.93
6.950	30.27	30.60	30.96	31.33	31.72
7.200	32.11	32.53	32.97	33.42	33.89
7.450	34.39	36.12	39.24	43.61	54.86
7.700	67.94	80.49	90.27	109.69	133.30
7.950	155.58	175.66	190.56	199.36	201.21
8.200	197.28	189.79	180.62	170.73	160.75
8.450	151.02	142.72	135.12	128.29	122.55
8.700	117.82	113.79	111.04	108.51	105.99
8.950	103.47	100.96	98.46	95.97	93.52
9.200	91.11	88.89	87.78	86.61	85.40
9.450	84.17	82.91	81.66	80.43	79.28
9.700	78.21	76.64	75.16	73.78	72.49
9.950	71.27	70.11	69.01	67.94	66.91
10.200	65.90	64.91	63.97	63.06	62.20
10.450	61.39	60.58	59.80	59.10	58.49

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
10.700	57.95	57.48	57.03	56.59	56.16
10.950	55.73	55.31	54.88	54.46	54.03
11.200	53.60	53.17	52.75	52.31	51.88
11.450	51.45	51.01	50.58	50.13	49.66
11.700	49.17	48.68	48.20	47.74	47.30
11.950	46.89	46.50	46.13	45.80	45.50
12.200	45.23	45.00	44.81	44.66	44.54
12.450	44.47	44.44	44.43	44.41	44.34
12.700	44.20	44.02	43.82	43.61	43.40
12.950	43.21	43.02	42.85	42.77	42.73
13.200	42.72	42.71	42.69	42.66	42.62
13.450	42.57	42.50	42.42	42.33	42.23
13.700	42.13	42.01	41.90	41.78	41.67
13.950	41.55	41.43	41.32	41.21	41.11
14.200	41.02	40.93	40.85	40.77	40.69
14.450	40.61	40.53	40.45	40.36	40.28
14.700	40.20	40.12	40.04	39.96	39.88
14.950	39.79	39.71	39.63	39.55	39.47
15.200	39.39	39.31	39.23	39.15	39.07
15.450	38.99	38.91	38.82	38.74	38.66
15.700	38.57	38.49	38.41	38.33	38.25
15.950	38.17	38.09	38.01	37.92	37.84
16.200	37.76	37.67	37.59	37.51	37.43
16.450	37.34	37.26	37.18	37.09	37.01
16.700	36.93	36.84	36.76	36.68	36.60
16.950	36.51	36.43	36.35	36.26	36.18
17.200	36.10	36.01	35.93	35.84	35.76
17.450	35.67	35.59	35.50	35.42	35.34
17.700	35.25	35.17	35.09	35.01	34.92
17.950	34.84	34.75	34.66	34.63	34.62
18.200	34.60	34.58	34.56	34.54	34.52
18.450	34.50	34.48	34.46	34.43	34.41
18.700	34.39	34.36	34.34	34.31	34.28
18.950	34.26	34.23	34.20	34.17	34.14
19.200	34.11	34.08	34.05	34.02	33.98
19.450	33.95	33.92	33.88	33.85	33.81
19.700	33.78	33.74	33.70	33.67	33.63
19.950	33.59	33.55	33.51	33.47	33.43
20.200	33.39	33.35	33.31	33.26	33.22
20.450	33.18	33.13	33.08	33.04	32.99
20.700	32.94	32.89	32.84	32.79	32.74
20.950	32.69	32.64	32.59	32.53	32.48

Brunswick Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
21.200	32.43	32.37	32.32	32.27	32.21
21.450	32.16	32.10	32.05	31.99	31.93
21.700	31.88	31.82	31.76	31.71	31.65
21.950	31.59	31.52	31.46	31.40	31.34
22.200	31.27	31.21	31.14	31.08	31.01
22.450	30.95	30.88	30.82	30.75	30.69
22.700	30.62	30.55	30.49	30.42	30.35
22.950	30.29	30.22	30.15	30.08	30.01
23.200	29.94	29.86	29.79	29.71	29.64
23.450	29.57	29.49	29.42	29.34	29.27
23.700	29.19	29.12	29.04	28.97	28.89
23.950	28.81	28.74	(N/A)	(N/A)	(N/A)

Brunswick Site

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

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	2,725.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,725.00	0.00	0.000	0.650	0.00	0.00	0.00
2,725.50	1.06	0.334	0.685	0.00	1.06	162.53
2,726.00	4.36	0.685	0.720	0.00	4.36	335.76
2,726.50	7.78	1.053	0.751	0.00	7.78	517.22
2,727.00	10.94	1.436	0.784	0.00	10.94	706.11
2,727.50	13.80	1.836	0.816	0.00	13.80	902.57
2,728.00	16.38	2.253	0.850	0.00	16.38	1,106.79
2,728.50	18.74	2.686	0.884	0.00	18.74	1,318.95
2,729.00	20.91	3.137	0.919	0.00	20.91	1,539.23
2,729.50	22.95	3.605	0.954	0.00	22.95	1,767.85
2,730.00	24.88	4.091	0.990	0.00	24.88	2,004.99
2,730.50	26.71	4.594	1.022	0.00	26.71	2,250.23
2,731.00	28.43	5.113	1.054	0.00	28.43	2,503.10
2,731.50	30.06	5.648	1.087	0.00	30.06	2,763.75
2,732.00	31.64	6.200	1.120	0.00	31.64	3,032.34
2,732.50	33.17	6.769	1.157	0.00	33.17	3,309.33
2,733.00	34.65	7.357	1.194	0.00	34.65	3,595.19
2,733.50	42.81	7.963	1.232	0.00	42.81	3,896.82
2,734.00	60.98	8.588	1.270	0.00	60.98	4,217.68
2,734.50	78.14	9.232	1.307	0.00	78.14	4,546.61
2,735.00	89.03	9.895	1.344	0.00	89.03	4,878.22
2,735.50	113.23	10.576	1.382	0.00	113.23	5,232.22
2,736.00	148.98	11.277	1.420	0.00	148.98	5,606.96
2,736.50	192.01	11.997	1.462	0.00	192.01	5,998.65
2,737.00	236.66	12.739	1.504	0.00	236.66	6,402.10
2,737.50	255.60	13.501	1.547	0.00	255.60	6,790.13
2,738.00	272.35	14.285	1.590	0.00	272.35	7,186.40
2,738.50	287.68	15.090	1.629	0.00	287.68	7,591.25
2,739.00	301.76	15.915	1.669	0.00	301.76	8,004.42

Brunswick Site

Subsection: Elevation-Volume-Flow Table (Pond)

Label: PO-1

Return Event: 2 years

Storm Event: Brunswick NC 2-yr

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,739.50	314.73	16.759	1.709	0.00	314.73	8,426.16
2,740.00	326.81	17.624	1.750	0.00	326.81	8,856.80

Brunswick Site

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

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	2,725.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,725.00	0.00	0.000	0.650	0.00	0.00	0.00
2,725.50	1.06	0.334	0.685	0.00	1.06	162.53
2,726.00	4.36	0.685	0.720	0.00	4.36	335.76
2,726.50	7.78	1.053	0.751	0.00	7.78	517.22
2,727.00	10.94	1.436	0.784	0.00	10.94	706.11
2,727.50	13.80	1.836	0.816	0.00	13.80	902.57
2,728.00	16.38	2.253	0.850	0.00	16.38	1,106.79
2,728.50	18.74	2.686	0.884	0.00	18.74	1,318.95
2,729.00	20.91	3.137	0.919	0.00	20.91	1,539.23
2,729.50	22.95	3.605	0.954	0.00	22.95	1,767.85
2,730.00	24.88	4.091	0.990	0.00	24.88	2,004.99
2,730.50	26.71	4.594	1.022	0.00	26.71	2,250.23
2,731.00	28.43	5.113	1.054	0.00	28.43	2,503.10
2,731.50	30.06	5.648	1.087	0.00	30.06	2,763.75
2,732.00	31.64	6.200	1.120	0.00	31.64	3,032.34
2,732.50	33.17	6.769	1.157	0.00	33.17	3,309.33
2,733.00	34.65	7.357	1.194	0.00	34.65	3,595.19
2,733.50	42.81	7.963	1.232	0.00	42.81	3,896.82
2,734.00	60.98	8.588	1.270	0.00	60.98	4,217.68
2,734.50	78.14	9.232	1.307	0.00	78.14	4,546.61
2,735.00	89.03	9.895	1.344	0.00	89.03	4,878.22
2,735.50	113.23	10.576	1.382	0.00	113.23	5,232.22
2,736.00	148.98	11.277	1.420	0.00	148.98	5,606.96
2,736.50	192.01	11.997	1.462	0.00	192.01	5,998.65
2,737.00	236.66	12.739	1.504	0.00	236.66	6,402.10
2,737.50	255.60	13.501	1.547	0.00	255.60	6,790.13
2,738.00	272.35	14.285	1.590	0.00	272.35	7,186.40
2,738.50	287.68	15.090	1.629	0.00	287.68	7,591.25
2,739.00	301.76	15.915	1.669	0.00	301.76	8,004.42

Brunswick Site

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

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,739.50	314.73	16.759	1.709	0.00	314.73	8,426.16
2,740.00	326.81	17.624	1.750	0.00	326.81	8,856.80

Brunswick Site

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

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	2,725.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,725.00	0.00	0.000	0.650	0.00	0.00	0.00
2,725.50	1.06	0.334	0.685	0.00	1.06	162.53
2,726.00	4.36	0.685	0.720	0.00	4.36	335.76
2,726.50	7.78	1.053	0.751	0.00	7.78	517.22
2,727.00	10.94	1.436	0.784	0.00	10.94	706.11
2,727.50	13.80	1.836	0.816	0.00	13.80	902.57
2,728.00	16.38	2.253	0.850	0.00	16.38	1,106.79
2,728.50	18.74	2.686	0.884	0.00	18.74	1,318.95
2,729.00	20.91	3.137	0.919	0.00	20.91	1,539.23
2,729.50	22.95	3.605	0.954	0.00	22.95	1,767.85
2,730.00	24.88	4.091	0.990	0.00	24.88	2,004.99
2,730.50	26.71	4.594	1.022	0.00	26.71	2,250.23
2,731.00	28.43	5.113	1.054	0.00	28.43	2,503.10
2,731.50	30.06	5.648	1.087	0.00	30.06	2,763.75
2,732.00	31.64	6.200	1.120	0.00	31.64	3,032.34
2,732.50	33.17	6.769	1.157	0.00	33.17	3,309.33
2,733.00	34.65	7.357	1.194	0.00	34.65	3,595.19
2,733.50	42.81	7.963	1.232	0.00	42.81	3,896.82
2,734.00	60.98	8.588	1.270	0.00	60.98	4,217.68
2,734.50	78.14	9.232	1.307	0.00	78.14	4,546.61
2,735.00	89.03	9.895	1.344	0.00	89.03	4,878.22
2,735.50	113.23	10.576	1.382	0.00	113.23	5,232.22
2,736.00	148.98	11.277	1.420	0.00	148.98	5,606.96
2,736.50	192.01	11.997	1.462	0.00	192.01	5,998.65
2,737.00	236.66	12.739	1.504	0.00	236.66	6,402.10
2,737.50	255.60	13.501	1.547	0.00	255.60	6,790.13
2,738.00	272.35	14.285	1.590	0.00	272.35	7,186.40
2,738.50	287.68	15.090	1.629	0.00	287.68	7,591.25
2,739.00	301.76	15.915	1.669	0.00	301.76	8,004.42

Brunswick Site

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

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,739.50	314.73	16.759	1.709	0.00	314.73	8,426.16
2,740.00	326.81	17.624	1.750	0.00	326.81	8,856.80

Brunswick Site

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

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	2,725.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,725.00	0.00	0.000	0.650	0.00	0.00	0.00
2,725.50	1.06	0.334	0.685	0.00	1.06	162.53
2,726.00	4.36	0.685	0.720	0.00	4.36	335.76
2,726.50	7.78	1.053	0.751	0.00	7.78	517.22
2,727.00	10.94	1.436	0.784	0.00	10.94	706.11
2,727.50	13.80	1.836	0.816	0.00	13.80	902.57
2,728.00	16.38	2.253	0.850	0.00	16.38	1,106.79
2,728.50	18.74	2.686	0.884	0.00	18.74	1,318.95
2,729.00	20.91	3.137	0.919	0.00	20.91	1,539.23
2,729.50	22.95	3.605	0.954	0.00	22.95	1,767.85
2,730.00	24.88	4.091	0.990	0.00	24.88	2,004.99
2,730.50	26.71	4.594	1.022	0.00	26.71	2,250.23
2,731.00	28.43	5.113	1.054	0.00	28.43	2,503.10
2,731.50	30.06	5.648	1.087	0.00	30.06	2,763.75
2,732.00	31.64	6.200	1.120	0.00	31.64	3,032.34
2,732.50	33.17	6.769	1.157	0.00	33.17	3,309.33
2,733.00	34.65	7.357	1.194	0.00	34.65	3,595.19
2,733.50	42.81	7.963	1.232	0.00	42.81	3,896.82
2,734.00	60.98	8.588	1.270	0.00	60.98	4,217.68
2,734.50	78.14	9.232	1.307	0.00	78.14	4,546.61
2,735.00	89.03	9.895	1.344	0.00	89.03	4,878.22
2,735.50	113.23	10.576	1.382	0.00	113.23	5,232.22
2,736.00	148.98	11.277	1.420	0.00	148.98	5,606.96
2,736.50	192.01	11.997	1.462	0.00	192.01	5,998.65
2,737.00	236.66	12.739	1.504	0.00	236.66	6,402.10
2,737.50	255.60	13.501	1.547	0.00	255.60	6,790.13
2,738.00	272.35	14.285	1.590	0.00	272.35	7,186.40
2,738.50	287.68	15.090	1.629	0.00	287.68	7,591.25
2,739.00	301.76	15.915	1.669	0.00	301.76	8,004.42

Brunswick Site

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

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,739.50	314.73	16.759	1.709	0.00	314.73	8,426.16
2,740.00	326.81	17.624	1.750	0.00	326.81	8,856.80

Brunswick Site

Subsection: Level Pool Pond Routing Summary
 Label: PO-1 (IN)

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	2,725.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	93.31 ft ³ /s	Time to Peak (Flow, In)	8.000 hours
Flow (Peak Outlet)	30.74 ft ³ /s	Time to Peak (Flow, Outlet)	9.200 hours

Elevation (Water Surface, Peak)	2,731.72 ft
Volume (Peak)	5.883 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	31.197 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	29.649 ac-ft
Volume (Retained)	1.499 ac-ft
Volume (Unrouted)	-0.049 ac-ft
Error (Mass Balance)	0.2 %

Brunswick Site

Subsection: Level Pool Pond Routing Summary
 Label: PO-1 (IN)

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Infiltration	
Infiltration Method (Computed)	No Infiltration

Initial Conditions	
Elevation (Water Surface, Initial)	2,725.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	157.48 ft ³ /s	Time to Peak (Flow, In)	8.000 hours
Flow (Peak Outlet)	78.63 ft ³ /s	Time to Peak (Flow, Outlet)	8.400 hours

Elevation (Water Surface, Peak)	2,734.52 ft
Volume (Peak)	9.262 ac-ft

Mass Balance (ac-ft)	
Volume (Initial)	0.000 ac-ft
Volume (Total Inflow)	51.318 ac-ft
Volume (Total Infiltration)	0.000 ac-ft
Volume (Total Outlet Outflow)	48.566 ac-ft
Volume (Retained)	2.674 ac-ft
Volume (Unrouted)	-0.078 ac-ft
Error (Mass Balance)	0.2 %

Brunswick Site

Subsection: Level Pool Pond Routing Summary
 Label: PO-1 (IN)

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Infiltration			
Infiltration Method (Computed)	No Infiltration		
Initial Conditions			
Elevation (Water Surface, Initial)	2,725.00 ft		
Volume (Initial)	0.000 ac-ft		
Flow (Initial Outlet)	0.00 ft ³ /s		
Flow (Initial Infiltration)	0.00 ft ³ /s		
Flow (Initial, Total)	0.00 ft ³ /s		
Time Increment	0.050 hours		
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	213.78 ft ³ /s	Time to Peak (Flow, In)	8.000 hours
Flow (Peak Outlet)	152.78 ft ³ /s	Time to Peak (Flow, Outlet)	8.200 hours
Peak Conditions			
Elevation (Water Surface, Peak)	2,736.04 ft		
Volume (Peak)	11.340 ac-ft		
Mass Balance (ac-ft)			
Volume (Initial)	0.000 ac-ft		
Volume (Total Inflow)	69.260 ac-ft		
Volume (Total Infiltration)	0.000 ac-ft		
Volume (Total Outlet Outflow)	64.988 ac-ft		
Volume (Retained)	4.166 ac-ft		
Volume (Unrouted)	-0.106 ac-ft		
Error (Mass Balance)	0.2 %		

Brunswick Site

Subsection: Level Pool Pond Routing Summary
 Label: PO-1 (IN)

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Infiltration			
Infiltration Method (Computed)	No Infiltration		
Initial Conditions			
Elevation (Water Surface, Initial)	2,725.00 ft		
Volume (Initial)	0.000 ac-ft		
Flow (Initial Outlet)	0.00 ft ³ /s		
Flow (Initial Infiltration)	0.00 ft ³ /s		
Flow (Initial, Total)	0.00 ft ³ /s		
Time Increment	0.050 hours		
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	247.08 ft ³ /s	Time to Peak (Flow, In)	7.950 hours
Flow (Peak Outlet)	201.21 ft ³ /s	Time to Peak (Flow, Outlet)	8.150 hours
Elevation (Water Surface, Peak)	2,736.60 ft		
Volume (Peak)	12.148 ac-ft		
Mass Balance (ac-ft)			
Volume (Initial)	0.000 ac-ft		
Volume (Total Inflow)	79.918 ac-ft		
Volume (Total Infiltration)	0.000 ac-ft		
Volume (Total Outlet Outflow)	74.702 ac-ft		
Volume (Retained)	5.097 ac-ft		
Volume (Unrouted)	-0.118 ac-ft		
Error (Mass Balance)	0.1 %		

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

Peak Discharge	30.74 ft ³ /s
Time to Peak	9.200 hours
Hydrograph Volume	29.649 ac-ft

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

Time (hours)	Flow (ft ³ /s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)
2.450	0.00	0.00	0.00	0.00	0.01
2.700	0.01	0.01	0.02	0.02	0.02
2.950	0.03	0.03	0.04	0.05	0.05
3.200	0.06	0.07	0.08	0.08	0.09
3.450	0.10	0.11	0.12	0.14	0.15
3.700	0.17	0.19	0.21	0.23	0.26
3.950	0.29	0.32	0.35	0.38	0.41
4.200	0.45	0.49	0.53	0.57	0.61
4.450	0.66	0.71	0.75	0.81	0.86
4.700	0.91	0.97	1.03	1.15	1.33
4.950	1.51	1.70	1.89	2.09	2.28
5.200	2.48	2.69	2.90	3.11	3.32
5.450	3.54	3.76	3.98	4.20	4.42
5.700	4.64	4.86	5.08	5.31	5.54
5.950	5.77	6.01	6.25	6.51	6.77
6.200	7.05	7.34	7.63	7.91	8.18
6.450	8.46	8.73	9.01	9.28	9.54
6.700	9.78	10.02	10.26	10.50	10.75
6.950	11.00	11.23	11.48	11.73	12.01
7.200	12.30	12.62	12.95	13.32	13.70
7.450	14.08	14.47	14.92	15.53	16.40
7.700	17.42	18.63	19.84	21.11	22.31
7.950	23.50	24.63	25.66	26.59	27.32
8.200	27.92	28.40	28.77	29.08	29.34
8.450	29.55	29.72	29.86	29.98	30.10
8.700	30.21	30.31	30.40	30.49	30.56
8.950	30.61	30.66	30.70	30.72	30.74
9.200	30.74	30.73	30.72	30.70	30.67
9.450	30.63	30.58	30.53	30.48	30.43
9.700	30.38	30.33	30.28	30.22	30.17
9.950	30.11	30.05	29.99	29.92	29.85
10.200	29.77	29.70	29.62	29.54	29.46
10.450	29.37	29.29	29.21	29.12	29.04
10.700	28.96	28.89	28.81	28.73	28.65
10.950	28.57	28.49	28.40	28.31	28.22
11.200	28.13	28.03	27.94	27.84	27.74
11.450	27.64	27.55	27.45	27.34	27.24

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 2 years
 Storm Event: Brunswick NC 2-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
11.700	27.13	27.02	26.92	26.81	26.70
11.950	26.58	26.46	26.34	26.23	26.11
12.200	26.00	25.89	25.78	25.68	25.58
12.450	25.48	25.38	25.29	25.20	25.10
12.700	25.01	24.91	24.80	24.70	24.59
12.950	24.48	24.38	24.27	24.17	24.08
13.200	23.99	23.90	23.81	23.72	23.63
13.450	23.54	23.45	23.36	23.27	23.18
13.700	23.08	22.99	22.90	22.80	22.70
13.950	22.60	22.51	22.41	22.32	22.23
14.200	22.14	22.05	21.97	21.88	21.80
14.450	21.72	21.64	21.56	21.48	21.40
14.700	21.32	21.24	21.17	21.09	21.02
14.950	20.94	20.87	20.79	20.71	20.63
15.200	20.55	20.48	20.40	20.33	20.25
15.450	20.18	20.11	20.04	19.97	19.90
15.700	19.83	19.76	19.70	19.63	19.56
15.950	19.50	19.43	19.37	19.31	19.24
16.200	19.18	19.12	19.06	19.00	18.94
16.450	18.88	18.82	18.76	18.70	18.64
16.700	18.57	18.51	18.45	18.39	18.33
16.950	18.26	18.21	18.15	18.09	18.03
17.200	17.97	17.91	17.86	17.80	17.75
17.450	17.69	17.64	17.58	17.53	17.47
17.700	17.42	17.37	17.32	17.27	17.21
17.950	17.16	17.11	17.06	17.01	16.96
18.200	16.91	16.86	16.81	16.77	16.72
18.450	16.67	16.62	16.58	16.53	16.48
18.700	16.44	16.39	16.34	16.29	16.23
18.950	16.18	16.13	16.08	16.03	15.98
19.200	15.93	15.88	15.83	15.78	15.74
19.450	15.69	15.64	15.59	15.55	15.50
19.700	15.45	15.41	15.36	15.31	15.27
19.950	15.22	15.18	15.13	15.09	15.04
20.200	15.00	14.95	14.91	14.87	14.82
20.450	14.78	14.74	14.69	14.65	14.61
20.700	14.56	14.52	14.48	14.43	14.39
20.950	14.35	14.31	14.27	14.22	14.18
21.200	14.14	14.10	14.06	14.02	13.97
21.450	13.93	13.89	13.85	13.81	13.76
21.700	13.72	13.67	13.62	13.58	13.53
21.950	13.49	13.44	13.40	13.35	13.31

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
Label: PO-1 (OUT)

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

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

Time (hours)	Flow (ft ³ /s)				
22.200	13.26	13.22	13.17	13.13	13.08
22.450	13.04	13.00	12.95	12.91	12.87
22.700	12.82	12.78	12.74	12.69	12.65
22.950	12.61	12.57	12.52	12.48	12.44
23.200	12.40	12.35	12.31	12.27	12.23
23.450	12.19	12.15	12.10	12.06	12.02
23.700	11.98	11.94	11.90	11.85	11.81
23.950	11.77	11.73	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

Peak Discharge	78.63 ft ³ /s
Time to Peak	8.400 hours
Hydrograph Volume	48.566 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.850	0.00	0.00	0.00	0.01	0.01
2.100	0.01	0.02	0.03	0.03	0.04
2.350	0.05	0.06	0.07	0.08	0.10
2.600	0.11	0.13	0.15	0.17	0.20
2.850	0.23	0.26	0.30	0.33	0.37
3.100	0.42	0.46	0.51	0.56	0.61
3.350	0.67	0.73	0.79	0.85	0.91
3.600	0.98	1.05	1.26	1.48	1.71
3.850	1.94	2.18	2.42	2.66	2.90
4.100	3.15	3.39	3.64	3.89	4.13
4.350	4.38	4.63	4.88	5.14	5.40
4.600	5.66	5.92	6.19	6.46	6.73
4.850	7.01	7.30	7.58	7.87	8.13
5.100	8.41	8.69	8.98	9.27	9.58
5.350	9.89	10.20	10.52	10.85	11.15
5.600	11.43	11.72	12.01	12.31	12.60
5.850	12.91	13.22	13.53	13.85	14.14
6.100	14.45	14.77	15.11	15.47	15.83
6.350	16.21	16.56	16.90	17.25	17.59
6.600	17.93	18.25	18.56	18.85	19.12
6.850	19.39	19.67	19.96	20.26	20.58
7.100	20.92	21.24	21.58	21.95	22.34
7.350	22.77	23.19	23.64	24.11	24.66
7.600	25.34	26.28	27.44	28.75	30.11
7.850	31.48	32.82	34.11	38.52	47.10
8.100	58.49	66.51	71.91	75.41	77.54
8.350	78.44	78.63	78.44	77.83	76.71
8.600	75.46	74.28	73.20	72.16	71.11
8.850	70.02	68.88	67.69	66.46	65.20
9.100	63.91	62.60	61.28	59.88	58.46
9.350	57.07	55.71	54.38	53.09	51.85
9.600	50.70	49.67	48.77	47.96	47.21
9.850	46.51	45.86	45.23	44.63	44.06
10.100	43.49	42.93	42.60	42.33	42.05
10.350	41.76	41.48	41.19	40.91	40.63
10.600	40.37	40.12	39.89	39.67	39.46
10.850	39.24	39.03	38.81	38.59	38.36

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Brunswick NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
11.100	38.14	37.91	37.67	37.44	37.20
11.350	36.96	36.72	36.47	36.22	35.97
11.600	35.72	35.45	35.18	34.90	34.64
11.850	34.59	34.54	34.48	34.43	34.37
12.100	34.32	34.26	34.21	34.16	34.10
12.350	34.05	34.00	33.96	33.91	33.87
12.600	33.83	33.78	33.74	33.68	33.63
12.850	33.57	33.52	33.46	33.41	33.35
13.100	33.30	33.25	33.20	33.15	33.10
13.350	33.05	33.00	32.94	32.88	32.83
13.600	32.77	32.71	32.65	32.59	32.52
13.850	32.46	32.40	32.33	32.27	32.21
14.100	32.15	32.09	32.03	31.97	31.91
14.350	31.85	31.79	31.73	31.67	31.61
14.600	31.55	31.49	31.43	31.37	31.31
14.850	31.25	31.18	31.12	31.06	31.00
15.100	30.94	30.88	30.82	30.76	30.70
15.350	30.64	30.58	30.52	30.46	30.40
15.600	30.34	30.28	30.22	30.16	30.10
15.850	30.04	29.98	29.92	29.86	29.79
16.100	29.73	29.67	29.60	29.54	29.48
16.350	29.42	29.36	29.29	29.23	29.17
16.600	29.11	29.05	28.98	28.92	28.86
16.850	28.80	28.74	28.68	28.62	28.56
17.100	28.50	28.43	28.37	28.30	28.24
17.350	28.17	28.11	28.04	27.98	27.91
17.600	27.85	27.78	27.72	27.65	27.59
17.850	27.53	27.46	27.40	27.33	27.27
18.100	27.21	27.14	27.08	27.01	26.95
18.350	26.89	26.83	26.76	26.70	26.63
18.600	26.56	26.49	26.42	26.35	26.29
18.850	26.22	26.15	26.08	26.02	25.95
19.100	25.88	25.81	25.75	25.68	25.61
19.350	25.55	25.48	25.41	25.35	25.28
19.600	25.22	25.15	25.08	25.02	24.95
19.850	24.89	24.82	24.75	24.67	24.60
20.100	24.53	24.46	24.39	24.32	24.25
20.350	24.19	24.12	24.05	23.98	23.91
20.600	23.84	23.77	23.70	23.63	23.57
20.850	23.50	23.43	23.36	23.30	23.23
21.100	23.16	23.09	23.03	22.96	22.89
21.350	22.81	22.74	22.67	22.60	22.52

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
Label: PO-1 (OUT)

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
21.600	22.45	22.38	22.31	22.24	22.17
21.850	22.10	22.03	21.96	21.89	21.82
22.100	21.75	21.68	21.61	21.54	21.47
22.350	21.40	21.33	21.26	21.19	21.13
22.600	21.06	20.99	20.92	20.85	20.77
22.850	20.70	20.63	20.55	20.48	20.40
23.100	20.33	20.26	20.19	20.11	20.04
23.350	19.97	19.90	19.83	19.76	19.69
23.600	19.61	19.54	19.47	19.40	19.33
23.850	19.26	19.19	19.12	19.05	(N/A)

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

Peak Discharge	152.78 ft ³ /s
Time to Peak	8.200 hours
Hydrograph Volume	64.988 ac-ft

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

Time (hours)	Flow (ft ³ /s)				
1.550	0.00	0.00	0.00	0.01	0.01
1.800	0.02	0.03	0.04	0.05	0.06
2.050	0.07	0.09	0.10	0.12	0.15
2.300	0.18	0.21	0.25	0.29	0.34
2.550	0.39	0.45	0.51	0.58	0.65
2.800	0.72	0.80	0.88	0.97	1.06
3.050	1.30	1.57	1.84	2.10	2.37
3.300	2.64	2.91	3.19	3.46	3.74
3.550	4.02	4.31	4.61	4.91	5.22
3.800	5.53	5.86	6.18	6.51	6.84
4.050	7.18	7.51	7.84	8.14	8.44
4.300	8.74	9.04	9.35	9.66	9.98
4.550	10.30	10.62	10.95	11.24	11.54
4.800	11.85	12.16	12.47	12.80	13.13
5.050	13.47	13.82	14.13	14.46	14.79
5.300	15.13	15.48	15.84	16.21	16.55
5.550	16.88	17.21	17.55	17.88	18.22
5.800	18.56	18.89	19.21	19.54	19.87
6.050	20.22	20.58	20.96	21.33	21.71
6.300	22.10	22.50	22.91	23.30	23.68
6.550	24.06	24.44	24.80	25.13	25.44
6.800	25.76	26.07	26.40	26.73	27.05
7.050	27.38	27.73	28.11	28.49	28.88
7.300	29.30	29.74	30.20	30.68	31.18
7.550	31.76	32.47	33.45	34.71	42.21
7.800	58.22	73.28	83.92	95.94	112.05
8.050	130.47	143.69	150.93	152.78	150.41
8.300	146.09	140.73	134.69	128.34	121.96
8.550	115.80	111.08	107.60	104.54	101.78
8.800	99.18	96.67	94.21	91.78	89.39
9.050	88.07	86.90	85.67	84.41	83.10
9.300	81.77	80.42	79.06	77.43	75.29
9.550	73.26	71.37	69.67	68.15	66.78
9.800	65.51	64.34	63.23	62.19	61.21
10.050	60.20	59.22	58.27	57.35	56.46
10.300	55.61	54.81	54.04	53.32	52.65
10.550	52.02	51.45	50.95	50.53	50.14

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 25 years
 Storm Event: Brunswick NC 25-yr

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

Time (hours)	Flow (ft ³ /s)				
10.800	49.78	49.43	49.08	48.73	48.38
11.050	48.02	47.67	47.31	46.95	46.59
11.300	46.22	45.85	45.48	45.11	44.74
11.550	44.36	43.98	43.57	43.15	42.77
11.800	42.57	42.36	42.16	41.95	41.75
12.050	41.55	41.35	41.17	40.99	40.83
12.300	40.68	40.55	40.43	40.33	40.25
12.550	40.19	40.12	40.03	39.91	39.78
12.800	39.64	39.49	39.35	39.20	39.06
13.050	38.92	38.80	38.71	38.64	38.57
13.300	38.50	38.43	38.35	38.25	38.15
13.550	38.04	37.92	37.80	37.68	37.55
13.800	37.41	37.28	37.15	37.03	36.90
14.050	36.78	36.66	36.56	36.46	36.36
14.300	36.27	36.18	36.10	36.01	35.93
14.550	35.85	35.76	35.68	35.60	35.52
14.800	35.44	35.36	35.28	35.20	35.12
15.050	35.04	34.97	34.89	34.81	34.74
15.300	34.66	34.64	34.62	34.60	34.59
15.550	34.57	34.55	34.54	34.52	34.50
15.800	34.48	34.46	34.44	34.42	34.40
16.050	34.37	34.35	34.33	34.31	34.28
16.300	34.26	34.23	34.21	34.18	34.15
16.550	34.13	34.10	34.07	34.04	34.01
16.800	33.98	33.95	33.92	33.89	33.86
17.050	33.83	33.80	33.76	33.73	33.70
17.300	33.66	33.63	33.59	33.56	33.52
17.550	33.49	33.45	33.42	33.38	33.34
17.800	33.30	33.27	33.23	33.19	33.15
18.050	33.10	33.06	33.02	32.97	32.93
18.300	32.88	32.84	32.80	32.75	32.70
18.550	32.66	32.61	32.57	32.52	32.47
18.800	32.42	32.38	32.33	32.28	32.23
19.050	32.18	32.13	32.08	32.03	31.98
19.300	31.93	31.88	31.83	31.78	31.72
19.550	31.67	31.62	31.56	31.51	31.45
19.800	31.40	31.34	31.28	31.22	31.17
20.050	31.11	31.05	30.99	30.93	30.88
20.300	30.82	30.76	30.70	30.64	30.58
20.550	30.52	30.46	30.40	30.34	30.28
20.800	30.22	30.16	30.10	30.03	29.97
21.050	29.90	29.84	29.77	29.70	29.64

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
Label: PO-1 (OUT)

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
21.300	29.57	29.50	29.44	29.37	29.30
21.550	29.24	29.17	29.10	29.03	28.97
21.800	28.90	28.83	28.76	28.69	28.63
22.050	28.56	28.49	28.42	28.35	28.27
22.300	28.20	28.12	28.05	27.97	27.90
22.550	27.82	27.75	27.67	27.60	27.52
22.800	27.45	27.37	27.30	27.22	27.15
23.050	27.07	27.00	26.92	26.85	26.77
23.300	26.69	26.61	26.53	26.45	26.36
23.550	26.28	26.20	26.12	26.03	25.95
23.800	25.87	25.79	25.70	25.62	25.54

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

Peak Discharge	201.21 ft ³ /s
Time to Peak	8.150 hours
Hydrograph Volume	74.702 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)
1.450	0.00	0.00	0.01	0.01	0.02
1.700	0.03	0.04	0.05	0.06	0.08
1.950	0.10	0.12	0.14	0.17	0.21
2.200	0.25	0.30	0.35	0.41	0.48
2.450	0.55	0.63	0.71	0.80	0.89
2.700	0.99	1.15	1.45	1.76	2.07
2.950	2.38	2.70	3.01	3.33	3.65
3.200	3.97	4.29	4.60	4.92	5.24
3.450	5.56	5.89	6.22	6.55	6.90
3.700	7.26	7.62	7.97	8.31	8.65
3.950	8.99	9.35	9.70	10.06	10.42
4.200	10.77	11.11	11.42	11.74	12.06
4.450	12.39	12.73	13.06	13.41	13.76
4.700	14.07	14.39	14.71	15.04	15.38
4.950	15.72	16.08	16.43	16.76	17.10
5.200	17.45	17.81	18.18	18.55	18.92
5.450	19.27	19.62	19.98	20.35	20.71
5.700	21.06	21.40	21.74	22.09	22.44
5.950	22.80	23.16	23.51	23.88	24.27
6.200	24.68	25.08	25.48	25.89	26.31
6.450	26.74	27.13	27.52	27.91	28.28
6.700	28.62	28.95	29.27	29.60	29.93
6.950	30.27	30.60	30.96	31.33	31.72
7.200	32.11	32.53	32.97	33.42	33.89
7.450	34.39	36.12	39.24	43.61	54.86
7.700	67.94	80.49	90.27	109.69	133.30
7.950	155.58	175.66	190.56	199.36	201.21
8.200	197.28	189.79	180.62	170.73	160.75
8.450	151.02	142.72	135.12	128.29	122.55
8.700	117.82	113.79	111.04	108.51	105.99
8.950	103.47	100.96	98.46	95.97	93.52
9.200	91.11	88.89	87.78	86.61	85.40
9.450	84.17	82.91	81.66	80.43	79.28
9.700	78.21	76.64	75.16	73.78	72.49
9.950	71.27	70.11	69.01	67.94	66.91
10.200	65.90	64.91	63.97	63.06	62.20
10.450	61.39	60.58	59.80	59.10	58.49

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Brunswick NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
10.700	57.95	57.48	57.03	56.59	56.16
10.950	55.73	55.31	54.88	54.46	54.03
11.200	53.60	53.17	52.75	52.31	51.88
11.450	51.45	51.01	50.58	50.13	49.66
11.700	49.17	48.68	48.20	47.74	47.30
11.950	46.89	46.50	46.13	45.80	45.50
12.200	45.23	45.00	44.81	44.66	44.54
12.450	44.47	44.44	44.43	44.41	44.34
12.700	44.20	44.02	43.82	43.61	43.40
12.950	43.21	43.02	42.85	42.77	42.73
13.200	42.72	42.71	42.69	42.66	42.62
13.450	42.57	42.50	42.42	42.33	42.23
13.700	42.13	42.01	41.90	41.78	41.67
13.950	41.55	41.43	41.32	41.21	41.11
14.200	41.02	40.93	40.85	40.77	40.69
14.450	40.61	40.53	40.45	40.36	40.28
14.700	40.20	40.12	40.04	39.96	39.88
14.950	39.79	39.71	39.63	39.55	39.47
15.200	39.39	39.31	39.23	39.15	39.07
15.450	38.99	38.91	38.82	38.74	38.66
15.700	38.57	38.49	38.41	38.33	38.25
15.950	38.17	38.09	38.01	37.92	37.84
16.200	37.76	37.67	37.59	37.51	37.43
16.450	37.34	37.26	37.18	37.09	37.01
16.700	36.93	36.84	36.76	36.68	36.60
16.950	36.51	36.43	36.35	36.26	36.18
17.200	36.10	36.01	35.93	35.84	35.76
17.450	35.67	35.59	35.50	35.42	35.34
17.700	35.25	35.17	35.09	35.01	34.92
17.950	34.84	34.75	34.66	34.63	34.62
18.200	34.60	34.58	34.56	34.54	34.52
18.450	34.50	34.48	34.46	34.43	34.41
18.700	34.39	34.36	34.34	34.31	34.28
18.950	34.26	34.23	34.20	34.17	34.14
19.200	34.11	34.08	34.05	34.02	33.98
19.450	33.95	33.92	33.88	33.85	33.81
19.700	33.78	33.74	33.70	33.67	33.63
19.950	33.59	33.55	33.51	33.47	33.43
20.200	33.39	33.35	33.31	33.26	33.22
20.450	33.18	33.13	33.08	33.04	32.99
20.700	32.94	32.89	32.84	32.79	32.74
20.950	32.69	32.64	32.59	32.53	32.48

Brunswick Site

Subsection: Pond Routed Hydrograph (total out)
Label: PO-1 (OUT)

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
21.200	32.43	32.37	32.32	32.27	32.21
21.450	32.16	32.10	32.05	31.99	31.93
21.700	31.88	31.82	31.76	31.71	31.65
21.950	31.59	31.52	31.46	31.40	31.34
22.200	31.27	31.21	31.14	31.08	31.01
22.450	30.95	30.88	30.82	30.75	30.69
22.700	30.62	30.55	30.49	30.42	30.35
22.950	30.29	30.22	30.15	30.08	30.01
23.200	29.94	29.86	29.79	29.71	29.64
23.450	29.57	29.49	29.42	29.34	29.27
23.700	29.19	29.12	29.04	28.97	28.89
23.950	28.81	28.74	(N/A)	(N/A)	(N/A)

Brunswick Site

Subsection: Pond Inflow Summary
Label: PO-1 (IN)

Return Event: 2 years
Storm Event: Brunswick NC 2-yr

Summary for Hydrograph Addition at 'PO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	CM-1
<Catchment to Outflow Node>	CM-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	23.297	8.000	69.03
Flow (From)	CM-2	7.900	8.000	24.28
Flow (In)	PO-1	31.197	8.000	93.31

Brunswick Site

Subsection: Pond Inflow Summary
Label: PO-1 (IN)

Return Event: 10 years
Storm Event: Brunswick NC 10-yr

Summary for Hydrograph Addition at 'PO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	CM-1
<Catchment to Outflow Node>	CM-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	38.790	8.000	118.73
Flow (From)	CM-2	12.528	7.950	38.79
Flow (In)	PO-1	51.318	8.000	157.48

Brunswick Site

Subsection: Pond Inflow Summary
Label: PO-1 (IN)

Return Event: 25 years
Storm Event: Brunswick NC 25-yr

Summary for Hydrograph Addition at 'PO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	CM-1
<Catchment to Outflow Node>	CM-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	52.660	8.000	162.57
Flow (From)	CM-2	16.600	7.950	51.36
Flow (In)	PO-1	69.260	8.000	213.78

Brunswick Site

Subsection: Pond Inflow Summary
Label: PO-1 (IN)

Return Event: 100 years
Storm Event: Brunswick NC 100-yr

Summary for Hydrograph Addition at 'PO-1'

Upstream Link	Upstream Node
<Catchment to Outflow Node>	CM-1
<Catchment to Outflow Node>	CM-2

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	60.912	7.950	188.38
Flow (From)	CM-2	19.005	7.950	58.70
Flow (In)	PO-1	79.918	7.950	247.08

Brunswick Site

Index

C

CM-1 (Unit Hydrograph (Hydrograph Table), 10 years)...37, 38, 39, 42, 43, 44
CM-1 (Unit Hydrograph (Hydrograph Table), 100 years)...57, 58, 59, 62, 63, 64
CM-1 (Unit Hydrograph (Hydrograph Table), 2 years)...27, 28, 29, 32, 33, 34
CM-1 (Unit Hydrograph (Hydrograph Table), 25 years)...47, 48, 49, 52, 53, 54
CM-1 (Unit Hydrograph Summary, 10 years)...35, 36, 40, 41
CM-1 (Unit Hydrograph Summary, 100 years)...55, 56, 60, 61
CM-1 (Unit Hydrograph Summary, 2 years)...25, 26, 30, 31
CM-1 (Unit Hydrograph Summary, 25 years)...45, 46, 50, 51
CM-2 (Unit Hydrograph (Hydrograph Table), 10 years)...77, 78, 79, 82, 83, 84
CM-2 (Unit Hydrograph (Hydrograph Table), 100 years)...97, 98, 99, 102, 103, 104
CM-2 (Unit Hydrograph (Hydrograph Table), 2 years)...67, 68, 69, 72, 73, 74
CM-2 (Unit Hydrograph (Hydrograph Table), 25 years)...87, 88, 89, 92, 93, 94
CM-2 (Unit Hydrograph Summary, 10 years)...75, 76, 80, 81
CM-2 (Unit Hydrograph Summary, 100 years)...95, 96, 100, 101
CM-2 (Unit Hydrograph Summary, 2 years)...65, 66, 70, 71
CM-2 (Unit Hydrograph Summary, 25 years)...85, 86, 90, 91
Composite Outlet Structure - 1 (Composite Rating Curve, 10 years)...169, 170, 171
Composite Outlet Structure - 1 (Composite Rating Curve, 100 years)...191, 192, 193
Composite Outlet Structure - 1 (Composite Rating Curve, 2 years)...158, 159, 160
Composite Outlet Structure - 1 (Composite Rating Curve, 25 years)...180, 181, 182
Composite Outlet Structure - 1 (Individual Outlet Curves, 10 years)...165, 166, 167, 168
Composite Outlet Structure - 1 (Individual Outlet Curves, 100 years)...187, 188, 189, 190
Composite Outlet Structure - 1 (Individual Outlet Curves, 2 years)...149, 150, 151, 152, 153, 154, 155, 156, 157
Composite Outlet Structure - 1 (Individual Outlet Curves, 25 years)...176, 177, 178, 179
Composite Outlet Structure - 1 (Outlet Input Data, 10 years)...161, 162, 163, 164
Composite Outlet Structure - 1 (Outlet Input Data, 100 years)...183, 184, 185, 186
Composite Outlet Structure - 1 (Outlet Input Data, 2 years)...145, 146, 147, 148
Composite Outlet Structure - 1 (Outlet Input Data, 25 years)...172, 173, 174, 175

M

Brunswick Site

Master Network Summary...5, 6

N

NC airport/NOAA (Time-Depth Curve, 10 years)...7, 8, 9, 10

NC airport/NOAA (Time-Depth Curve, 100 years)...19, 20, 21, 22

NC airport/NOAA (Time-Depth Curve, 2 years)...15, 16, 17, 18

NC airport/NOAA (Time-Depth Curve, 25 years)...11, 12, 13, 14

O

O-1 (Addition Summary, 10 years)...107, 108

O-1 (Addition Summary, 100 years)...111, 112

O-1 (Addition Summary, 2 years)...105, 106

O-1 (Addition Summary, 25 years)...109, 110

Outlet-1 (Diverted Hydrograph, 10 years)...197, 198, 199

Outlet-1 (Diverted Hydrograph, 100 years)...203, 204, 205

Outlet-1 (Diverted Hydrograph, 2 years)...194, 195, 196

Outlet-1 (Diverted Hydrograph, 25 years)...200, 201, 202

P

PO-1 (Elevation-Area Volume Curve, 10 years)...139

PO-1 (Elevation-Area Volume Curve, 100 years)...143

PO-1 (Elevation-Area Volume Curve, 2 years)...137

PO-1 (Elevation-Area Volume Curve, 25 years)...141

PO-1 (Elevation-Volume-Flow Table (Pond), 10 years)...208, 209

PO-1 (Elevation-Volume-Flow Table (Pond), 100 years)...212, 213

PO-1 (Elevation-Volume-Flow Table (Pond), 2 years)...206, 207

PO-1 (Elevation-Volume-Flow Table (Pond), 25 years)...210, 211

PO-1 (IN) (Level Pool Pond Routing Summary, 10 years)...215

PO-1 (IN) (Level Pool Pond Routing Summary, 100 years)...217

PO-1 (IN) (Level Pool Pond Routing Summary, 2 years)...214

PO-1 (IN) (Level Pool Pond Routing Summary, 25 years)...216

PO-1 (IN) (Pond Inflow Summary, 10 years)...231

PO-1 (IN) (Pond Inflow Summary, 100 years)...233

PO-1 (IN) (Pond Inflow Summary, 2 years)...230

PO-1 (IN) (Pond Inflow Summary, 25 years)...232

Brunswick Site

PO-1 (OUT) (Pond Routed Hydrograph (total out), 10 years)...221, 222, 223
PO-1 (OUT) (Pond Routed Hydrograph (total out), 100 years)...227, 228, 229
PO-1 (OUT) (Pond Routed Hydrograph (total out), 2 years)...218, 219, 220
PO-1 (OUT) (Pond Routed Hydrograph (total out), 25 years)...224, 225, 226
PO-1 (OUT) (Time vs. Elevation, 10 years)...116, 117, 118
PO-1 (OUT) (Time vs. Elevation, 100 years)...122, 123, 124
PO-1 (OUT) (Time vs. Elevation, 2 years)...113, 114, 115
PO-1 (OUT) (Time vs. Elevation, 25 years)...119, 120, 121
PO-1 (Time vs. Volume, 10 years)...128, 129, 130
PO-1 (Time vs. Volume, 100 years)...134, 135, 136
PO-1 (Time vs. Volume, 2 years)...125, 126, 127
PO-1 (Time vs. Volume, 25 years)...131, 132, 133
PO-1 (Volume Equations, 10 years)...140
PO-1 (Volume Equations, 100 years)...144
PO-1 (Volume Equations, 2 years)...138
PO-1 (Volume Equations, 25 years)...142

U

Unit Hydrograph Equations...23, 24

User Notifications...2, 3, 4

Centennial Site

Project Summary

Title	Centennial Site
Engineer	RMR
Company	Nevada City Engineering, Inc.
Date	9/10/2019

Notes

Table of Contents

	Master Network Summary	2
NC airport/NOAA	Time-Depth Curve, 100 years	3
	Time-Depth Curve, 100 years	3
	Time-Depth Curve, 10 years	7
	Time-Depth Curve, 10 years	7
	Unit Hydrograph Equations	11
CM-1	Unit Hydrograph Summary, 10 years	13
	Unit Hydrograph (Hydrograph Table), 10 years	15
	Unit Hydrograph Summary, 10 years	13
	Unit Hydrograph (Hydrograph Table), 10 years	15
	Unit Hydrograph Summary, 100 years	23
	Unit Hydrograph (Hydrograph Table), 100 years	25
	Unit Hydrograph Summary, 100 years	23
	Unit Hydrograph (Hydrograph Table), 100 years	25
O-1	Addition Summary, 10 years	33
	Addition Summary, 10 years	33
	Addition Summary, 100 years	35
	Addition Summary, 100 years	35
PO-1 (OUT)	Time vs. Elevation, 10 years	37
	Time vs. Elevation, 100 years	40
PO-1	Time vs. Volume, 10 years	43
	Time vs. Volume, 100 years	46
PO-1	Elevation-Area Volume Curve, 10 years	49
	Volume Equations, 10 years	50
	Elevation-Area Volume Curve, 100 years	51
	Volume Equations, 100 years	52
Composite Outlet Structure - 1		

Table of Contents

	Outlet Input Data, 10 years	53
	Individual Outlet Curves, 10 years	57
	Composite Rating Curve, 10 years	66
	Outlet Input Data, 100 years	69
	Individual Outlet Curves, 100 years	73
	Composite Rating Curve, 100 years	77
Outlet-1		
	Diverted Hydrograph, 10 years	80
	Diverted Hydrograph, 100 years	83
PO-1		
	Elevation-Volume-Flow Table (Pond), 10 years	86
	Elevation-Volume-Flow Table (Pond), 100 years	88
PO-1 (IN)		
	Level Pool Pond Routing Summary, 10 years	90
	Level Pool Pond Routing Summary, 100 years	91
PO-1 (OUT)		
	Pond Routed Hydrograph (total out), 10 years	92
	Pond Routed Hydrograph (total out), 100 years	95
PO-1 (IN)		
	Pond Inflow Summary, 10 years	98
	Pond Inflow Summary, 100 years	99

Centennial Site

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
CM-1	Pre-Development 10	10	24.300	8.000	72.44
CM-1	Post-Development 10	10	28.807	7.950	89.68
CM-1	Pre-Development 100	100	39.469	8.000	121.02
CM-1	Post-Development 100	100	44.124	7.950	137.41

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)
O-1	Pre-Development 10	10	24.300	8.000	72.44
O-1	Post-Development 10	10	28.027	8.350	45.14
O-1	Pre-Development 100	100	39.469	8.000	121.02
O-1	Post-Development 100	100	43.107	8.300	75.75

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
PO-1 (IN)	Post-Development 10	10	28.807	7.950	89.68	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 10	10	28.027	8.350	45.14	2,501.07	3.915
PO-1 (IN)	Post-Development 100	100	44.124	7.950	137.41	(N/A)	(N/A)
PO-1 (OUT)	Post-Development 100	100	43.107	8.300	75.75	2,503.70	6.152

Centennial Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Time-Depth Curve: Idaho Maryland NC 100-yr	
Label	Idaho Maryland NC 100-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.1	0.1
0.500	0.1	0.1	0.1	0.2	0.2
1.000	0.2	0.2	0.2	0.3	0.3
1.500	0.3	0.4	0.4	0.4	0.5
2.000	0.5	0.5	0.5	0.6	0.6
2.500	0.6	0.7	0.7	0.7	0.8
3.000	0.8	0.8	0.9	0.9	0.9
3.500	0.9	1.0	1.0	1.0	1.1
4.000	1.1	1.2	1.2	1.2	1.3
4.500	1.3	1.3	1.4	1.4	1.5
5.000	1.5	1.5	1.6	1.6	1.7
5.500	1.7	1.8	1.8	1.9	1.9
6.000	2.0	2.0	2.1	2.2	2.2
6.500	2.3	2.3	2.4	2.5	2.5
7.000	2.6	2.7	2.7	2.8	2.9
7.500	3.0	3.2	3.4	3.7	3.9
8.000	4.1	4.2	4.4	4.5	4.5
8.500	4.6	4.7	4.8	4.9	4.9
9.000	5.0	5.1	5.1	5.2	5.2
9.500	5.3	5.4	5.4	5.5	5.5
10.000	5.6	5.6	5.7	5.7	5.7
10.500	5.8	5.8	5.9	5.9	6.0
11.000	6.0	6.1	6.1	6.1	6.2
11.500	6.2	6.3	6.3	6.3	6.4
12.000	6.4	6.4	6.5	6.5	6.5
12.500	6.6	6.6	6.7	6.7	6.7
13.000	6.8	6.8	6.8	6.9	6.9
13.500	6.9	7.0	7.0	7.0	7.1
14.000	7.1	7.1	7.2	7.2	7.2
14.500	7.3	7.3	7.3	7.4	7.4
15.000	7.4	7.4	7.5	7.5	7.5
15.500	7.6	7.6	7.6	7.7	7.7
16.000	7.7	7.8	7.8	7.8	7.8

Centennial Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	7.9	7.9	7.9	8.0	8.0
17.000	8.0	8.0	8.1	8.1	8.1
17.500	8.2	8.2	8.2	8.2	8.3
18.000	8.3	8.3	8.3	8.4	8.4
18.500	8.4	8.4	8.5	8.5	8.5
19.000	8.6	8.6	8.6	8.6	8.7
19.500	8.7	8.7	8.7	8.7	8.8
20.000	8.8	8.8	8.8	8.9	8.9
20.500	8.9	8.9	9.0	9.0	9.0
21.000	9.0	9.1	9.1	9.1	9.1
21.500	9.1	9.2	9.2	9.2	9.2
22.000	9.2	9.3	9.3	9.3	9.3
22.500	9.4	9.4	9.4	9.4	9.4
23.000	9.5	9.5	9.5	9.5	9.5
23.500	9.5	9.6	9.6	9.6	9.6
24.000	9.6	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Time-Depth Curve: Idaho Maryland NC 100-yr	
Label	Idaho Maryland NC 100-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.1	0.1
0.500	0.1	0.1	0.1	0.2	0.2
1.000	0.2	0.2	0.2	0.3	0.3
1.500	0.3	0.4	0.4	0.4	0.5
2.000	0.5	0.5	0.5	0.6	0.6
2.500	0.6	0.7	0.7	0.7	0.8
3.000	0.8	0.8	0.9	0.9	0.9
3.500	0.9	1.0	1.0	1.0	1.1
4.000	1.1	1.2	1.2	1.2	1.3
4.500	1.3	1.3	1.4	1.4	1.5
5.000	1.5	1.5	1.6	1.6	1.7
5.500	1.7	1.8	1.8	1.9	1.9
6.000	2.0	2.0	2.1	2.2	2.2
6.500	2.3	2.3	2.4	2.5	2.5
7.000	2.6	2.7	2.7	2.8	2.9
7.500	3.0	3.2	3.4	3.7	3.9
8.000	4.1	4.2	4.4	4.5	4.5
8.500	4.6	4.7	4.8	4.9	4.9
9.000	5.0	5.1	5.1	5.2	5.2
9.500	5.3	5.4	5.4	5.5	5.5
10.000	5.6	5.6	5.7	5.7	5.7
10.500	5.8	5.8	5.9	5.9	6.0
11.000	6.0	6.1	6.1	6.1	6.2
11.500	6.2	6.3	6.3	6.3	6.4
12.000	6.4	6.4	6.5	6.5	6.5
12.500	6.6	6.6	6.7	6.7	6.7
13.000	6.8	6.8	6.8	6.9	6.9
13.500	6.9	7.0	7.0	7.0	7.1
14.000	7.1	7.1	7.2	7.2	7.2
14.500	7.3	7.3	7.3	7.4	7.4
15.000	7.4	7.4	7.5	7.5	7.5
15.500	7.6	7.6	7.6	7.7	7.7
16.000	7.7	7.8	7.8	7.8	7.8

Centennial Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	7.9	7.9	7.9	8.0	8.0
17.000	8.0	8.0	8.1	8.1	8.1
17.500	8.2	8.2	8.2	8.2	8.3
18.000	8.3	8.3	8.3	8.4	8.4
18.500	8.4	8.4	8.5	8.5	8.5
19.000	8.6	8.6	8.6	8.6	8.7
19.500	8.7	8.7	8.7	8.7	8.8
20.000	8.8	8.8	8.8	8.9	8.9
20.500	8.9	8.9	9.0	9.0	9.0
21.000	9.0	9.1	9.1	9.1	9.1
21.500	9.1	9.2	9.2	9.2	9.2
22.000	9.2	9.3	9.3	9.3	9.3
22.500	9.4	9.4	9.4	9.4	9.4
23.000	9.5	9.5	9.5	9.5	9.5
23.500	9.5	9.6	9.6	9.6	9.6
24.000	9.6	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Time-Depth Curve: Idaho Maryland NC 10-yr	
Label	Idaho Maryland NC 10-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.1
0.500	0.1	0.1	0.1	0.1	0.1
1.000	0.1	0.2	0.2	0.2	0.2
1.500	0.2	0.3	0.3	0.3	0.3
2.000	0.3	0.4	0.4	0.4	0.4
2.500	0.4	0.5	0.5	0.5	0.5
3.000	0.6	0.6	0.6	0.6	0.6
3.500	0.7	0.7	0.7	0.7	0.8
4.000	0.8	0.8	0.8	0.9	0.9
4.500	0.9	0.9	1.0	1.0	1.0
5.000	1.1	1.1	1.1	1.2	1.2
5.500	1.2	1.3	1.3	1.3	1.4
6.000	1.4	1.4	1.5	1.5	1.6
6.500	1.6	1.7	1.7	1.7	1.8
7.000	1.8	1.9	1.9	2.0	2.0
7.500	2.1	2.3	2.4	2.6	2.7
8.000	2.9	3.0	3.1	3.1	3.2
8.500	3.3	3.3	3.4	3.4	3.5
9.000	3.5	3.6	3.6	3.7	3.7
9.500	3.7	3.8	3.8	3.9	3.9
10.000	3.9	4.0	4.0	4.0	4.1
10.500	4.1	4.1	4.2	4.2	4.2
11.000	4.2	4.3	4.3	4.3	4.4
11.500	4.4	4.4	4.4	4.5	4.5
12.000	4.5	4.5	4.6	4.6	4.6
12.500	4.6	4.7	4.7	4.7	4.7
13.000	4.8	4.8	4.8	4.8	4.9
13.500	4.9	4.9	4.9	5.0	5.0
14.000	5.0	5.0	5.1	5.1	5.1
14.500	5.1	5.1	5.2	5.2	5.2
15.000	5.2	5.3	5.3	5.3	5.3
15.500	5.3	5.4	5.4	5.4	5.4
16.000	5.4	5.5	5.5	5.5	5.5

Centennial Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	5.6	5.6	5.6	5.6	5.6
17.000	5.7	5.7	5.7	5.7	5.7
17.500	5.8	5.8	5.8	5.8	5.8
18.000	5.8	5.9	5.9	5.9	5.9
18.500	5.9	6.0	6.0	6.0	6.0
19.000	6.0	6.0	6.1	6.1	6.1
19.500	6.1	6.1	6.2	6.2	6.2
20.000	6.2	6.2	6.2	6.3	6.3
20.500	6.3	6.3	6.3	6.3	6.4
21.000	6.4	6.4	6.4	6.4	6.4
21.500	6.4	6.5	6.5	6.5	6.5
22.000	6.5	6.5	6.6	6.6	6.6
22.500	6.6	6.6	6.6	6.6	6.7
23.000	6.7	6.7	6.7	6.7	6.7
23.500	6.7	6.7	6.8	6.8	6.8
24.000	6.8	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Time-Depth Curve: Idaho Maryland NC 10-yr	
Label	Idaho Maryland NC 10-yr
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.1
0.500	0.1	0.1	0.1	0.1	0.1
1.000	0.1	0.2	0.2	0.2	0.2
1.500	0.2	0.3	0.3	0.3	0.3
2.000	0.3	0.4	0.4	0.4	0.4
2.500	0.4	0.5	0.5	0.5	0.5
3.000	0.6	0.6	0.6	0.6	0.6
3.500	0.7	0.7	0.7	0.7	0.8
4.000	0.8	0.8	0.8	0.9	0.9
4.500	0.9	0.9	1.0	1.0	1.0
5.000	1.1	1.1	1.1	1.2	1.2
5.500	1.2	1.3	1.3	1.3	1.4
6.000	1.4	1.4	1.5	1.5	1.6
6.500	1.6	1.7	1.7	1.7	1.8
7.000	1.8	1.9	1.9	2.0	2.0
7.500	2.1	2.3	2.4	2.6	2.7
8.000	2.9	3.0	3.1	3.1	3.2
8.500	3.3	3.3	3.4	3.4	3.5
9.000	3.5	3.6	3.6	3.7	3.7
9.500	3.7	3.8	3.8	3.9	3.9
10.000	3.9	4.0	4.0	4.0	4.1
10.500	4.1	4.1	4.2	4.2	4.2
11.000	4.2	4.3	4.3	4.3	4.4
11.500	4.4	4.4	4.4	4.5	4.5
12.000	4.5	4.5	4.6	4.6	4.6
12.500	4.6	4.7	4.7	4.7	4.7
13.000	4.8	4.8	4.8	4.8	4.9
13.500	4.9	4.9	4.9	5.0	5.0
14.000	5.0	5.0	5.1	5.1	5.1
14.500	5.1	5.1	5.2	5.2	5.2
15.000	5.2	5.3	5.3	5.3	5.3
15.500	5.3	5.4	5.4	5.4	5.4
16.000	5.4	5.5	5.5	5.5	5.5

Centennial Site

Subsection: Time-Depth Curve
 Label: NC airport/NOAA

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

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

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
16.500	5.6	5.6	5.6	5.6	5.6
17.000	5.7	5.7	5.7	5.7	5.7
17.500	5.8	5.8	5.8	5.8	5.8
18.000	5.8	5.9	5.9	5.9	5.9
18.500	5.9	6.0	6.0	6.0	6.0
19.000	6.0	6.0	6.1	6.1	6.1
19.500	6.1	6.1	6.2	6.2	6.2
20.000	6.2	6.2	6.2	6.3	6.3
20.500	6.3	6.3	6.3	6.3	6.4
21.000	6.4	6.4	6.4	6.4	6.4
21.500	6.4	6.5	6.5	6.5	6.5
22.000	6.5	6.5	6.6	6.6	6.6
22.500	6.6	6.6	6.6	6.6	6.7
23.000	6.7	6.7	6.7	6.7	6.7
23.500	6.7	6.7	6.8	6.8	6.8
24.000	6.8	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method (Computational Notes)

Definition of Terms

At	Total area (acres): $At = Ai + Ap$
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate (time^{-1})
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of $0.1333Tc$, r_{tm} , and t_h (Smallest dt is then adjusted to match up with T_p)
UDdt	User specified override computational main time increment (only used if UDdt is $\Rightarrow .1333Tc$)
D(t)	Point on distribution curve (fraction of P) for time step t
K	$2 / (1 + (Tr/Tp))$: default $K = 0.75$: (for $Tr/Tp = 1.67$)
Ks	Hydrograph shape factor = Unit Conversions * $K = ((1\text{hr}/3600\text{sec}) * (1\text{ft}/12\text{in}) * ((5280\text{ft})^2/\text{sq.mi})) * K$ Default $K_s = 645.333 * 0.75 = 484$
Lag	Lag time from center of excess runoff (dt) to T_p : $Lag = 0.6Tc$
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
PI(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = $(K_s * A * Q) / T_p$ (where $Q = 1\text{in. runoff}$, $A = \text{sq.mi.}$)
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: $S_i = (1000/CNi) - 10$
Sp	S for pervious area: $S_p = (1000/CNp) - 10$
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: $T_b = T_p + Tr$
Tp	Time (hrs) to peak of a unit hydrograph: $T_p = (dt/2) + Lag$
Tr	Time (hrs) of receding limb of unit hydrograph: $Tr = \text{ratio of } T_p$

Centennial Site

Subsection: Unit Hydrograph Equations

Unit Hydrograph Method

Computational Notes

Precipitation

Column (1)	Time for time step t
Column (2)	$D(t)$ = Point on distribution curve for time step t
Column (3)	$P_i(t) = P_a(t) - P_a(t-1)$; Col.(4) - Preceding Col.(4)
Column (4)	$P_a(t) = D(t) \times P$; Col.(2) x P

Pervious Area Runoff (using SCS Runoff CN Method)

Column (5)	$R_{ap}(t)$ = Accumulated pervious runoff for time step t If $(P_a(t) \leq 0.2S_p)$ then use: $R_{ap}(t) = 0.0$ If $(P_a(t) > 0.2S_p)$ then use: $R_{ap}(t) = (Col.(4) - 0.2S_p)^{**2} / (Col.(4) + 0.8S_p)$
Column (6)	$R_{ip}(t)$ = Incremental pervious runoff for time step t $R_{ip}(t) = R_{ap}(t) - R_{ap}(t-1)$ $R_{ip}(t) = Col.(5)$ for current row - $Col.(5)$ for preceding row.

Impervious Area Runoff

Column (7 & 8)... Did not specify to use impervious areas.

Incremental Weighted Runoff

Column (9)	$R(t) = (A_p/A_t) \times R_{ip}(t) + (A_i/A_t) \times R_{ii}(t)$ $R(t) = (A_p/A_t) \times Col.(6) + (A_i/A_t) \times Col.(8)$
------------	--

SCS Unit Hydrograph Method

Column (10) $Q(t)$ is computed with the SCS unit hydrograph method using $R(t)$ and $Q_u(t)$.

Centennial Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Storm Event	Idaho Maryland NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.170 hours
Area (User Defined)	66.860 acres
<hr/>	
Computational Time Increment	0.023 hours
Time to Peak (Computed)	7.956 hours
Flow (Peak, Computed)	89.70 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	7.950 hours
Flow (Peak Interpolated Output)	89.68 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	86.120
Area (User Defined)	66.860 acres
Maximum Retention (Pervious)	1.6 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.2 in
Runoff Volume (Pervious)	28.901 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	28.807 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.170 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Centennial Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	445.62 ft ³ /s
Unit peak time, Tp	0.113 hours
Unit receding limb, Tr	0.453 hours
Total unit time, Tb	0.567 hours

Centennial Site

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

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Storm Event	Idaho Maryland NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.170 hours
Area (User Defined)	66.860 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.900	0.00	0.00	0.03	0.10	0.23
2.150	0.39	0.56	0.74	0.92	1.10
2.400	1.28	1.45	1.62	1.79	1.95
2.650	2.11	2.26	2.41	2.56	2.71
2.900	2.85	2.99	3.13	3.26	3.38
3.150	3.49	3.61	3.73	3.87	4.00
3.400	4.15	4.30	4.46	4.63	4.84
3.650	5.06	5.27	5.47	5.65	5.83
3.900	6.01	6.19	6.37	6.52	6.66
4.150	6.79	6.93	7.08	7.24	7.42
4.400	7.60	7.78	7.97	8.16	8.36
4.650	8.56	8.77	8.98	9.20	9.43
4.900	9.67	9.91	10.16	10.43	10.73
5.150	11.04	11.34	11.62	11.90	12.16
5.400	12.42	12.67	12.92	13.13	13.28
5.650	13.42	13.61	13.85	14.13	14.42
5.900	14.73	15.05	15.42	15.86	16.48
6.150	17.11	17.64	18.08	18.47	18.82
6.400	19.13	19.40	19.64	19.72	19.44
6.650	19.12	19.03	19.14	19.40	19.76
6.900	20.21	20.72	21.33	22.01	22.80
7.150	23.64	24.60	25.61	26.72	27.89
7.400	29.20	30.56	32.11	36.74	49.24
7.650	62.99	73.03	79.67	84.25	87.30
7.900	89.05	89.68	89.09	85.70	76.50
8.150	66.34	58.63	53.15	48.74	45.14
8.400	41.97	39.30	36.97	35.50	35.35
8.650	35.57	35.27	34.61	33.74	32.85
8.900	31.91	31.01	30.12	29.28	28.44
9.150	27.65	26.90	26.20	25.51	24.88
9.400	24.28	23.73	23.20	22.87	22.88
9.650	22.99	22.96	22.84	22.65	22.44

Centennial Site

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

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
9.900	22.22	22.00	21.77	21.52	21.22
10.150	20.91	20.64	20.42	20.21	20.03
10.400	19.88	19.75	19.62	19.55	19.62
10.650	19.71	19.69	19.61	19.48	19.34
10.900	19.19	19.04	18.88	18.73	18.57
11.150	18.41	18.25	18.10	17.93	17.77
11.400	17.61	17.46	17.29	17.11	16.86
11.650	16.62	16.43	16.29	16.17	16.08
11.900	15.99	15.92	15.87	15.84	15.82
12.150	15.81	15.83	15.87	15.94	16.01
12.400	16.10	16.19	16.32	16.34	16.12
12.650	15.82	15.62	15.49	15.40	15.33
12.900	15.29	15.26	15.22	15.26	15.44
13.150	15.62	15.66	15.60	15.51	15.42
13.400	15.29	15.17	15.07	14.97	14.89
13.650	14.80	14.72	14.65	14.60	14.56
13.900	14.52	14.47	14.45	14.45	14.47
14.150	14.49	14.50	14.49	14.46	14.44
14.400	14.41	14.39	14.36	14.32	14.30
14.650	14.27	14.24	14.21	14.17	14.13
14.900	14.11	14.08	14.06	14.04	14.01
15.150	13.98	13.95	13.92	13.89	13.86
15.400	13.82	13.78	13.75	13.73	13.69
15.650	13.66	13.63	13.61	13.59	13.57
15.900	13.54	13.50	13.46	13.43	13.40
16.150	13.37	13.34	13.30	13.28	13.25
16.400	13.22	13.18	13.16	13.13	13.10
16.650	13.06	13.04	13.01	12.98	12.94
16.900	12.92	12.89	12.86	12.82	12.79
17.150	12.77	12.73	12.70	12.66	12.62
17.400	12.59	12.57	12.54	12.52	12.49
17.650	12.45	12.43	12.40	12.37	12.33
17.900	12.29	12.25	12.22	12.19	12.16
18.150	12.13	12.10	12.07	12.05	12.03
18.400	11.99	11.96	11.92	11.88	11.85
18.650	11.82	11.79	11.75	11.72	11.70
18.900	11.66	11.63	11.60	11.57	11.54
19.150	11.50	11.48	11.45	11.41	11.38
19.400	11.35	11.32	11.29	11.25	11.22
19.650	11.20	11.16	11.12	11.08	11.05
19.900	11.01	10.99	10.97	10.94	10.91
20.150	10.87	10.85	10.82	10.78	10.74

Centennial Site

Subsection: Unit Hydrograph (Hydrograph Table)

Label: CM-1

Return Event: 10 years

Storm Event: Idaho Maryland NC 10-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
20.400	10.70	10.67	10.64	10.61	10.57
20.650	10.54	10.51	10.48	10.46	10.43
20.900	10.40	10.36	10.32	10.28	10.25
21.150	10.23	10.19	10.15	10.12	10.10
21.400	10.06	10.03	10.00	9.97	9.93
21.650	9.90	9.87	9.84	9.81	9.77
21.900	9.74	9.71	9.68	9.64	9.61
22.150	9.58	9.55	9.51	9.47	9.43
22.400	9.40	9.37	9.35	9.32	9.29
22.650	9.26	9.23	9.20	9.16	9.12
22.900	9.08	9.04	9.01	8.98	8.95
23.150	8.91	8.88	8.86	8.83	8.81
23.400	8.77	8.74	8.69	8.66	8.62
23.650	8.60	8.56	8.52	8.49	8.47
23.900	8.43	8.40	8.36	(N/A)	(N/A)

Centennial Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Storm Event	Idaho Maryland NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	69.960 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	8.000 hours
Flow (Peak, Computed)	72.44 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	72.44 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.000
Area (User Defined)	69.960 acres
Maximum Retention (Pervious)	3.0 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	4.2 in
Runoff Volume (Pervious)	24.408 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	24.300 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Centennial Site

Subsection: Unit Hydrograph Summary

Label: CM-1

Return Event: 10 years

Storm Event: Idaho Maryland NC 10-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	396.34 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Centennial Site

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: CM-1

Storm Event: Idaho Maryland NC 10-yr

Storm Event	Idaho Maryland NC 10-yr
Return Event	10 years
Duration	24.000 hours
Depth	6.8 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	69.960 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
3.200	0.00	0.00	0.03	0.08	0.16
3.450	0.25	0.36	0.47	0.59	0.71
3.700	0.84	0.98	1.11	1.24	1.38
3.950	1.52	1.66	1.79	1.92	2.05
4.200	2.17	2.31	2.44	2.58	2.73
4.450	2.87	3.02	3.17	3.33	3.49
4.700	3.65	3.82	3.99	4.17	4.35
4.950	4.54	4.73	4.94	5.16	5.38
5.200	5.62	5.84	6.07	6.29	6.51
5.450	6.73	6.95	7.15	7.33	7.50
5.700	7.68	7.89	8.12	8.36	8.62
5.950	8.89	9.18	9.51	9.94	10.40
6.200	10.84	11.23	11.59	11.92	12.23
6.450	12.51	12.78	12.95	12.95	12.87
6.700	12.85	12.96	13.17	13.46	13.82
6.950	14.23	14.72	15.26	15.87	16.53
7.200	17.28	18.07	18.96	19.91	20.95
7.450	22.04	23.33	26.28	33.70	43.52
7.700	52.34	58.87	63.80	67.48	70.11
7.950	71.78	72.44	71.14	65.81	58.59
8.200	51.99	47.10	43.16	39.95	37.15
8.450	34.80	32.73	31.26	30.70	30.72
8.700	30.61	30.20	29.58	28.90	28.15
8.950	27.42	26.68	25.98	25.28	24.63
9.200	23.98	23.38	22.79	22.25	21.72
9.450	21.24	20.79	20.46	20.37	20.43
9.700	20.45	20.38	20.26	20.11	19.94
9.950	19.77	19.59	19.39	19.15	18.90
10.200	18.67	18.46	18.28	18.13	17.99
10.450	17.88	17.77	17.71	17.74	17.81
10.700	17.84	17.80	17.71	17.61	17.49
10.950	17.37	17.24	17.11	16.98	16.85

Centennial Site

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: CM-1

Storm Event: Idaho Maryland NC 10-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
11.200	16.71	16.58	16.44	16.31	16.17
11.450	16.04	15.90	15.74	15.55	15.34
11.700	15.16	15.02	14.91	14.82	14.74
11.950	14.68	14.63	14.60	14.58	14.58
12.200	14.59	14.63	14.68	14.75	14.84
12.450	14.93	15.04	15.09	14.97	14.75
12.700	14.55	14.42	14.33	14.26	14.21
12.950	14.18	14.16	14.17	14.30	14.46
13.200	14.54	14.53	14.47	14.39	14.30
13.450	14.19	14.10	14.01	13.93	13.86
13.700	13.79	13.72	13.67	13.64	13.60
13.950	13.56	13.54	13.53	13.55	13.57
14.200	13.59	13.59	13.57	13.56	13.54
14.450	13.52	13.50	13.47	13.45	13.43
14.700	13.41	13.38	13.35	13.32	13.30
14.950	13.28	13.26	13.24	13.22	13.20
15.200	13.17	13.15	13.13	13.10	13.07
15.450	13.04	13.01	12.99	12.97	12.94
15.700	12.91	12.90	12.88	12.86	12.84
15.950	12.81	12.78	12.75	12.72	12.70
16.200	12.67	12.64	12.62	12.60	12.57
16.450	12.54	12.52	12.49	12.47	12.44
16.700	12.41	12.39	12.36	12.34	12.31
16.950	12.29	12.26	12.23	12.21	12.18
17.200	12.16	12.13	12.09	12.06	12.03
17.450	12.01	11.99	11.97	11.94	11.92
17.700	11.89	11.87	11.84	11.81	11.77
17.950	11.74	11.71	11.69	11.66	11.63
18.200	11.60	11.58	11.56	11.54	11.51
18.450	11.48	11.44	11.41	11.38	11.36
18.700	11.33	11.30	11.27	11.25	11.22
18.950	11.19	11.16	11.13	11.10	11.07
19.200	11.05	11.02	10.99	10.96	10.93
19.450	10.91	10.88	10.85	10.82	10.80
19.700	10.77	10.73	10.70	10.66	10.63
19.950	10.61	10.58	10.56	10.53	10.50
20.200	10.48	10.45	10.42	10.39	10.35
20.450	10.32	10.28	10.26	10.23	10.20
20.700	10.17	10.14	10.12	10.10	10.07
20.950	10.04	10.00	9.96	9.93	9.91
21.200	9.88	9.84	9.81	9.79	9.76
21.450	9.72	9.70	9.67	9.64	9.61

Centennial Site

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 10 years

Label: CM-1

Storm Event: Idaho Maryland NC 10-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
21.700	9.58	9.55	9.52	9.49	9.46
21.950	9.43	9.40	9.37	9.34	9.31
22.200	9.28	9.25	9.21	9.17	9.14
22.450	9.11	9.09	9.07	9.04	9.01
22.700	8.98	8.95	8.92	8.88	8.84
22.950	8.81	8.78	8.75	8.72	8.68
23.200	8.65	8.63	8.60	8.58	8.55
23.450	8.52	8.48	8.44	8.41	8.38
23.700	8.35	8.32	8.29	8.26	8.23
23.950	8.20	8.17	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Storm Event	Idaho Maryland NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.170 hours
Area (User Defined)	66.860 acres
<hr/>	
Computational Time Increment	0.023 hours
Time to Peak (Computed)	7.933 hours
Flow (Peak, Computed)	137.49 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	7.950 hours
Flow (Peak Interpolated Output)	137.41 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	86.120
Area (User Defined)	66.860 acres
Maximum Retention (Pervious)	1.6 in
Maximum Retention (Pervious, 20 percent)	0.3 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.9 in
Runoff Volume (Pervious)	44.260 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	44.124 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.170 hours
Computational Time Increment	0.023 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Centennial Site

Subsection: Unit Hydrograph Summary

Label: CM-1

Return Event: 100 years

Storm Event: Idaho Maryland NC 100-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	445.62 ft ³ /s
Unit peak time, Tp	0.113 hours
Unit receding limb, Tr	0.453 hours
Total unit time, Tb	0.567 hours

Centennial Site

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: CM-1

Storm Event: Idaho Maryland NC 100-yr

Storm Event	Idaho Maryland NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.170 hours
Area (User Defined)	66.860 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.450	0.00	0.01	0.09	0.27	0.52
1.700	0.81	1.11	1.42	1.72	2.02
1.950	2.32	2.62	2.93	3.25	3.57
2.200	3.89	4.19	4.49	4.78	5.06
2.450	5.34	5.61	5.86	6.09	6.31
2.700	6.53	6.75	6.96	7.18	7.39
2.950	7.59	7.79	7.97	8.11	8.25
3.200	8.41	8.59	8.78	8.98	9.21
3.450	9.45	9.69	9.96	10.32	10.69
3.700	11.04	11.35	11.64	11.91	12.19
3.950	12.46	12.72	12.95	13.13	13.30
4.200	13.49	13.71	13.95	14.20	14.47
4.450	14.75	15.03	15.32	15.61	15.91
4.700	16.22	16.53	16.87	17.21	17.58
4.950	17.95	18.33	18.73	19.20	19.68
5.200	20.14	20.57	20.98	21.36	21.74
5.450	22.10	22.46	22.76	22.94	23.11
5.700	23.38	23.72	24.12	24.54	25.00
5.950	25.48	26.03	26.71	27.66	28.64
6.200	29.45	30.11	30.68	31.17	31.60
6.450	31.98	32.29	32.34	31.81	31.22
6.700	31.01	31.13	31.49	31.99	32.66
6.950	33.42	34.35	35.37	36.57	37.85
7.200	39.30	40.82	42.52	44.28	46.27
7.450	48.33	50.68	57.84	77.26	98.51
7.700	113.83	123.75	130.40	134.65	136.88
7.950	137.41	136.10	130.56	116.30	100.66
8.200	88.80	80.38	73.60	68.08	63.23
8.450	59.15	55.60	53.34	53.06	53.36
8.700	52.87	51.85	50.52	49.14	47.71
8.950	46.34	44.98	43.71	42.43	41.24
9.200	40.09	39.03	37.99	37.04	36.12

Centennial Site

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: CM-1

Storm Event: Idaho Maryland NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
9.450	35.29	34.50	33.99	33.99	34.14
9.700	34.09	33.89	33.61	33.29	32.95
9.950	32.62	32.26	31.88	31.42	30.97
10.200	30.56	30.21	29.90	29.63	29.40
10.450	29.20	28.99	28.89	28.98	29.11
10.700	29.08	28.95	28.75	28.54	28.31
10.950	28.09	27.85	27.61	27.37	27.13
11.200	26.89	26.66	26.41	26.17	25.93
11.450	25.69	25.45	25.17	24.81	24.45
11.700	24.16	23.95	23.77	23.63	23.50
11.950	23.39	23.32	23.27	23.23	23.22
12.200	23.24	23.30	23.39	23.50	23.62
12.450	23.76	23.94	23.96	23.63	23.20
12.700	22.90	22.71	22.57	22.47	22.40
12.950	22.35	22.30	22.35	22.61	22.88
13.200	22.92	22.84	22.71	22.57	22.38
13.450	22.20	22.04	21.91	21.78	21.65
13.700	21.53	21.42	21.35	21.29	21.22
13.950	21.15	21.12	21.11	21.14	21.17
14.200	21.18	21.16	21.13	21.08	21.04
14.450	21.01	20.96	20.91	20.87	20.83
14.700	20.78	20.73	20.67	20.62	20.58
14.950	20.54	20.51	20.47	20.43	20.38
15.200	20.34	20.30	20.25	20.20	20.14
15.450	20.09	20.04	20.00	19.95	19.90
15.700	19.86	19.83	19.79	19.76	19.71
15.950	19.66	19.60	19.55	19.50	19.46
16.200	19.41	19.36	19.32	19.28	19.23
16.450	19.18	19.14	19.10	19.05	19.00
16.700	18.96	18.92	18.87	18.82	18.78
16.950	18.74	18.69	18.64	18.60	18.56
17.200	18.51	18.45	18.39	18.34	18.29
17.450	18.26	18.22	18.19	18.14	18.09
17.700	18.05	18.01	17.96	17.90	17.84
17.950	17.79	17.74	17.70	17.65	17.60
18.200	17.56	17.52	17.49	17.45	17.40
18.450	17.35	17.29	17.24	17.19	17.15
18.700	17.10	17.05	17.01	16.96	16.91
18.950	16.86	16.82	16.78	16.73	16.68
19.200	16.64	16.60	16.54	16.49	16.45
19.450	16.41	16.36	16.31	16.27	16.22
19.700	16.17	16.12	16.06	16.00	15.96

Centennial Site

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: CM-1

Storm Event: Idaho Maryland NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
19.950	15.92	15.89	15.85	15.80	15.75
20.200	15.71	15.67	15.62	15.56	15.50
20.450	15.44	15.40	15.36	15.30	15.25
20.700	15.21	15.17	15.14	15.10	15.05
20.950	15.00	14.94	14.88	14.84	14.80
21.200	14.74	14.69	14.65	14.61	14.56
21.450	14.51	14.46	14.42	14.37	14.32
21.700	14.28	14.23	14.18	14.13	14.09
21.950	14.05	13.99	13.94	13.90	13.86
22.200	13.81	13.75	13.69	13.63	13.59
22.450	13.55	13.52	13.48	13.43	13.38
22.700	13.34	13.29	13.24	13.19	13.13
22.950	13.07	13.02	12.98	12.93	12.88
23.200	12.83	12.80	12.76	12.73	12.68
23.450	12.62	12.56	12.50	12.46	12.42
23.700	12.36	12.31	12.27	12.23	12.17
23.950	12.13	12.08	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Unit Hydrograph Summary
Label: CM-1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Storm Event	Idaho Maryland NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	69.960 acres
<hr/>	
Computational Time Increment	0.027 hours
Time to Peak (Computed)	8.000 hours
Flow (Peak, Computed)	121.02 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	8.000 hours
Flow (Peak Interpolated Output)	121.02 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	77.000
Area (User Defined)	69.960 acres
Maximum Retention (Pervious)	3.0 in
Maximum Retention (Pervious, 20 percent)	0.6 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.8 in
Runoff Volume (Pervious)	39.629 ac-ft
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	39.469 ac-ft
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.200 hours
Computational Time Increment	0.027 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749

Centennial Site

Subsection: Unit Hydrograph Summary

Return Event: 100 years

Label: CM-1

Storm Event: Idaho Maryland NC 100-yr

SCS Unit Hydrograph Parameters	
Receding/Rising, Tr/Tp	1.670
Unit peak, qp	396.34 ft ³ /s
Unit peak time, Tp	0.133 hours
Unit receding limb, Tr	0.533 hours
Total unit time, Tb	0.667 hours

Centennial Site

Subsection: Unit Hydrograph (Hydrograph Table)

Return Event: 100 years

Label: CM-1

Storm Event: Idaho Maryland NC 100-yr

Storm Event	Idaho Maryland NC 100-yr
Return Event	100 years
Duration	24.000 hours
Depth	9.6 in
Time of Concentration (Composite)	0.200 hours
Area (User Defined)	69.960 acres

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft ³ /s)
2.400	0.00	0.02	0.08	0.20	0.36
2.650	0.55	0.75	0.95	1.15	1.36
2.900	1.56	1.76	1.95	2.14	2.32
3.150	2.50	2.67	2.85	3.03	3.21
3.400	3.41	3.60	3.81	4.02	4.26
3.650	4.52	4.78	5.04	5.28	5.52
3.900	5.76	6.01	6.24	6.47	6.67
4.150	6.87	7.07	7.28	7.50	7.73
4.400	7.98	8.23	8.48	8.74	9.01
4.650	9.28	9.55	9.83	10.13	10.43
4.900	10.75	11.08	11.41	11.76	12.14
5.150	12.55	12.95	13.34	13.72	14.09
5.400	14.45	14.81	15.16	15.49	15.75
5.650	15.98	16.25	16.57	16.94	17.33
5.900	17.75	18.19	18.68	19.24	19.98
6.150	20.79	21.54	22.19	22.77	23.29
6.400	23.76	24.19	24.57	24.79	24.68
6.650	24.41	24.27	24.37	24.67	25.11
6.900	25.69	26.35	27.14	28.03	29.04
7.150	30.14	31.38	32.70	34.19	35.75
7.400	37.47	39.28	41.40	46.42	59.18
7.650	75.96	90.80	101.46	109.25	114.80
7.900	118.52	120.60	121.02	118.24	108.92
8.150	96.59	85.42	77.13	70.48	65.07
8.400	60.37	56.44	52.98	50.52	49.54
8.650	49.48	49.24	48.51	47.45	46.30
8.900	45.05	43.82	42.60	41.43	40.28
9.150	39.20	38.13	37.15	36.18	35.28
9.400	34.42	33.64	32.90	32.36	32.19
9.650	32.26	32.27	32.14	31.93	31.67
9.900	31.39	31.09	30.78	30.46	30.07
10.150	29.66	29.27	28.94	28.64	28.38

Centennial Site

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

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
10.400	28.16	27.97	27.78	27.67	27.70
10.650	27.80	27.83	27.75	27.61	27.44
10.900	27.24	27.04	26.82	26.61	26.40
11.150	26.18	25.96	25.75	25.52	25.30
11.400	25.08	24.86	24.63	24.39	24.08
11.650	23.75	23.46	23.23	23.05	22.91
11.900	22.78	22.67	22.59	22.54	22.51
12.150	22.49	22.51	22.55	22.63	22.73
12.400	22.85	22.98	23.15	23.22	23.03
12.650	22.69	22.38	22.17	22.02	21.91
12.900	21.83	21.78	21.73	21.75	21.93
13.150	22.17	22.29	22.27	22.17	22.05
13.400	21.90	21.73	21.58	21.45	21.32
13.650	21.20	21.08	20.98	20.90	20.84
13.900	20.78	20.72	20.68	20.66	20.68
14.150	20.71	20.73	20.73	20.70	20.67
14.400	20.64	20.61	20.57	20.52	20.49
14.650	20.45	20.41	20.37	20.32	20.27
14.900	20.23	20.19	20.16	20.13	20.09
15.150	20.05	20.01	19.98	19.94	19.89
15.400	19.84	19.79	19.75	19.71	19.67
15.650	19.62	19.58	19.55	19.52	19.49
15.900	19.45	19.40	19.35	19.30	19.26
16.150	19.22	19.18	19.13	19.09	19.06
16.400	19.01	18.97	18.93	18.89	18.85
16.650	18.80	18.76	18.72	18.68	18.63
16.900	18.59	18.55	18.51	18.47	18.42
17.150	18.39	18.34	18.29	18.24	18.19
17.400	18.14	18.11	18.07	18.04	18.00
17.650	17.95	17.91	17.87	17.83	17.78
17.900	17.72	17.67	17.63	17.59	17.54
18.150	17.49	17.45	17.42	17.38	17.35
18.400	17.31	17.26	17.20	17.15	17.11
18.650	17.07	17.02	16.97	16.93	16.89
18.900	16.84	16.80	16.75	16.71	16.67
19.150	16.62	16.58	16.54	16.49	16.44
19.400	16.40	16.36	16.31	16.27	16.22
19.650	16.18	16.14	16.08	16.03	15.97
19.900	15.93	15.89	15.85	15.82	15.78
20.150	15.73	15.69	15.65	15.60	15.55
20.400	15.49	15.44	15.39	15.35	15.30
20.650	15.25	15.21	15.17	15.14	15.10

Centennial Site

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

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
20.900	15.06	15.00	14.95	14.89	14.85
21.150	14.81	14.76	14.71	14.66	14.62
21.400	14.57	14.53	14.48	14.44	14.39
21.650	14.34	14.30	14.26	14.21	14.16
21.900	14.12	14.07	14.03	13.98	13.93
22.150	13.89	13.84	13.79	13.73	13.68
22.400	13.63	13.59	13.55	13.52	13.47
22.650	13.42	13.38	13.34	13.29	13.24
22.900	13.18	13.12	13.07	13.03	12.98
23.150	12.93	12.89	12.85	12.81	12.78
23.400	12.73	12.68	12.62	12.57	12.52
23.650	12.48	12.43	12.38	12.33	12.29
23.900	12.24	12.19	12.16	(N/A)	(N/A)

Centennial Site

Subsection: Addition Summary
Label: O-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Summary for Hydrograph Addition at 'O-1'

	Upstream Link	Upstream Node
Outlet-1		PO-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1	28.027	8.350	45.14
Flow (In)	O-1	28.027	8.350	45.14

Centennial Site

Subsection: Addition Summary
Label: O-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Summary for Hydrograph Addition at 'O-1'

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

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	24.300	8.000	72.44
Flow (In)	O-1	24.300	8.000	72.44

Centennial Site

Subsection: Addition Summary
Label: O-1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Summary for Hydrograph Addition at 'O-1'

	Upstream Link	Upstream Node
Outlet-1		PO-1

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	Outlet-1	43.107	8.300	75.75
Flow (In)	O-1	43.107	8.300	75.75

Centennial Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
0.250	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
0.500	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
0.750	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
1.000	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
1.250	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
1.500	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
1.750	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
2.000	2,495.00	2,495.00	2,495.00	2,495.00	2,495.01
2.250	2,495.01	2,495.02	2,495.03	2,495.04	2,495.05
2.500	2,495.06	2,495.07	2,495.08	2,495.10	2,495.11
2.750	2,495.13	2,495.15	2,495.16	2,495.18	2,495.20
3.000	2,495.22	2,495.24	2,495.26	2,495.29	2,495.31
3.250	2,495.33	2,495.36	2,495.38	2,495.40	2,495.43
3.500	2,495.46	2,495.48	2,495.51	2,495.54	2,495.57
3.750	2,495.59	2,495.62	2,495.65	2,495.68	2,495.70
4.000	2,495.73	2,495.76	2,495.78	2,495.81	2,495.84
4.250	2,495.86	2,495.89	2,495.91	2,495.94	2,495.97
4.500	2,495.99	2,496.02	2,496.04	2,496.07	2,496.09
4.750	2,496.11	2,496.14	2,496.16	2,496.18	2,496.21
5.000	2,496.23	2,496.26	2,496.28	2,496.30	2,496.33
5.250	2,496.36	2,496.38	2,496.41	2,496.43	2,496.46
5.500	2,496.48	2,496.51	2,496.53	2,496.56	2,496.58
5.750	2,496.60	2,496.63	2,496.65	2,496.68	2,496.70
6.000	2,496.73	2,496.75	2,496.78	2,496.81	2,496.84
6.250	2,496.88	2,496.91	2,496.95	2,496.98	2,497.02
6.500	2,497.05	2,497.08	2,497.11	2,497.13	2,497.16
6.750	2,497.18	2,497.20	2,497.22	2,497.24	2,497.27
7.000	2,497.30	2,497.33	2,497.36	2,497.39	2,497.43
7.250	2,497.48	2,497.52	2,497.58	2,497.63	2,497.69
7.500	2,497.76	2,497.84	2,497.98	2,498.18	2,498.45
7.750	2,498.74	2,499.06	2,499.37	2,499.68	2,499.98
8.000	2,500.26	2,500.52	2,500.73	2,500.88	2,500.97
8.250	2,501.03	2,501.06	2,501.07	2,501.07	2,501.04
8.500	2,501.01	2,500.96	2,500.92	2,500.87	2,500.82
8.750	2,500.78	2,500.73	2,500.68	2,500.62	2,500.56
9.000	2,500.50	2,500.44	2,500.37	2,500.30	2,500.23
9.250	2,500.16	2,500.08	2,500.01	2,499.93	2,499.85
9.500	2,499.77	2,499.69	2,499.62	2,499.54	2,499.47
9.750	2,499.40	2,499.34	2,499.27	2,499.21	2,499.14
10.000	2,499.08	2,499.02	2,498.96	2,498.90	2,498.84

Centennial Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.250	2,498.78	2,498.73	2,498.67	2,498.62	2,498.57
10.500	2,498.52	2,498.47	2,498.42	2,498.37	2,498.33
10.750	2,498.29	2,498.25	2,498.21	2,498.18	2,498.14
11.000	2,498.10	2,498.07	2,498.04	2,498.00	2,497.97
11.250	2,497.94	2,497.91	2,497.88	2,497.85	2,497.82
11.500	2,497.79	2,497.76	2,497.73	2,497.70	2,497.68
11.750	2,497.65	2,497.62	2,497.60	2,497.57	2,497.55
12.000	2,497.52	2,497.50	2,497.48	2,497.46	2,497.44
12.250	2,497.42	2,497.41	2,497.39	2,497.38	2,497.37
12.500	2,497.36	2,497.35	2,497.34	2,497.33	2,497.32
12.750	2,497.30	2,497.29	2,497.28	2,497.27	2,497.26
13.000	2,497.25	2,497.24	2,497.23	2,497.22	2,497.22
13.250	2,497.21	2,497.21	2,497.20	2,497.19	2,497.19
13.500	2,497.18	2,497.17	2,497.17	2,497.16	2,497.15
13.750	2,497.14	2,497.14	2,497.13	2,497.12	2,497.12
14.000	2,497.11	2,497.10	2,497.10	2,497.09	2,497.09
14.250	2,497.08	2,497.08	2,497.07	2,497.07	2,497.06
14.500	2,497.06	2,497.06	2,497.05	2,497.05	2,497.04
14.750	2,497.04	2,497.04	2,497.03	2,497.03	2,497.02
15.000	2,497.02	2,497.02	2,497.01	2,497.01	2,497.01
15.250	2,497.00	2,497.00	2,497.00	2,496.99	2,496.99
15.500	2,496.99	2,496.98	2,496.98	2,496.98	2,496.97
15.750	2,496.97	2,496.97	2,496.96	2,496.96	2,496.96
16.000	2,496.95	2,496.95	2,496.95	2,496.94	2,496.94
16.250	2,496.94	2,496.93	2,496.93	2,496.93	2,496.92
16.500	2,496.92	2,496.92	2,496.91	2,496.91	2,496.91
16.750	2,496.90	2,496.90	2,496.90	2,496.89	2,496.89
17.000	2,496.89	2,496.89	2,496.88	2,496.88	2,496.88
17.250	2,496.87	2,496.87	2,496.87	2,496.86	2,496.86
17.500	2,496.86	2,496.85	2,496.85	2,496.85	2,496.84
17.750	2,496.84	2,496.84	2,496.83	2,496.83	2,496.83
18.000	2,496.82	2,496.82	2,496.82	2,496.82	2,496.81
18.250	2,496.81	2,496.81	2,496.80	2,496.80	2,496.80
18.500	2,496.79	2,496.79	2,496.79	2,496.78	2,496.78
18.750	2,496.78	2,496.77	2,496.77	2,496.77	2,496.76
19.000	2,496.76	2,496.76	2,496.75	2,496.75	2,496.75
19.250	2,496.74	2,496.74	2,496.74	2,496.74	2,496.73
19.500	2,496.73	2,496.73	2,496.72	2,496.72	2,496.72
19.750	2,496.71	2,496.71	2,496.71	2,496.70	2,496.70
20.000	2,496.70	2,496.69	2,496.69	2,496.69	2,496.68
20.250	2,496.68	2,496.68	2,496.67	2,496.67	2,496.67

Centennial Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours

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

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.500	2,496.66	2,496.66	2,496.66	2,496.65	2,496.65
20.750	2,496.65	2,496.64	2,496.64	2,496.64	2,496.63
21.000	2,496.63	2,496.63	2,496.62	2,496.62	2,496.62
21.250	2,496.61	2,496.61	2,496.61	2,496.60	2,496.60
21.500	2,496.60	2,496.59	2,496.59	2,496.59	2,496.59
21.750	2,496.58	2,496.58	2,496.58	2,496.57	2,496.57
22.000	2,496.57	2,496.56	2,496.56	2,496.56	2,496.55
22.250	2,496.55	2,496.55	2,496.54	2,496.54	2,496.54
22.500	2,496.53	2,496.53	2,496.53	2,496.52	2,496.52
22.750	2,496.52	2,496.51	2,496.51	2,496.51	2,496.50
23.000	2,496.50	2,496.50	2,496.49	2,496.49	2,496.49
23.250	2,496.48	2,496.48	2,496.48	2,496.47	2,496.47
23.500	2,496.47	2,496.46	2,496.46	2,496.45	2,496.45
23.750	2,496.45	2,496.44	2,496.44	2,496.44	2,496.43
24.000	2,496.43	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours

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

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
0.250	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
0.500	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
0.750	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
1.000	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
1.250	2,495.00	2,495.00	2,495.00	2,495.00	2,495.00
1.500	2,495.00	2,495.00	2,495.00	2,495.00	2,495.01
1.750	2,495.02	2,495.03	2,495.04	2,495.05	2,495.07
2.000	2,495.09	2,495.11	2,495.13	2,495.15	2,495.18
2.250	2,495.21	2,495.24	2,495.27	2,495.30	2,495.34
2.500	2,495.38	2,495.41	2,495.45	2,495.49	2,495.53
2.750	2,495.57	2,495.61	2,495.65	2,495.68	2,495.72
3.000	2,495.76	2,495.79	2,495.83	2,495.86	2,495.90
3.250	2,495.93	2,495.97	2,496.00	2,496.03	2,496.06
3.500	2,496.09	2,496.12	2,496.15	2,496.18	2,496.22
3.750	2,496.25	2,496.28	2,496.31	2,496.34	2,496.37
4.000	2,496.40	2,496.43	2,496.46	2,496.49	2,496.52
4.250	2,496.54	2,496.57	2,496.60	2,496.62	2,496.65
4.500	2,496.68	2,496.70	2,496.73	2,496.76	2,496.78
4.750	2,496.81	2,496.84	2,496.87	2,496.90	2,496.93
5.000	2,496.96	2,496.99	2,497.02	2,497.05	2,497.08
5.250	2,497.12	2,497.15	2,497.19	2,497.22	2,497.26
5.500	2,497.29	2,497.33	2,497.37	2,497.40	2,497.43
5.750	2,497.47	2,497.50	2,497.53	2,497.57	2,497.60
6.000	2,497.64	2,497.68	2,497.72	2,497.77	2,497.81
6.250	2,497.86	2,497.92	2,497.97	2,498.02	2,498.07
6.500	2,498.12	2,498.17	2,498.21	2,498.25	2,498.29
6.750	2,498.32	2,498.35	2,498.38	2,498.42	2,498.46
7.000	2,498.50	2,498.54	2,498.59	2,498.64	2,498.70
7.250	2,498.77	2,498.84	2,498.92	2,499.01	2,499.10
7.500	2,499.20	2,499.32	2,499.52	2,499.82	2,500.20
7.750	2,500.63	2,501.07	2,501.52	2,501.96	2,502.38
8.000	2,502.78	2,503.12	2,503.39	2,503.56	2,503.65
8.250	2,503.70	2,503.70	2,503.68	2,503.64	2,503.58
8.500	2,503.51	2,503.44	2,503.36	2,503.30	2,503.24
8.750	2,503.18	2,503.13	2,503.07	2,503.01	2,502.96
9.000	2,502.90	2,502.83	2,502.77	2,502.70	2,502.63
9.250	2,502.56	2,502.49	2,502.41	2,502.33	2,502.26
9.500	2,502.17	2,502.09	2,502.01	2,501.93	2,501.85
9.750	2,501.77	2,501.69	2,501.62	2,501.54	2,501.47
10.000	2,501.39	2,501.31	2,501.24	2,501.16	2,501.08

Centennial Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.250	2,501.01	2,500.93	2,500.85	2,500.78	2,500.70
10.500	2,500.63	2,500.56	2,500.49	2,500.42	2,500.35
10.750	2,500.29	2,500.23	2,500.17	2,500.11	2,500.05
11.000	2,499.99	2,499.93	2,499.87	2,499.81	2,499.75
11.250	2,499.70	2,499.64	2,499.59	2,499.53	2,499.48
11.500	2,499.42	2,499.37	2,499.32	2,499.27	2,499.21
11.750	2,499.16	2,499.11	2,499.06	2,499.01	2,498.96
12.000	2,498.92	2,498.87	2,498.83	2,498.79	2,498.75
12.250	2,498.71	2,498.68	2,498.64	2,498.61	2,498.58
12.500	2,498.56	2,498.53	2,498.51	2,498.48	2,498.46
12.750	2,498.43	2,498.40	2,498.37	2,498.35	2,498.32
13.000	2,498.30	2,498.28	2,498.26	2,498.24	2,498.22
13.250	2,498.21	2,498.19	2,498.18	2,498.16	2,498.15
13.500	2,498.13	2,498.12	2,498.10	2,498.08	2,498.07
13.750	2,498.05	2,498.04	2,498.02	2,498.01	2,497.99
14.000	2,497.98	2,497.96	2,497.95	2,497.94	2,497.93
14.250	2,497.92	2,497.90	2,497.90	2,497.89	2,497.88
14.500	2,497.87	2,497.86	2,497.85	2,497.84	2,497.83
14.750	2,497.82	2,497.82	2,497.81	2,497.80	2,497.79
15.000	2,497.79	2,497.78	2,497.77	2,497.76	2,497.76
15.250	2,497.75	2,497.74	2,497.74	2,497.73	2,497.73
15.500	2,497.72	2,497.71	2,497.71	2,497.70	2,497.69
15.750	2,497.69	2,497.68	2,497.68	2,497.67	2,497.66
16.000	2,497.66	2,497.65	2,497.65	2,497.64	2,497.64
16.250	2,497.63	2,497.62	2,497.62	2,497.61	2,497.61
16.500	2,497.60	2,497.60	2,497.59	2,497.58	2,497.58
16.750	2,497.57	2,497.57	2,497.56	2,497.56	2,497.55
17.000	2,497.55	2,497.54	2,497.54	2,497.53	2,497.53
17.250	2,497.52	2,497.51	2,497.51	2,497.50	2,497.50
17.500	2,497.49	2,497.49	2,497.48	2,497.48	2,497.47
17.750	2,497.47	2,497.46	2,497.46	2,497.45	2,497.45
18.000	2,497.44	2,497.43	2,497.43	2,497.42	2,497.42
18.250	2,497.41	2,497.41	2,497.40	2,497.40	2,497.39
18.500	2,497.39	2,497.38	2,497.38	2,497.37	2,497.37
18.750	2,497.36	2,497.36	2,497.35	2,497.35	2,497.34
19.000	2,497.34	2,497.33	2,497.33	2,497.32	2,497.32
19.250	2,497.31	2,497.31	2,497.30	2,497.30	2,497.29
19.500	2,497.29	2,497.28	2,497.28	2,497.27	2,497.27
19.750	2,497.26	2,497.26	2,497.25	2,497.25	2,497.24
20.000	2,497.24	2,497.23	2,497.23	2,497.22	2,497.22
20.250	2,497.21	2,497.21	2,497.20	2,497.20	2,497.19

Centennial Site

Subsection: Time vs. Elevation
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Time vs. Elevation (ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.500	2,497.19	2,497.18	2,497.18	2,497.17	2,497.17
20.750	2,497.16	2,497.16	2,497.15	2,497.15	2,497.14
21.000	2,497.14	2,497.13	2,497.13	2,497.12	2,497.12
21.250	2,497.11	2,497.11	2,497.10	2,497.10	2,497.09
21.500	2,497.09	2,497.08	2,497.08	2,497.07	2,497.07
21.750	2,497.06	2,497.06	2,497.05	2,497.05	2,497.04
22.000	2,497.04	2,497.03	2,497.03	2,497.02	2,497.02
22.250	2,497.01	2,497.01	2,497.00	2,497.00	2,496.99
22.500	2,496.98	2,496.98	2,496.97	2,496.97	2,496.96
22.750	2,496.96	2,496.95	2,496.95	2,496.94	2,496.94
23.000	2,496.93	2,496.93	2,496.92	2,496.92	2,496.91
23.250	2,496.91	2,496.90	2,496.90	2,496.89	2,496.89
23.500	2,496.88	2,496.88	2,496.87	2,496.87	2,496.86
23.750	2,496.86	2,496.85	2,496.85	2,496.84	2,496.84
24.000	2,496.83	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Time vs. Volume
 Label: PO-1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.001	0.002	0.004
2.250	0.007	0.010	0.014	0.018	0.023
2.500	0.029	0.035	0.042	0.050	0.058
2.750	0.066	0.075	0.084	0.094	0.104
3.000	0.114	0.125	0.137	0.148	0.160
3.250	0.172	0.185	0.197	0.211	0.224
3.500	0.238	0.253	0.267	0.282	0.297
3.750	0.311	0.326	0.341	0.356	0.371
4.000	0.386	0.401	0.415	0.430	0.444
4.250	0.459	0.473	0.487	0.501	0.516
4.500	0.530	0.544	0.558	0.572	0.585
4.750	0.598	0.612	0.625	0.639	0.652
5.000	0.666	0.679	0.693	0.707	0.722
5.250	0.736	0.751	0.766	0.781	0.796
5.500	0.811	0.825	0.840	0.853	0.867
5.750	0.881	0.894	0.908	0.922	0.937
6.000	0.952	0.968	0.984	1.003	1.022
6.250	1.042	1.062	1.083	1.104	1.124
6.500	1.143	1.162	1.180	1.195	1.209
6.750	1.222	1.235	1.248	1.262	1.277
7.000	1.293	1.311	1.331	1.353	1.378
7.250	1.405	1.434	1.466	1.501	1.539
7.500	1.581	1.634	1.719	1.850	2.024
7.750	2.221	2.434	2.652	2.871	3.087
8.000	3.293	3.487	3.646	3.761	3.838
8.250	3.884	3.908	3.915	3.909	3.891
8.500	3.864	3.829	3.791	3.756	3.721
8.750	3.685	3.648	3.609	3.567	3.523
9.000	3.477	3.428	3.377	3.325	3.272
9.250	3.218	3.163	3.108	3.051	2.994
9.500	2.937	2.881	2.827	2.775	2.726
9.750	2.677	2.629	2.583	2.539	2.495
10.000	2.453	2.411	2.370	2.329	2.289

Centennial Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.250	2.249	2.211	2.174	2.138	2.103
10.500	2.070	2.037	2.005	1.976	1.948
10.750	1.921	1.896	1.871	1.847	1.824
11.000	1.801	1.779	1.757	1.736	1.715
11.250	1.695	1.675	1.655	1.636	1.617
11.500	1.599	1.581	1.564	1.546	1.529
11.750	1.512	1.495	1.479	1.463	1.448
12.000	1.434	1.420	1.407	1.394	1.383
12.250	1.372	1.362	1.353	1.345	1.337
12.500	1.331	1.325	1.319	1.313	1.306
12.750	1.298	1.291	1.284	1.277	1.271
13.000	1.264	1.258	1.253	1.249	1.246
13.250	1.242	1.239	1.236	1.232	1.228
13.500	1.224	1.219	1.215	1.211	1.206
13.750	1.201	1.197	1.193	1.188	1.184
14.000	1.180	1.176	1.173	1.169	1.166
14.250	1.163	1.161	1.158	1.155	1.153
14.500	1.150	1.148	1.146	1.143	1.141
14.750	1.138	1.136	1.134	1.132	1.129
15.000	1.127	1.125	1.123	1.121	1.119
15.250	1.116	1.114	1.112	1.110	1.108
15.500	1.106	1.104	1.102	1.100	1.097
15.750	1.095	1.093	1.092	1.090	1.088
16.000	1.086	1.084	1.082	1.080	1.078
16.250	1.076	1.074	1.072	1.070	1.068
16.500	1.066	1.064	1.063	1.061	1.059
16.750	1.057	1.055	1.053	1.051	1.049
17.000	1.048	1.046	1.044	1.042	1.040
17.250	1.038	1.036	1.034	1.032	1.030
17.500	1.029	1.027	1.025	1.023	1.021
17.750	1.019	1.018	1.016	1.014	1.012
18.000	1.010	1.008	1.006	1.004	1.002
18.250	1.000	0.999	0.997	0.995	0.993
18.500	0.991	0.989	0.987	0.985	0.984
18.750	0.982	0.980	0.978	0.976	0.974
19.000	0.972	0.970	0.968	0.967	0.965
19.250	0.963	0.961	0.959	0.957	0.955
19.500	0.953	0.951	0.949	0.948	0.946
19.750	0.944	0.942	0.940	0.938	0.936
20.000	0.934	0.932	0.930	0.929	0.927
20.250	0.925	0.923	0.921	0.919	0.917

Centennial Site

Subsection: Time vs. Volume

Label: PO-1

Return Event: 10 years

Storm Event: Idaho Maryland NC 10-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

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

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.500	0.915	0.913	0.911	0.909	0.907
20.750	0.905	0.904	0.902	0.900	0.898
21.000	0.896	0.894	0.892	0.890	0.888
21.250	0.886	0.885	0.883	0.881	0.879
21.500	0.877	0.875	0.873	0.871	0.869
21.750	0.867	0.865	0.863	0.861	0.860
22.000	0.858	0.856	0.854	0.852	0.850
22.250	0.848	0.846	0.844	0.842	0.840
22.500	0.838	0.836	0.835	0.833	0.831
22.750	0.829	0.827	0.825	0.823	0.821
23.000	0.819	0.817	0.815	0.813	0.811
23.250	0.809	0.807	0.805	0.803	0.801
23.500	0.799	0.797	0.796	0.794	0.792
23.750	0.790	0.788	0.786	0.784	0.782
24.000	0.780	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Time vs. Volume
 Label: PO-1

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.001	0.003	0.005
1.750	0.009	0.014	0.020	0.027	0.035
2.000	0.044	0.055	0.066	0.079	0.093
2.250	0.107	0.123	0.140	0.157	0.176
2.500	0.195	0.215	0.236	0.257	0.278
2.750	0.299	0.320	0.340	0.361	0.381
3.000	0.401	0.421	0.440	0.460	0.479
3.250	0.497	0.516	0.535	0.552	0.570
3.500	0.587	0.604	0.621	0.639	0.656
3.750	0.674	0.692	0.710	0.728	0.745
4.000	0.763	0.780	0.797	0.814	0.830
4.250	0.845	0.860	0.876	0.891	0.907
4.500	0.922	0.938	0.954	0.970	0.986
4.750	1.002	1.019	1.036	1.053	1.071
5.000	1.089	1.107	1.126	1.145	1.165
5.250	1.185	1.206	1.228	1.249	1.271
5.500	1.293	1.315	1.336	1.357	1.378
5.750	1.398	1.419	1.440	1.461	1.483
6.000	1.506	1.530	1.557	1.585	1.616
6.250	1.648	1.681	1.714	1.747	1.779
6.500	1.811	1.842	1.871	1.896	1.919
6.750	1.940	1.961	1.983	2.006	2.031
7.000	2.058	2.087	2.119	2.155	2.194
7.250	2.238	2.287	2.341	2.400	2.463
7.500	2.533	2.620	2.757	2.970	3.250
7.750	3.571	3.916	4.272	4.631	4.984
8.000	5.323	5.629	5.867	6.023	6.108
8.250	6.147	6.152	6.133	6.095	6.043
8.500	5.981	5.912	5.845	5.785	5.731
8.750	5.681	5.631	5.582	5.532	5.480
9.000	5.426	5.370	5.313	5.254	5.194
9.250	5.134	5.073	5.009	4.943	4.875
9.500	4.807	4.737	4.669	4.602	4.537
9.750	4.473	4.410	4.349	4.288	4.226
10.000	4.165	4.104	4.043	3.983	3.923

Centennial Site

Subsection: Time vs. Volume
Label: PO-1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours
Time on left represents time for first value in each row.

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
10.250	3.863	3.803	3.743	3.685	3.628
10.500	3.572	3.518	3.465	3.414	3.365
10.750	3.317	3.270	3.225	3.180	3.137
11.000	3.093	3.050	3.007	2.965	2.924
11.250	2.883	2.844	2.805	2.767	2.729
11.500	2.690	2.653	2.616	2.579	2.543
11.750	2.507	2.472	2.438	2.405	2.372
12.000	2.340	2.309	2.280	2.252	2.225
12.250	2.200	2.177	2.155	2.134	2.115
12.500	2.097	2.081	2.065	2.048	2.030
12.750	2.012	1.994	1.977	1.960	1.944
13.000	1.928	1.913	1.900	1.889	1.878
13.250	1.868	1.859	1.849	1.839	1.829
13.500	1.818	1.808	1.798	1.787	1.777
13.750	1.767	1.757	1.747	1.737	1.728
14.000	1.719	1.710	1.701	1.694	1.687
14.250	1.680	1.673	1.667	1.661	1.655
14.500	1.649	1.643	1.638	1.633	1.627
14.750	1.622	1.617	1.612	1.607	1.603
15.000	1.598	1.593	1.589	1.585	1.580
15.250	1.576	1.572	1.568	1.564	1.560
15.500	1.556	1.552	1.548	1.544	1.540
15.750	1.536	1.532	1.529	1.525	1.521
16.000	1.518	1.514	1.510	1.507	1.503
16.250	1.500	1.496	1.493	1.489	1.486
16.500	1.482	1.479	1.475	1.472	1.468
16.750	1.465	1.462	1.458	1.455	1.452
17.000	1.448	1.445	1.442	1.438	1.435
17.250	1.432	1.428	1.425	1.421	1.418
17.500	1.415	1.411	1.408	1.405	1.401
17.750	1.398	1.395	1.392	1.388	1.385
18.000	1.382	1.379	1.375	1.372	1.369
18.250	1.366	1.363	1.359	1.356	1.353
18.500	1.350	1.347	1.344	1.341	1.338
18.750	1.334	1.331	1.328	1.325	1.322
19.000	1.319	1.316	1.313	1.310	1.307
19.250	1.303	1.300	1.297	1.294	1.291
19.500	1.288	1.285	1.282	1.279	1.276
19.750	1.273	1.270	1.267	1.264	1.260
20.000	1.257	1.254	1.251	1.248	1.245
20.250	1.242	1.239	1.236	1.233	1.230

Centennial Site

Subsection: Time vs. Volume

Return Event: 100 years

Label: PO-1

Storm Event: Idaho Maryland NC 100-yr

Time vs. Volume (ac-ft)

Output Time increment = 0.050 hours

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

Time (hours)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)	Volume (ac-ft)
20.500	1.227	1.224	1.221	1.218	1.215
20.750	1.212	1.209	1.206	1.203	1.200
21.000	1.197	1.194	1.191	1.187	1.184
21.250	1.181	1.178	1.175	1.172	1.169
21.500	1.166	1.163	1.160	1.157	1.154
21.750	1.151	1.148	1.145	1.142	1.139
22.000	1.136	1.133	1.130	1.127	1.124
22.250	1.121	1.118	1.115	1.111	1.108
22.500	1.105	1.102	1.099	1.096	1.093
22.750	1.090	1.087	1.084	1.081	1.078
23.000	1.075	1.072	1.069	1.066	1.063
23.250	1.060	1.057	1.054	1.051	1.048
23.500	1.045	1.042	1.039	1.036	1.033
23.750	1.031	1.028	1.025	1.022	1.019
24.000	1.016	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Elevation-Area Volume Curve

Return Event: 10 years

Label: PO-1

Storm Event: Idaho Maryland NC 10-yr

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
2,495.00	0.0	0.510	0.000	0.000	0.000
2,496.00	0.0	0.560	1.604	0.535	0.535
2,498.00	0.0	0.640	1.799	1.199	1.734
2,500.00	0.0	0.730	2.054	1.369	3.103
2,502.00	0.0	0.830	2.338	1.559	4.662
2,504.00	0.0	0.940	2.653	1.769	6.431
2,506.00	0.0	1.050	2.983	1.989	8.420
2,508.00	0.0	1.170	3.328	2.219	10.639
2,510.00	0.0	1.310	3.718	2.479	13.117

Centennial Site

Subsection: Volume Equations
Label: PO-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Pond Volume Equations

*** Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

where:	EL1, EL2	Lower and upper elevations of the increment
	Area1, Area2	Areas computed for EL1, EL2, respectively
	Volume	Incremental volume between EL1 and EL2

Centennial Site

Subsection: Elevation-Area Volume Curve

Return Event: 100 years

Label: PO-1

Storm Event: Idaho Maryland NC 100-yr

Elevation (ft)	Planimeter (ft ²)	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
2,495.00	0.0	0.510	0.000	0.000	0.000
2,496.00	0.0	0.560	1.604	0.535	0.535
2,498.00	0.0	0.640	1.799	1.199	1.734
2,500.00	0.0	0.730	2.054	1.369	3.103
2,502.00	0.0	0.830	2.338	1.559	4.662
2,504.00	0.0	0.940	2.653	1.769	6.431
2,506.00	0.0	1.050	2.983	1.989	8.420
2,508.00	0.0	1.170	3.328	2.219	10.639
2,510.00	0.0	1.310	3.718	2.479	13.117

Centennial Site

Subsection: Volume Equations

Return Event: 100 years

Label: PO-1

Storm Event: Idaho Maryland NC 100-yr

Pond Volume Equations

*** Incremental volume computed by the Conic Method for Reservoir Volumes.**

$$\text{Volume} = (1/3) * (\text{EL2} - \text{EL1}) * (\text{Area1} + \text{Area2} + \text{sqr}(\text{Area1} * \text{Area2}))$$

where: EL1, EL2 Lower and upper elevations of the increment
 Area1, Area2 Areas computed for EL1, EL2, respectively
 Volume Incremental volume between EL1 and EL2

Centennial Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	2,495.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	2,510.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 2	Forward	Culvert - 1	2,502.50	2,510.00
Stand Pipe	Riser - 1	Forward	Culvert - 1	2,505.00	2,510.00
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	2,495.00	2,510.00
Culvert-Circular	Culvert - 1	Forward	TW	2,495.00	2,510.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Centennial Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	48.0 in
Length	170.00 ft
Length (Computed Barrel)	170.07 ft
Slope (Computed)	0.029 ft/ft
<hr/>	
Outlet Control Data	
Manning's n	0.024
Ke	0.500
Kb	0.017
Kr	0.000
Convergence Tolerance	0.00 ft
<hr/>	
Inlet Control Data	
Equation Form	Form 1
K	0.0078
M	2.0000
C	0.0379
Y	0.6900
T1 ratio (HW/D)	1.121
T2 ratio (HW/D)	1.282
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.
 Use submerged inlet control 0 equation above T2 elevation

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

T1 Elevation	2,499.48 ft	T1 Flow	87.96 ft ³ /s
T2 Elevation	2,500.13 ft	T2 Flow	100.53 ft ³ /s

Centennial Site

Subsection: Outlet Input Data
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Structure ID: Riser - 1
 Structure Type: Stand Pipe

Number of Openings	1
Elevation	2,505.00 ft
Diameter	60.0 in
Orifice Area	19.6 ft ²
Orifice Coefficient	0.600
Weir Length	15.71 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: Orifice - 1
 Structure Type: Orifice-Circular

Number of Openings	6
Elevation	2,495.00 ft
Orifice Diameter	13.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 2
 Structure Type: Orifice-Circular

Number of Openings	6
Elevation	2,502.50 ft
Orifice Diameter	13.0 in
Orifice Coefficient	0.600

Structure ID: TW
 Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall
----------------	--------------

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft

Centennial Site

Subsection: Outlet Input Data
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Convergence Tolerances	
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Centennial Site

Subsection: Individual Outlet Curves
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

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

Mannings open channel maximum capacity: 143.53 ft³/s
 Upstream ID = Orifice - 2, Riser - 1, Orifice - 1
 Downstream ID = Tailwater (Pond Outfall)

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
2,495.00	0.00	0.00	0.00	Free Outfall	0.00	0.00	(N/A)	0.00
2,495.50	1.14	2,495.46	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,496.00	4.52	2,495.93	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,496.50	9.51	2,496.37	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,497.00	14.40	2,496.71	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,497.50	19.09	2,496.98	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,498.00	23.50	2,497.22	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,498.50	27.60	2,497.43	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,499.00	31.43	2,497.60	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,499.50	35.02	2,497.77	Free Outfall	Free Outfall	0.00	0.03	(N/A)	0.00
2,500.00	38.44	2,497.92	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,500.50	41.63	2,498.05	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,501.00	44.71	2,498.18	Free Outfall	Free Outfall	0.00	0.01	(N/A)	0.00
2,501.50	47.60	2,498.30	Free Outfall	Free Outfall	0.00	0.04	(N/A)	0.00
2,502.00	50.41	2,498.41	Free Outfall	Free Outfall	0.00	0.03	(N/A)	0.00
2,502.50	53.09	2,498.52	Free Outfall	Free Outfall	0.00	0.04	(N/A)	0.00
2,503.00	59.55	2,498.77	Free Outfall	Free Outfall	0.00	0.05	(N/A)	0.00
2,503.50	71.66	2,499.22	Free Outfall	Free Outfall	0.00	0.02	(N/A)	0.00
2,504.00	81.88	2,499.60	Free Outfall	Free Outfall	0.00	0.04	(N/A)	0.00
2,504.50	89.37	2,499.87	Free Outfall	Free Outfall	0.00	0.05	(N/A)	0.00
2,505.00	95.99	2,500.12	Free Outfall	Free Outfall	0.00	0.08	(N/A)	0.00
2,505.50	115.54	2,500.90	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,506.00	142.31	2,502.56	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,506.50	158.98	2,504.65	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,507.00	171.52	2,506.48	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,507.50	176.46	2,507.24	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,508.00	180.68	2,507.90	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,508.50	184.35	2,508.48	Free Outfall	Free Outfall	0.00	0.00	(N/A)	0.00
2,509.00	187.55	2,509.00	Free Outfall	Free Outfall	0.00	1.46	(N/A)	0.00
2,509.50	190.62	2,509.50	Free Outfall	Free Outfall	0.00	9.86	(N/A)	0.00
2,510.00	193.63	2,510.00	Free Outfall	Free Outfall	0.00	17.68	(N/A)	0.00

Message

WS below an invert; no flow.

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

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

Mannings open channel maximum capacity: 143.53 ft³/s
Upstream ID = Orifice - 2, Riser - 1, Orifice - 1
Downstream ID = Tailwater (Pond Outfall)

Message

CRIT.DEPTH CONTROL Vh= .104ft Dcr= .306ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .212ft Dcr= .614ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .316ft Dcr= .898ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .397ft Dcr= 1.111ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .466ft Dcr= 1.285ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .526ft Dcr= 1.431ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .580ft Dcr= 1.556ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .627ft Dcr= 1.664ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .671ft Dcr= 1.761ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .712ft Dcr= 1.849ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .750ft Dcr= 1.928ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .786ft Dcr= 2.001ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .820ft Dcr= 2.068ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .853ft Dcr= 2.131ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .884ft Dcr= 2.189ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .960ft Dcr= 2.325ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= 1.106ft Dcr= 2.560ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= 1.236ft Dcr= 2.742ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= 1.336ft Dcr= 2.866ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= 1.430ft Dcr= 2.970ft CRIT.DEPTH Hev= .00ft

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

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

Mannings open channel maximum capacity: 143.53 ft³/s
Upstream ID = Orifice - 2, Riser - 1, Orifice - 1
Downstream ID = Tailwater (Pond Outfall)

Message

INLET CONTROL... Submerged: HW =5.90
INLET CONTROL... Submerged: HW =7.56
FULL FLOW...Lfull=155.21ft Vh=2.487ft HL=10.212ft Hev= .00ft
FULL FLOW...Lfull=163.66ft Vh=2.895ft HL=12.296ft Hev= .00ft
FULL FLOW...Lfull=165.34ft Vh=3.064ft HL=13.102ft Hev= .00ft
FULL FLOW...Lfull=166.32ft Vh=3.213ft HL=13.788ft Hev= .00ft
FULL FLOW...Lfull=166.85ft Vh=3.345ft HL=14.384ft Hev= .00ft
FULL FLOW...Lfull=167.48ft Vh=3.462ft HL=14.924ft Hev= .00ft
FULL FLOW...Lfull=167.73ft Vh=3.576ft HL=15.431ft Hev= .00ft
FULL FLOW...Lfull=167.96ft Vh=3.690ft HL=15.938ft Hev= .00ft

Centennial Site

Subsection: Individual Outlet Curves
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Riser - 1 (Stand Pipe)

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

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
2,495.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
2,495.50	0.00	0.00	0.00	2,495.46	0.00	0.00	(N/A)	0.00
2,496.00	0.00	0.00	0.00	2,495.93	0.00	0.00	(N/A)	0.00
2,496.50	0.00	0.00	0.00	2,496.37	0.00	0.00	(N/A)	0.00
2,497.00	0.00	0.00	0.00	2,496.71	0.00	0.00	(N/A)	0.00
2,497.50	0.00	0.00	0.00	2,496.98	0.00	0.00	(N/A)	0.00
2,498.00	0.00	0.00	0.00	2,497.22	0.00	0.00	(N/A)	0.00
2,498.50	0.00	0.00	0.00	2,497.43	0.00	0.00	(N/A)	0.00
2,499.00	0.00	0.00	0.00	2,497.60	0.00	0.00	(N/A)	0.00
2,499.50	0.00	0.00	0.00	2,497.77	0.00	0.00	(N/A)	0.00
2,500.00	0.00	0.00	0.00	2,497.92	0.00	0.00	(N/A)	0.00
2,500.50	0.00	0.00	0.00	2,498.05	0.00	0.00	(N/A)	0.00
2,501.00	0.00	0.00	0.00	2,498.18	0.00	0.00	(N/A)	0.00
2,501.50	0.00	0.00	0.00	2,498.30	0.00	0.00	(N/A)	0.00
2,502.00	0.00	0.00	0.00	2,498.41	0.00	0.00	(N/A)	0.00
2,502.50	0.00	0.00	0.00	2,498.52	0.00	0.00	(N/A)	0.00
2,503.00	0.00	0.00	0.00	2,498.77	0.00	0.00	(N/A)	0.00
2,503.50	0.00	0.00	0.00	2,499.22	0.00	0.00	(N/A)	0.00
2,504.00	0.00	0.00	0.00	2,499.60	0.00	0.00	(N/A)	0.00
2,504.50	0.00	0.00	0.00	2,499.87	0.00	0.00	(N/A)	0.00
2,505.00	0.00	0.00	0.00	2,500.12	0.00	0.00	(N/A)	0.00
2,505.50	16.66	2,505.50	Free Outfall	2,500.90	0.00	0.00	(N/A)	0.00
2,506.00	47.12	2,506.00	Free Outfall	2,502.56	0.00	0.00	(N/A)	0.00
2,506.50	86.57	2,506.50	Free Outfall	2,504.65	0.00	0.00	(N/A)	0.00
2,507.00	133.29	2,507.00	2,506.48	2,506.48	0.00	0.00	(N/A)	0.00
2,507.50	149.42	2,507.50	2,507.24	2,507.24	0.00	0.00	(N/A)	0.00
2,508.00	163.69	2,508.00	2,507.90	2,507.90	0.00	0.00	(N/A)	0.00
2,508.50	176.80	2,508.50	2,508.48	2,508.48	0.00	0.00	(N/A)	0.00
2,509.00	189.01	2,509.00	2,509.00	2,509.00	0.00	0.00	(N/A)	0.00
2,509.50	200.47	2,509.50	2,509.50	2,509.50	0.00	0.00	(N/A)	0.00
2,510.00	211.32	2,510.00	2,510.00	2,510.00	0.00	0.00	(N/A)	0.00

Message

WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

RATING TABLE FOR ONE OUTLET TYPE Structure ID = Riser - 1 (Stand Pipe)

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

Message

WS below an invert; no flow.
Weir: H =0.5ft
Weir: H =1ft
Weir: H =1.5ft
FULLY CHARGED RISER: ADJUSTED TO
WEIR: H =2ft
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=2.50
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=3.00
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=3.50
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=4.00
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=4.50
FULLY CHARGED RISER: Orifice
Equation Control to Crest; H=5.00

Centennial Site

Subsection: Individual Outlet Curves
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

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

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

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
2,495.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
2,495.50	1.22	2,495.50	2,495.46	2,495.46	0.00	0.00	(N/A)	0.00
2,496.00	4.68	2,496.00	2,495.93	2,495.93	0.00	0.00	(N/A)	0.00
2,496.50	9.51	2,496.50	2,496.37	2,496.37	0.00	0.00	(N/A)	0.00
2,497.00	14.41	2,497.00	2,496.71	2,496.71	0.00	0.00	(N/A)	0.00
2,497.50	19.11	2,497.50	2,496.98	2,496.98	0.00	0.00	(N/A)	0.00
2,498.00	23.50	2,498.00	2,497.22	2,497.22	0.00	0.00	(N/A)	0.00
2,498.50	27.60	2,498.50	2,497.43	2,497.43	0.00	0.00	(N/A)	0.00
2,499.00	31.44	2,499.00	2,497.60	2,497.60	0.00	0.00	(N/A)	0.00
2,499.50	35.04	2,499.50	2,497.77	2,497.77	0.00	0.00	(N/A)	0.00
2,500.00	38.42	2,500.00	2,497.92	2,497.92	0.00	0.00	(N/A)	0.00
2,500.50	41.65	2,500.50	2,498.05	2,498.05	0.00	0.00	(N/A)	0.00
2,501.00	44.71	2,501.00	2,498.18	2,498.18	0.00	0.00	(N/A)	0.00
2,501.50	47.64	2,501.50	2,498.30	2,498.30	0.00	0.00	(N/A)	0.00
2,502.00	50.44	2,502.00	2,498.41	2,498.41	0.00	0.00	(N/A)	0.00
2,502.50	53.13	2,502.50	2,498.52	2,498.52	0.00	0.00	(N/A)	0.00
2,503.00	54.78	2,503.00	2,498.77	2,498.77	0.00	0.00	(N/A)	0.00
2,503.50	55.08	2,503.50	2,499.22	2,499.22	0.00	0.00	(N/A)	0.00
2,504.00	55.87	2,504.00	2,499.60	2,499.60	0.00	0.00	(N/A)	0.00
2,504.50	57.27	2,504.50	2,499.87	2,499.87	0.00	0.00	(N/A)	0.00
2,505.00	58.82	2,505.00	2,500.12	2,500.12	0.00	0.00	(N/A)	0.00
2,505.50	57.06	2,505.50	2,500.90	2,500.90	0.00	0.00	(N/A)	0.00
2,506.00	49.36	2,506.00	2,502.56	2,502.56	0.00	0.00	(N/A)	0.00
2,506.50	36.21	2,506.50	2,504.65	2,504.65	0.00	0.00	(N/A)	0.00
2,507.00	19.12	2,507.00	2,506.48	2,506.48	0.00	0.00	(N/A)	0.00
2,507.50	13.52	2,507.50	2,507.24	2,507.24	0.00	0.00	(N/A)	0.00
2,508.00	8.50	2,508.00	2,507.90	2,507.90	0.00	0.00	(N/A)	0.00
2,508.50	3.78	2,508.50	2,508.48	2,508.48	0.00	0.00	(N/A)	0.00
2,509.00	0.00	2,509.00	2,509.00	2,509.00	0.00	0.00	(N/A)	0.00
2,509.50	0.00	2,509.50	2,509.50	2,509.50	0.00	0.00	(N/A)	0.00
2,510.00	0.00	2,510.00	2,510.00	2,510.00	0.00	0.00	(N/A)	0.00

Message

WS below an invert; no flow.
 BACKWATER CONTROL.. Vh= .038ft
 hwdI= .461ft Lbw= .0ft Hev= .00ft

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

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

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

Message

BACKWATER CONTROL.. Vh= .068ft
hwDi= .931ft Lbw= .0ft Hev= .00ft

H =.13

H =.29

H =.52

H =.78

H =1.07

H =1.40

H =1.73

H =2.08

H =2.45

H =2.82

H =3.20

H =3.59

H =3.98

H =4.23

H =4.28

H =4.40

H =4.63

H =4.88

H =4.60

H =3.44

H =1.85

H =.52

H =.26

H =.10

H =.02

FLOW PRECEDENCE SET TO
DOWNSTREAM CONTROLLING
STRUCTURE

FLOW PRECEDENCE SET TO
DOWNSTREAM CONTROLLING
STRUCTURE

FLOW PRECEDENCE SET TO
DOWNSTREAM CONTROLLING
STRUCTURE

Centennial Site

Subsection: Individual Outlet Curves
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

RATING TABLE FOR ONE OUTLET TYPE
 Structure ID = Orifice - 2 (Orifice-Circular)

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

Water Surface Elevation (ft)	Device Flow (ft ³ /s)	(into) Headwater Hydraulic Grade Line (ft)	Converge Downstream Hydraulic Grade Line (ft)	Next Downstream Hydraulic Grade Line (ft)	Downstream Hydraulic Grade Line Error (ft)	Convergence Error (ft ³ /s)	Downstream Channel Tailwater (ft)	Tailwater Error (ft)
2,495.00	0.00	0.00	0.00	0.00	0.00	0.00	(N/A)	0.00
2,495.50	0.00	0.00	0.00	2,495.46	0.00	0.00	(N/A)	0.00
2,496.00	0.00	0.00	0.00	2,495.93	0.00	0.00	(N/A)	0.00
2,496.50	0.00	0.00	0.00	2,496.37	0.00	0.00	(N/A)	0.00
2,497.00	0.00	0.00	0.00	2,496.71	0.00	0.00	(N/A)	0.00
2,497.50	0.00	0.00	0.00	2,496.98	0.00	0.00	(N/A)	0.00
2,498.00	0.00	0.00	0.00	2,497.22	0.00	0.00	(N/A)	0.00
2,498.50	0.00	0.00	0.00	2,497.43	0.00	0.00	(N/A)	0.00
2,499.00	0.00	0.00	0.00	2,497.60	0.00	0.00	(N/A)	0.00
2,499.50	0.00	0.00	0.00	2,497.77	0.00	0.00	(N/A)	0.00
2,500.00	0.00	0.00	0.00	2,497.92	0.00	0.00	(N/A)	0.00
2,500.50	0.00	0.00	0.00	2,498.05	0.00	0.00	(N/A)	0.00
2,501.00	0.00	0.00	0.00	2,498.18	0.00	0.00	(N/A)	0.00
2,501.50	0.00	0.00	0.00	2,498.30	0.00	0.00	(N/A)	0.00
2,502.00	0.00	0.00	0.00	2,498.41	0.00	0.00	(N/A)	0.00
2,502.50	0.00	0.00	0.00	2,498.52	0.00	0.00	(N/A)	0.00
2,503.00	4.82	2,503.00	Free Outfall	2,498.77	0.00	0.00	(N/A)	0.00
2,503.50	16.61	2,503.50	Free Outfall	2,499.22	0.00	0.00	(N/A)	0.00
2,504.00	26.06	2,504.00	Free Outfall	2,499.60	0.00	0.00	(N/A)	0.00
2,504.50	32.14	2,504.50	Free Outfall	2,499.87	0.00	0.00	(N/A)	0.00
2,505.00	37.25	2,505.00	Free Outfall	2,500.12	0.00	0.00	(N/A)	0.00
2,505.50	41.74	2,505.50	Free Outfall	2,500.90	0.00	0.00	(N/A)	0.00
2,506.00	45.78	2,506.00	2,502.56	2,502.56	0.00	0.00	(N/A)	0.00
2,506.50	36.21	2,506.50	2,504.65	2,504.65	0.00	0.00	(N/A)	0.00
2,507.00	19.12	2,507.00	2,506.48	2,506.48	0.00	0.00	(N/A)	0.00
2,507.50	13.52	2,507.50	2,507.24	2,507.24	0.00	0.00	(N/A)	0.00
2,508.00	8.50	2,508.00	2,507.90	2,507.90	0.00	0.00	(N/A)	0.00
2,508.50	3.78	2,508.50	2,508.48	2,508.48	0.00	0.00	(N/A)	0.00
2,509.00	0.00	2,509.00	2,509.00	2,509.00	0.00	0.00	(N/A)	0.00
2,509.50	0.00	2,509.50	2,509.50	2,509.50	0.00	0.00	(N/A)	0.00
2,510.00	0.00	2,510.00	2,510.00	2,510.00	0.00	0.00	(N/A)	0.00

Message

WS below an invert; no flow.
 WS below an invert; no flow.
 WS below an invert; no flow.

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = Orifice - 2 (Orifice-Circular)

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

Message

WS below an invert; no flow.
CRIT.DEPTH CONTROL Vh= .134ft
Dcr= .366ft CRIT.DEPTH Hev= .00ft
CRIT.DEPTH CONTROL Vh= .302ft
Dcr= .698ft CRIT.DEPTH Hev= .00ft
H =.96
H =1.46
H =1.96
H =2.46
H =2.96
H =1.85
H =.52
H =.26
H =.10
H =.02
FLOW PRECEDENCE SET TO
DOWNSTREAM CONTROLLING
STRUCTURE
FLOW PRECEDENCE SET TO
DOWNSTREAM CONTROLLING
STRUCTURE
FLOW PRECEDENCE SET TO
DOWNSTREAM CONTROLLING
STRUCTURE

Centennial Site

Subsection: Composite Rating Curve
 Label: Composite Outlet Structure - 1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
2,495.00	0.00	(N/A)	0.00
2,495.50	1.18	(N/A)	0.00
2,496.00	4.60	(N/A)	0.00
2,496.50	9.51	(N/A)	0.00
2,497.00	14.40	(N/A)	0.00
2,497.50	19.09	(N/A)	0.00
2,498.00	23.50	(N/A)	0.00
2,498.50	27.60	(N/A)	0.00
2,499.00	31.43	(N/A)	0.00
2,499.50	35.02	(N/A)	0.00
2,500.00	38.44	(N/A)	0.00
2,500.50	41.63	(N/A)	0.00
2,501.00	44.71	(N/A)	0.00
2,501.50	47.60	(N/A)	0.00
2,502.00	50.41	(N/A)	0.00
2,502.50	53.09	(N/A)	0.00
2,503.00	59.55	(N/A)	0.00
2,503.50	71.66	(N/A)	0.00
2,504.00	81.88	(N/A)	0.00
2,504.50	89.37	(N/A)	0.00
2,505.00	95.99	(N/A)	0.00
2,505.50	115.46	(N/A)	0.00
2,506.00	142.27	(N/A)	0.00
2,506.50	158.98	(N/A)	0.00
2,507.00	171.52	(N/A)	0.00
2,507.50	176.46	(N/A)	0.00
2,508.00	180.68	(N/A)	0.00
2,508.50	184.35	(N/A)	0.00
2,509.00	187.55	(N/A)	0.00
2,509.50	190.62	(N/A)	0.00
2,510.00	193.63	(N/A)	0.00

Contributing Structures

(no Q: Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1)
 Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
 Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
 Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
 Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)

Centennial Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Composite Outflow Summary

Contributing Structures

Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1

Centennial Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Composite Outflow Summary

Contributing Structures

Riser - 1,Culvert - 1 (no Q: Orifice -
2,Orifice - 1)

Riser - 1,Culvert - 1 (no Q: Orifice -
2,Orifice - 1)

Riser - 1,Culvert - 1 (no Q: Orifice -
2,Orifice - 1)

Centennial Site

Subsection: Outlet Input Data

Return Event: 100 years

Label: Composite Outlet Structure - 1

Storm Event: Idaho Maryland NC 100-yr

Requested Pond Water Surface Elevations	
Minimum (Headwater)	2,495.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	2,510.00 ft

Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 2	Forward	Culvert - 1	2,502.50	2,510.00
Stand Pipe	Riser - 1	Forward	Culvert - 1	2,505.00	2,510.00
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	2,495.00	2,510.00
Culvert-Circular	Culvert - 1	Forward	TW	2,495.00	2,510.00
Tailwater Settings	Tailwater			(N/A)	(N/A)

Centennial Site

Subsection: Outlet Input Data

Return Event: 100 years

Label: Composite Outlet Structure - 1

Storm Event: Idaho Maryland NC 100-yr

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	48.0 in
Length	170.00 ft
Length (Computed Barrel)	170.07 ft
Slope (Computed)	0.029 ft/ft
Outlet Control Data	
Manning's n	0.024
Ke	0.500
Kb	0.017
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0078
M	2.0000
C	0.0379
Y	0.6900
T1 ratio (HW/D)	1.121
T2 ratio (HW/D)	1.282
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

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

T1 Elevation	2,499.48 ft	T1 Flow	87.96 ft ³ /s
T2 Elevation	2,500.13 ft	T2 Flow	100.53 ft ³ /s

Centennial Site

Subsection: Outlet Input Data

Return Event: 100 years

Label: Composite Outlet Structure - 1

Storm Event: Idaho Maryland NC 100-yr

Structure ID: Riser - 1
Structure Type: Stand Pipe

Number of Openings	1
Elevation	2,505.00 ft
Diameter	60.0 in
Orifice Area	19.6 ft ²
Orifice Coefficient	0.600
Weir Length	15.71 ft
Weir Coefficient	3.00 (ft ^{0.5})/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	False

Structure ID: Orifice - 1
Structure Type: Orifice-Circular

Number of Openings	6
Elevation	2,495.00 ft
Orifice Diameter	13.0 in
Orifice Coefficient	0.600

Structure ID: Orifice - 2
Structure Type: Orifice-Circular

Number of Openings	6
Elevation	2,502.50 ft
Orifice Diameter	13.0 in
Orifice Coefficient	0.600

Structure ID: TW
Structure Type: TW Setup, DS Channel

Tailwater Type	Free Outfall
----------------	--------------

Convergence Tolerances

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft

Centennial Site

Subsection: Outlet Input Data

Return Event: 100 years

Label: Composite Outlet Structure - 1

Storm Event: Idaho Maryland NC 100-yr

Convergence Tolerances	
Flow Tolerance (Minimum)	0.001 ft ³ /s
Flow Tolerance (Maximum)	10.000 ft ³ /s

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

RATING TABLE FOR ONE OUTLET TYPE Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

RATING TABLE FOR ONE OUTLET TYPE Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft) Contributing Structures	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
---	------------------------------	-----------------------------	---------------------------

Centennial Site

Subsection: Individual Outlet Curves
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

RATING TABLE FOR ONE OUTLET TYPE
Structure ID = ()

Upstream ID =
Downstream ID =

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
Contributing Structures			

Centennial Site

Subsection: Composite Rating Curve
 Label: Composite Outlet Structure - 1

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
2,495.00	0.00	(N/A)	0.00
2,495.50	1.18	(N/A)	0.00
2,496.00	4.60	(N/A)	0.00
2,496.50	9.51	(N/A)	0.00
2,497.00	14.40	(N/A)	0.00
2,497.50	19.09	(N/A)	0.00
2,498.00	23.50	(N/A)	0.00
2,498.50	27.60	(N/A)	0.00
2,499.00	31.43	(N/A)	0.00
2,499.50	35.02	(N/A)	0.00
2,500.00	38.44	(N/A)	0.00
2,500.50	41.63	(N/A)	0.00
2,501.00	44.71	(N/A)	0.00
2,501.50	47.60	(N/A)	0.00
2,502.00	50.41	(N/A)	0.00
2,502.50	53.09	(N/A)	0.00
2,503.00	59.55	(N/A)	0.00
2,503.50	71.64	(N/A)	0.00
2,504.00	81.86	(N/A)	0.00
2,504.50	89.37	(N/A)	0.00
2,505.00	96.02	(N/A)	0.00
2,505.50	115.46	(N/A)	0.00
2,506.00	142.27	(N/A)	0.00
2,506.50	158.98	(N/A)	0.00
2,507.00	171.52	(N/A)	0.00
2,507.50	176.46	(N/A)	0.00
2,508.00	180.68	(N/A)	0.00
2,508.50	184.35	(N/A)	0.00
2,509.00	187.55	(N/A)	0.00
2,509.50	190.62	(N/A)	0.00
2,510.00	193.63	(N/A)	0.00

Contributing Structures

(no Q: Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1)
 Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
 Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
 Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
 Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)

Centennial Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Composite Outflow Summary

Contributing Structures

Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 1,Culvert - 1 (no Q: Orifice - 2,Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Orifice - 1,Culvert - 1 (no Q: Riser - 1)
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1
Orifice - 2,Riser - 1,Orifice - 1,Culvert - 1

Centennial Site

Subsection: Composite Rating Curve
Label: Composite Outlet Structure - 1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Composite Outflow Summary

Contributing Structures

Riser - 1,Culvert - 1 (no Q: Orifice - 2,Orifice - 1)
Riser - 1,Culvert - 1 (no Q: Orifice - 2,Orifice - 1)
Riser - 1,Culvert - 1 (no Q: Orifice - 2,Orifice - 1)

Centennial Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Peak Discharge	45.14 ft ³ /s
Time to Peak	8.350 hours
Hydrograph Volume	28.027 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)
2.000	0.00	0.00	0.00	0.01	0.02
2.250	0.03	0.05	0.06	0.08	0.11
2.500	0.13	0.16	0.20	0.23	0.27
2.750	0.30	0.34	0.39	0.43	0.48
3.000	0.52	0.57	0.63	0.68	0.73
3.250	0.78	0.84	0.90	0.96	1.02
3.500	1.08	1.14	1.26	1.45	1.63
3.750	1.82	2.01	2.20	2.38	2.57
4.000	2.76	2.94	3.13	3.31	3.49
4.250	3.66	3.84	4.02	4.19	4.37
4.500	4.54	4.77	5.01	5.24	5.48
4.750	5.71	5.94	6.18	6.41	6.64
5.000	6.87	7.11	7.35	7.59	7.84
5.250	8.09	8.34	8.59	8.85	9.10
5.500	9.35	9.60	9.84	10.07	10.30
5.750	10.53	10.76	10.99	11.23	11.47
6.000	11.72	11.98	12.26	12.56	12.88
6.250	13.21	13.55	13.89	14.22	14.55
6.500	14.85	15.15	15.42	15.66	15.87
6.750	16.07	16.27	16.47	16.69	16.92
7.000	17.18	17.45	17.76	18.10	18.47
7.250	18.88	19.31	19.75	20.25	20.79
7.500	21.38	22.12	23.29	24.98	27.16
7.750	29.46	31.83	34.08	36.24	38.29
8.000	40.09	41.74	43.02	43.95	44.56
8.250	44.91	45.09	45.14	45.09	44.96
8.500	44.76	44.48	44.19	43.90	43.63
8.750	43.34	43.04	42.72	42.39	42.03
9.000	41.65	41.24	40.81	40.36	39.90
9.250	39.44	38.96	38.48	37.95	37.41
9.500	36.87	36.34	35.82	35.32	34.83
9.750	34.33	33.85	33.38	32.92	32.46
10.000	32.02	31.59	31.14	30.67	30.22
10.250	29.78	29.34	28.92	28.51	28.11
10.500	27.72	27.32	26.93	26.56	26.21
10.750	25.88	25.56	25.24	24.94	24.65
11.000	24.36	24.08	23.80	23.53	23.24

Centennial Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
11.250	22.96	22.68	22.41	22.14	21.88
11.500	21.63	21.38	21.13	20.89	20.64
11.750	20.40	20.17	19.94	19.72	19.51
12.000	19.31	19.11	18.91	18.72	18.54
12.250	18.38	18.22	18.08	17.96	17.85
12.500	17.75	17.66	17.57	17.47	17.37
12.750	17.25	17.14	17.03	16.93	16.82
13.000	16.73	16.63	16.56	16.49	16.44
13.250	16.39	16.34	16.28	16.23	16.17
13.500	16.10	16.03	15.97	15.90	15.83
13.750	15.76	15.69	15.62	15.55	15.49
14.000	15.42	15.36	15.31	15.26	15.21
14.250	15.17	15.12	15.08	15.04	15.00
14.500	14.96	14.92	14.89	14.85	14.81
14.750	14.78	14.74	14.70	14.67	14.63
15.000	14.60	14.56	14.53	14.50	14.46
15.250	14.43	14.40	14.36	14.33	14.29
15.500	14.26	14.23	14.19	14.16	14.12
15.750	14.09	14.06	14.03	13.99	13.96
16.000	13.93	13.90	13.87	13.83	13.80
16.250	13.77	13.74	13.71	13.68	13.64
16.500	13.61	13.58	13.55	13.52	13.49
16.750	13.46	13.43	13.40	13.36	13.33
17.000	13.30	13.27	13.24	13.21	13.18
17.250	13.15	13.12	13.09	13.05	13.02
17.500	12.99	12.96	12.93	12.90	12.87
17.750	12.84	12.81	12.78	12.75	12.72
18.000	12.68	12.65	12.62	12.59	12.56
18.250	12.53	12.50	12.47	12.44	12.40
18.500	12.37	12.34	12.31	12.28	12.25
18.750	12.22	12.18	12.15	12.12	12.09
19.000	12.06	12.03	12.00	11.96	11.93
19.250	11.90	11.87	11.84	11.81	11.78
19.500	11.74	11.71	11.68	11.65	11.62
19.750	11.59	11.56	11.52	11.49	11.46
20.000	11.43	11.39	11.36	11.33	11.30
20.250	11.27	11.24	11.21	11.17	11.14
20.500	11.11	11.08	11.04	11.01	10.98
20.750	10.95	10.92	10.88	10.85	10.82
21.000	10.79	10.76	10.73	10.69	10.66
21.250	10.63	10.60	10.56	10.53	10.50
21.500	10.47	10.44	10.40	10.37	10.34

Centennial Site

Subsection: Diverted Hydrograph
 Label: Outlet-1

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

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

Time (hours)	Flow (ft ³ /s)				
21.750	10.31	10.27	10.24	10.21	10.18
22.000	10.15	10.11	10.08	10.05	10.02
22.250	9.98	9.95	9.92	9.89	9.85
22.500	9.82	9.79	9.76	9.72	9.69
22.750	9.66	9.63	9.60	9.56	9.53
23.000	9.50	9.46	9.43	9.39	9.36
23.250	9.33	9.29	9.26	9.23	9.20
23.500	9.16	9.13	9.10	9.06	9.03
23.750	9.00	8.96	8.93	8.90	8.86
24.000	8.83	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Peak Discharge	75.75 ft ³ /s
Time to Peak	8.300 hours
Hydrograph Volume	43.107 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
1.550	0.00	0.00	0.01	0.02	0.04
1.800	0.06	0.09	0.12	0.16	0.21
2.050	0.25	0.31	0.36	0.43	0.49
2.300	0.56	0.64	0.72	0.80	0.89
2.550	0.98	1.07	1.17	1.40	1.67
2.800	1.93	2.19	2.44	2.70	2.95
3.050	3.20	3.44	3.68	3.91	4.14
3.300	4.37	4.60	4.91	5.21	5.51
3.550	5.81	6.10	6.41	6.71	7.02
3.800	7.33	7.63	7.94	8.24	8.54
4.050	8.83	9.12	9.40	9.67	9.93
4.300	10.19	10.45	10.71	10.97	11.23
4.550	11.49	11.75	12.02	12.29	12.56
4.800	12.83	13.11	13.40	13.69	13.98
5.050	14.28	14.58	14.88	15.19	15.51
5.300	15.83	16.16	16.50	16.83	17.17
5.550	17.50	17.83	18.15	18.47	18.78
5.800	19.10	19.39	19.69	20.00	20.33
6.050	20.67	21.03	21.43	21.86	22.31
6.300	22.76	23.22	23.66	24.07	24.48
6.550	24.88	25.25	25.56	25.85	26.11
6.800	26.38	26.65	26.94	27.25	27.58
7.050	27.92	28.29	28.70	29.15	29.65
7.300	30.20	30.81	31.47	32.13	32.85
7.550	33.75	35.15	37.18	39.71	42.42
7.800	45.14	47.73	50.20	52.47	56.68
8.050	62.54	68.96	72.87	74.78	75.63
8.300	75.75	75.32	74.48	73.32	71.93
8.550	70.15	68.36	66.76	65.33	63.96
8.800	62.61	61.27	59.91	58.99	58.20
9.050	57.37	56.52	55.65	54.75	53.85
9.300	53.02	52.62	52.21	51.78	51.34
9.550	50.90	50.46	50.00	49.56	49.12
9.800	48.69	48.26	47.84	47.40	46.96
10.050	46.52	46.08	45.64	45.20	44.76
10.300	44.28	43.81	43.34	42.88	42.43
10.550	41.99	41.56	41.12	40.70	40.29

Centennial Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
10.800	39.89	39.50	39.11	38.73	38.35
11.050	37.94	37.53	37.14	36.75	36.36
11.300	35.98	35.61	35.24	34.86	34.47
11.550	34.09	33.71	33.33	32.96	32.58
11.800	32.22	31.86	31.52	31.15	30.80
12.050	30.45	30.12	29.81	29.50	29.22
12.300	28.95	28.70	28.46	28.24	28.04
12.550	27.85	27.67	27.46	27.23	27.01
12.800	26.79	26.57	26.36	26.16	25.96
13.050	25.78	25.61	25.47	25.34	25.21
13.300	25.09	24.96	24.84	24.71	24.58
13.550	24.44	24.31	24.18	24.05	23.92
13.800	23.79	23.66	23.54	23.41	23.29
14.050	23.16	23.05	22.94	22.84	22.75
14.300	22.66	22.57	22.49	22.41	22.33
14.550	22.25	22.17	22.10	22.02	21.95
14.800	21.88	21.81	21.75	21.68	21.61
15.050	21.55	21.49	21.43	21.37	21.31
15.300	21.25	21.19	21.14	21.08	21.02
15.550	20.96	20.91	20.85	20.80	20.75
15.800	20.69	20.64	20.59	20.54	20.49
16.050	20.44	20.39	20.34	20.28	20.23
16.300	20.18	20.13	20.09	20.04	19.99
16.550	19.94	19.89	19.84	19.79	19.74
16.800	19.70	19.65	19.60	19.55	19.51
17.050	19.46	19.41	19.36	19.32	19.27
17.300	19.22	19.17	19.13	19.08	19.03
17.550	18.98	18.93	18.88	18.83	18.78
17.800	18.73	18.68	18.63	18.58	18.53
18.050	18.48	18.43	18.38	18.33	18.28
18.300	18.23	18.19	18.14	18.09	18.05
18.550	18.00	17.95	17.90	17.85	17.80
18.800	17.76	17.71	17.66	17.61	17.57
19.050	17.52	17.47	17.42	17.38	17.33
19.300	17.28	17.24	17.19	17.14	17.10
19.550	17.05	17.00	16.96	16.91	16.86
19.800	16.81	16.77	16.72	16.67	16.62
20.050	16.58	16.53	16.48	16.44	16.39
20.300	16.34	16.30	16.25	16.20	16.15
20.550	16.11	16.06	16.01	15.96	15.91
20.800	15.87	15.82	15.78	15.73	15.68
21.050	15.64	15.59	15.54	15.49	15.44

Centennial Site

Subsection: Diverted Hydrograph
Label: Outlet-1

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)				
21.300	15.40	15.35	15.30	15.26	15.21
21.550	15.16	15.11	15.07	15.02	14.97
21.800	14.92	14.88	14.83	14.78	14.74
22.050	14.69	14.64	14.59	14.55	14.50
22.300	14.45	14.40	14.35	14.30	14.25
22.550	14.20	14.15	14.10	14.05	14.00
22.800	13.95	13.90	13.85	13.80	13.75
23.050	13.70	13.65	13.60	13.55	13.51
23.300	13.46	13.41	13.36	13.32	13.27
23.550	13.22	13.17	13.12	13.07	13.02
23.800	12.98	12.93	12.88	12.83	12.78

Centennial Site

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

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	2,495.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,495.00	0.00	0.000	0.510	0.00	0.00	0.00
2,495.50	1.18	0.261	0.535	0.00	1.18	127.58
2,496.00	4.60	0.535	0.560	0.00	4.60	263.45
2,496.50	9.51	0.820	0.579	0.00	9.51	406.22
2,497.00	14.40	1.114	0.599	0.00	14.40	553.75
2,497.50	19.09	1.419	0.619	0.00	19.09	705.91
2,498.00	23.50	1.734	0.640	0.00	23.50	862.71
2,498.50	27.60	2.059	0.662	0.00	27.60	1,024.35
2,499.00	31.43	2.396	0.684	0.00	31.43	1,191.05
2,499.50	35.02	2.744	0.707	0.00	35.02	1,362.97
2,500.00	38.44	3.103	0.730	0.00	38.44	1,540.25
2,500.50	41.63	3.474	0.754	0.00	41.63	1,723.05
2,501.00	44.71	3.857	0.779	0.00	44.71	1,911.69
2,501.50	47.60	4.253	0.804	0.00	47.60	2,106.18
2,502.00	50.41	4.662	0.830	0.00	50.41	2,306.75
2,502.50	53.09	5.084	0.857	0.00	53.09	2,513.53
2,503.00	59.55	5.519	0.884	0.00	59.55	2,730.65
2,503.50	71.66	5.968	0.912	0.00	71.66	2,960.07
2,504.00	81.88	6.431	0.940	0.00	81.88	3,194.35
2,504.50	89.37	6.907	0.967	0.00	89.37	3,432.57
2,505.00	95.99	7.398	0.994	0.00	95.99	3,676.48
2,505.50	115.46	7.902	1.022	0.00	115.46	3,939.90
2,506.00	142.27	8.420	1.050	0.00	142.27	4,217.40
2,506.50	158.98	8.952	1.079	0.00	158.98	4,491.77
2,507.00	171.52	9.499	1.109	0.00	171.52	4,769.11
2,507.50	176.46	10.061	1.139	0.00	176.46	5,046.13
2,508.00	180.68	10.639	1.170	0.00	180.68	5,329.77
2,508.50	184.35	11.232	1.204	0.00	184.35	5,620.72
2,509.00	187.55	11.843	1.239	0.00	187.55	5,919.54

Centennial Site

Subsection: Elevation-Volume-Flow Table (Pond)

Return Event: 10 years

Label: PO-1

Storm Event: Idaho Maryland NC 10-yr

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,509.50	190.62	12.471	1.274	0.00	190.62	6,226.71
2,510.00	193.63	13.117	1.310	0.00	193.63	6,542.41

Centennial Site

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

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Infiltration	
Infiltration Method (Computed)	No Infiltration
Initial Conditions	
Elevation (Water Surface, Initial)	2,495.00 ft
Volume (Initial)	0.000 ac-ft
Flow (Initial Outlet)	0.00 ft ³ /s
Flow (Initial Infiltration)	0.00 ft ³ /s
Flow (Initial, Total)	0.00 ft ³ /s
Time Increment	0.050 hours

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,495.00	0.00	0.000	0.510	0.00	0.00	0.00
2,495.50	1.18	0.261	0.535	0.00	1.18	127.58
2,496.00	4.60	0.535	0.560	0.00	4.60	263.45
2,496.50	9.51	0.820	0.579	0.00	9.51	406.22
2,497.00	14.40	1.114	0.599	0.00	14.40	553.75
2,497.50	19.09	1.419	0.619	0.00	19.09	705.91
2,498.00	23.50	1.734	0.640	0.00	23.50	862.71
2,498.50	27.60	2.059	0.662	0.00	27.60	1,024.35
2,499.00	31.43	2.396	0.684	0.00	31.43	1,191.05
2,499.50	35.02	2.744	0.707	0.00	35.02	1,362.97
2,500.00	38.44	3.103	0.730	0.00	38.44	1,540.25
2,500.50	41.63	3.474	0.754	0.00	41.63	1,723.05
2,501.00	44.71	3.857	0.779	0.00	44.71	1,911.69
2,501.50	47.60	4.253	0.804	0.00	47.60	2,106.18
2,502.00	50.41	4.662	0.830	0.00	50.41	2,306.75
2,502.50	53.09	5.084	0.857	0.00	53.09	2,513.53
2,503.00	59.55	5.519	0.884	0.00	59.55	2,730.65
2,503.50	71.64	5.968	0.912	0.00	71.64	2,960.04
2,504.00	81.86	6.431	0.940	0.00	81.86	3,194.33
2,504.50	89.37	6.907	0.967	0.00	89.37	3,432.56
2,505.00	96.02	7.398	0.994	0.00	96.02	3,676.51
2,505.50	115.46	7.902	1.022	0.00	115.46	3,939.90
2,506.00	142.27	8.420	1.050	0.00	142.27	4,217.40
2,506.50	158.98	8.952	1.079	0.00	158.98	4,491.77
2,507.00	171.52	9.499	1.109	0.00	171.52	4,769.11
2,507.50	176.46	10.061	1.139	0.00	176.46	5,046.13
2,508.00	180.68	10.639	1.170	0.00	180.68	5,329.77
2,508.50	184.35	11.232	1.204	0.00	184.35	5,620.72
2,509.00	187.55	11.843	1.239	0.00	187.55	5,919.54

Centennial Site

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

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Elevation (ft)	Outflow (ft ³ /s)	Storage (ac-ft)	Area (acres)	Infiltration (ft ³ /s)	Flow (Total) (ft ³ /s)	2S/t + O (ft ³ /s)
2,509.50	190.62	12.471	1.274	0.00	190.62	6,226.71
2,510.00	193.63	13.117	1.310	0.00	193.63	6,542.41

Centennial Site

Subsection: Level Pool Pond Routing Summary
 Label: PO-1 (IN)

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Infiltration			
Infiltration Method (Computed)	No Infiltration		
Initial Conditions			
Elevation (Water Surface, Initial)	2,495.00 ft		
Volume (Initial)	0.000 ac-ft		
Flow (Initial Outlet)	0.00 ft ³ /s		
Flow (Initial Infiltration)	0.00 ft ³ /s		
Flow (Initial, Total)	0.00 ft ³ /s		
Time Increment	0.050 hours		
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	89.68 ft ³ /s	Time to Peak (Flow, In)	7.950 hours
Flow (Peak Outlet)	45.14 ft ³ /s	Time to Peak (Flow, Outlet)	8.350 hours
Peak Conditions			
Elevation (Water Surface, Peak)	2,501.07 ft		
Volume (Peak)	3.915 ac-ft		
Mass Balance (ac-ft)			
Volume (Initial)	0.000 ac-ft		
Volume (Total Inflow)	28.807 ac-ft		
Volume (Total Infiltration)	0.000 ac-ft		
Volume (Total Outlet Outflow)	28.027 ac-ft		
Volume (Retained)	0.744 ac-ft		
Volume (Unrouted)	-0.036 ac-ft		
Error (Mass Balance)	0.1 %		

Centennial Site

Subsection: Level Pool Pond Routing Summary
 Label: PO-1 (IN)

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Infiltration			
Infiltration Method (Computed)	No Infiltration		
Initial Conditions			
Elevation (Water Surface, Initial)	2,495.00 ft		
Volume (Initial)	0.000 ac-ft		
Flow (Initial Outlet)	0.00 ft ³ /s		
Flow (Initial Infiltration)	0.00 ft ³ /s		
Flow (Initial, Total)	0.00 ft ³ /s		
Time Increment	0.050 hours		
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	137.41 ft ³ /s	Time to Peak (Flow, In)	7.950 hours
Flow (Peak Outlet)	75.75 ft ³ /s	Time to Peak (Flow, Outlet)	8.300 hours
Peak Conditions			
Elevation (Water Surface, Peak)	2,503.70 ft		
Volume (Peak)	6.152 ac-ft		
Mass Balance (ac-ft)			
Volume (Initial)	0.000 ac-ft		
Volume (Total Inflow)	44.124 ac-ft		
Volume (Total Infiltration)	0.000 ac-ft		
Volume (Total Outlet Outflow)	43.107 ac-ft		
Volume (Retained)	0.965 ac-ft		
Volume (Unrouted)	-0.052 ac-ft		
Error (Mass Balance)	0.1 %		

Centennial Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

Peak Discharge	45.14 ft ³ /s
Time to Peak	8.350 hours
Hydrograph Volume	28.027 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft ³ /s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)
2.000	0.00	0.00	0.00	0.01	0.02
2.250	0.03	0.05	0.06	0.08	0.11
2.500	0.13	0.16	0.20	0.23	0.27
2.750	0.30	0.34	0.39	0.43	0.48
3.000	0.52	0.57	0.63	0.68	0.73
3.250	0.78	0.84	0.90	0.96	1.02
3.500	1.08	1.14	1.26	1.45	1.63
3.750	1.82	2.01	2.20	2.38	2.57
4.000	2.76	2.94	3.13	3.31	3.49
4.250	3.66	3.84	4.02	4.19	4.37
4.500	4.54	4.77	5.01	5.24	5.48
4.750	5.71	5.94	6.18	6.41	6.64
5.000	6.87	7.11	7.35	7.59	7.84
5.250	8.09	8.34	8.59	8.85	9.10
5.500	9.35	9.60	9.84	10.07	10.30
5.750	10.53	10.76	10.99	11.23	11.47
6.000	11.72	11.98	12.26	12.56	12.88
6.250	13.21	13.55	13.89	14.22	14.55
6.500	14.85	15.15	15.42	15.66	15.87
6.750	16.07	16.27	16.47	16.69	16.92
7.000	17.18	17.45	17.76	18.10	18.47
7.250	18.88	19.31	19.75	20.25	20.79
7.500	21.38	22.12	23.29	24.98	27.16
7.750	29.46	31.83	34.08	36.24	38.29
8.000	40.09	41.74	43.02	43.95	44.56
8.250	44.91	45.09	45.14	45.09	44.96
8.500	44.76	44.48	44.19	43.90	43.63
8.750	43.34	43.04	42.72	42.39	42.03
9.000	41.65	41.24	40.81	40.36	39.90
9.250	39.44	38.96	38.48	37.95	37.41
9.500	36.87	36.34	35.82	35.32	34.83
9.750	34.33	33.85	33.38	32.92	32.46
10.000	32.02	31.59	31.14	30.67	30.22
10.250	29.78	29.34	28.92	28.51	28.11
10.500	27.72	27.32	26.93	26.56	26.21
10.750	25.88	25.56	25.24	24.94	24.65
11.000	24.36	24.08	23.80	23.53	23.24

Centennial Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 10 years
 Storm Event: Idaho Maryland NC 10-yr

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

Time (hours)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft ³ /s)
11.250	22.96	22.68	22.41	22.14	21.88
11.500	21.63	21.38	21.13	20.89	20.64
11.750	20.40	20.17	19.94	19.72	19.51
12.000	19.31	19.11	18.91	18.72	18.54
12.250	18.38	18.22	18.08	17.96	17.85
12.500	17.75	17.66	17.57	17.47	17.37
12.750	17.25	17.14	17.03	16.93	16.82
13.000	16.73	16.63	16.56	16.49	16.44
13.250	16.39	16.34	16.28	16.23	16.17
13.500	16.10	16.03	15.97	15.90	15.83
13.750	15.76	15.69	15.62	15.55	15.49
14.000	15.42	15.36	15.31	15.26	15.21
14.250	15.17	15.12	15.08	15.04	15.00
14.500	14.96	14.92	14.89	14.85	14.81
14.750	14.78	14.74	14.70	14.67	14.63
15.000	14.60	14.56	14.53	14.50	14.46
15.250	14.43	14.40	14.36	14.33	14.29
15.500	14.26	14.23	14.19	14.16	14.12
15.750	14.09	14.06	14.03	13.99	13.96
16.000	13.93	13.90	13.87	13.83	13.80
16.250	13.77	13.74	13.71	13.68	13.64
16.500	13.61	13.58	13.55	13.52	13.49
16.750	13.46	13.43	13.40	13.36	13.33
17.000	13.30	13.27	13.24	13.21	13.18
17.250	13.15	13.12	13.09	13.05	13.02
17.500	12.99	12.96	12.93	12.90	12.87
17.750	12.84	12.81	12.78	12.75	12.72
18.000	12.68	12.65	12.62	12.59	12.56
18.250	12.53	12.50	12.47	12.44	12.40
18.500	12.37	12.34	12.31	12.28	12.25
18.750	12.22	12.18	12.15	12.12	12.09
19.000	12.06	12.03	12.00	11.96	11.93
19.250	11.90	11.87	11.84	11.81	11.78
19.500	11.74	11.71	11.68	11.65	11.62
19.750	11.59	11.56	11.52	11.49	11.46
20.000	11.43	11.39	11.36	11.33	11.30
20.250	11.27	11.24	11.21	11.17	11.14
20.500	11.11	11.08	11.04	11.01	10.98
20.750	10.95	10.92	10.88	10.85	10.82
21.000	10.79	10.76	10.73	10.69	10.66
21.250	10.63	10.60	10.56	10.53	10.50
21.500	10.47	10.44	10.40	10.37	10.34

Centennial Site

Subsection: Pond Routed Hydrograph (total out)
Label: PO-1 (OUT)

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft ³ /s)
21.750	10.31	10.27	10.24	10.21	10.18
22.000	10.15	10.11	10.08	10.05	10.02
22.250	9.98	9.95	9.92	9.89	9.85
22.500	9.82	9.79	9.76	9.72	9.69
22.750	9.66	9.63	9.60	9.56	9.53
23.000	9.50	9.46	9.43	9.39	9.36
23.250	9.33	9.29	9.26	9.23	9.20
23.500	9.16	9.13	9.10	9.06	9.03
23.750	9.00	8.96	8.93	8.90	8.86
24.000	8.83	(N/A)	(N/A)	(N/A)	(N/A)

Centennial Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

Peak Discharge	75.75 ft ³ /s
Time to Peak	8.300 hours
Hydrograph Volume	43.107 ac-ft

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft ³ /s)
1.550	0.00	0.00	0.01	0.02	0.04
1.800	0.06	0.09	0.12	0.16	0.21
2.050	0.25	0.31	0.36	0.43	0.49
2.300	0.56	0.64	0.72	0.80	0.89
2.550	0.98	1.07	1.17	1.40	1.67
2.800	1.93	2.19	2.44	2.70	2.95
3.050	3.20	3.44	3.68	3.91	4.14
3.300	4.37	4.60	4.91	5.21	5.51
3.550	5.81	6.10	6.41	6.71	7.02
3.800	7.33	7.63	7.94	8.24	8.54
4.050	8.83	9.12	9.40	9.67	9.93
4.300	10.19	10.45	10.71	10.97	11.23
4.550	11.49	11.75	12.02	12.29	12.56
4.800	12.83	13.11	13.40	13.69	13.98
5.050	14.28	14.58	14.88	15.19	15.51
5.300	15.83	16.16	16.50	16.83	17.17
5.550	17.50	17.83	18.15	18.47	18.78
5.800	19.10	19.39	19.69	20.00	20.33
6.050	20.67	21.03	21.43	21.86	22.31
6.300	22.76	23.22	23.66	24.07	24.48
6.550	24.88	25.25	25.56	25.85	26.11
6.800	26.38	26.65	26.94	27.25	27.58
7.050	27.92	28.29	28.70	29.15	29.65
7.300	30.20	30.81	31.47	32.13	32.85
7.550	33.75	35.15	37.18	39.71	42.42
7.800	45.14	47.73	50.20	52.47	56.68
8.050	62.54	68.96	72.87	74.78	75.63
8.300	75.75	75.32	74.48	73.32	71.93
8.550	70.15	68.36	66.76	65.33	63.96
8.800	62.61	61.27	59.91	58.99	58.20
9.050	57.37	56.52	55.65	54.75	53.85
9.300	53.02	52.62	52.21	51.78	51.34
9.550	50.90	50.46	50.00	49.56	49.12
9.800	48.69	48.26	47.84	47.40	46.96
10.050	46.52	46.08	45.64	45.20	44.76
10.300	44.28	43.81	43.34	42.88	42.43
10.550	41.99	41.56	41.12	40.70	40.29

Centennial Site

Subsection: Pond Routed Hydrograph (total out)
 Label: PO-1 (OUT)

Return Event: 100 years
 Storm Event: Idaho Maryland NC 100-yr

HYDROGRAPH ORDINATES (ft³/s)

Output Time Increment = 0.050 hours

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

Time (hours)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft^{3}/s)	Flow (ft ³ /s)
10.800	39.89	39.50	39.11	38.73	38.35
11.050	37.94	37.53	37.14	36.75	36.36
11.300	35.98	35.61	35.24	34.86	34.47
11.550	34.09	33.71	33.33	32.96	32.58
11.800	32.22	31.86	31.52	31.15	30.80
12.050	30.45	30.12	29.81	29.50	29.22
12.300	28.95	28.70	28.46	28.24	28.04
12.550	27.85	27.67	27.46	27.23	27.01
12.800	26.79	26.57	26.36	26.16	25.96
13.050	25.78	25.61	25.47	25.34	25.21
13.300	25.09	24.96	24.84	24.71	24.58
13.550	24.44	24.31	24.18	24.05	23.92
13.800	23.79	23.66	23.54	23.41	23.29
14.050	23.16	23.05	22.94	22.84	22.75
14.300	22.66	22.57	22.49	22.41	22.33
14.550	22.25	22.17	22.10	22.02	21.95
14.800	21.88	21.81	21.75	21.68	21.61
15.050	21.55	21.49	21.43	21.37	21.31
15.300	21.25	21.19	21.14	21.08	21.02
15.550	20.96	20.91	20.85	20.80	20.75
15.800	20.69	20.64	20.59	20.54	20.49
16.050	20.44	20.39	20.34	20.28	20.23
16.300	20.18	20.13	20.09	20.04	19.99
16.550	19.94	19.89	19.84	19.79	19.74
16.800	19.70	19.65	19.60	19.55	19.51
17.050	19.46	19.41	19.36	19.32	19.27
17.300	19.22	19.17	19.13	19.08	19.03
17.550	18.98	18.93	18.88	18.83	18.78
17.800	18.73	18.68	18.63	18.58	18.53
18.050	18.48	18.43	18.38	18.33	18.28
18.300	18.23	18.19	18.14	18.09	18.05
18.550	18.00	17.95	17.90	17.85	17.80
18.800	17.76	17.71	17.66	17.61	17.57
19.050	17.52	17.47	17.42	17.38	17.33
19.300	17.28	17.24	17.19	17.14	17.10
19.550	17.05	17.00	16.96	16.91	16.86
19.800	16.81	16.77	16.72	16.67	16.62
20.050	16.58	16.53	16.48	16.44	16.39
20.300	16.34	16.30	16.25	16.20	16.15
20.550	16.11	16.06	16.01	15.96	15.91
20.800	15.87	15.82	15.78	15.73	15.68
21.050	15.64	15.59	15.54	15.49	15.44

Centennial Site

Subsection: Pond Routed Hydrograph (total out)
Label: PO-1 (OUT)

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

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

Time (hours)	Flow (ft ³ /s)				
21.300	15.40	15.35	15.30	15.26	15.21
21.550	15.16	15.11	15.07	15.02	14.97
21.800	14.92	14.88	14.83	14.78	14.74
22.050	14.69	14.64	14.59	14.55	14.50
22.300	14.45	14.40	14.35	14.30	14.25
22.550	14.20	14.15	14.10	14.05	14.00
22.800	13.95	13.90	13.85	13.80	13.75
23.050	13.70	13.65	13.60	13.55	13.51
23.300	13.46	13.41	13.36	13.32	13.27
23.550	13.22	13.17	13.12	13.07	13.02
23.800	12.98	12.93	12.88	12.83	12.78

Centennial Site

Subsection: Pond Inflow Summary
Label: PO-1 (IN)

Return Event: 10 years
Storm Event: Idaho Maryland NC 10-yr

Summary for Hydrograph Addition at 'PO-1'

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

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	28.807	7.950	89.68
Flow (In)	PO-1	28.807	7.950	89.68

Centennial Site

Subsection: Pond Inflow Summary
Label: PO-1 (IN)

Return Event: 100 years
Storm Event: Idaho Maryland NC 100-yr

Summary for Hydrograph Addition at 'PO-1'

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

Node Inflows

Inflow Type	Element	Volume (ac-ft)	Time to Peak (hours)	Flow (Peak) (ft ³ /s)
Flow (From)	CM-1	44.124	7.950	137.41
Flow (In)	PO-1	44.124	7.950	137.41

Centennial Site

Index

C

- CM-1 (Unit Hydrograph (Hydrograph Table), 10 years)...15, 16, 17, 20, 21, 22
- CM-1 (Unit Hydrograph (Hydrograph Table), 100 years)...25, 26, 27, 30, 31, 32
- CM-1 (Unit Hydrograph Summary, 10 years)...13, 14, 18, 19
- CM-1 (Unit Hydrograph Summary, 100 years)...23, 24, 28, 29
- Composite Outlet Structure - 1 (Composite Rating Curve, 10 years)...66, 67, 68
- Composite Outlet Structure - 1 (Composite Rating Curve, 100 years)...77, 78, 79
- Composite Outlet Structure - 1 (Individual Outlet Curves, 10 years)...57, 58, 59, 60, 61, 62, 63, 64, 65
- Composite Outlet Structure - 1 (Individual Outlet Curves, 100 years)...73, 74, 75, 76
- Composite Outlet Structure - 1 (Outlet Input Data, 10 years)...53, 54, 55, 56
- Composite Outlet Structure - 1 (Outlet Input Data, 100 years)...69, 70, 71, 72

M

Master Network Summary...2

N

- NC airport/NOAA (Time-Depth Curve, 10 years)...7, 8, 9, 10
- NC airport/NOAA (Time-Depth Curve, 100 years)...3, 4, 5, 6

O

- O-1 (Addition Summary, 10 years)...33, 34
- O-1 (Addition Summary, 100 years)...35, 36
- Outlet-1 (Diverted Hydrograph, 10 years)...80, 81, 82
- Outlet-1 (Diverted Hydrograph, 100 years)...83, 84, 85

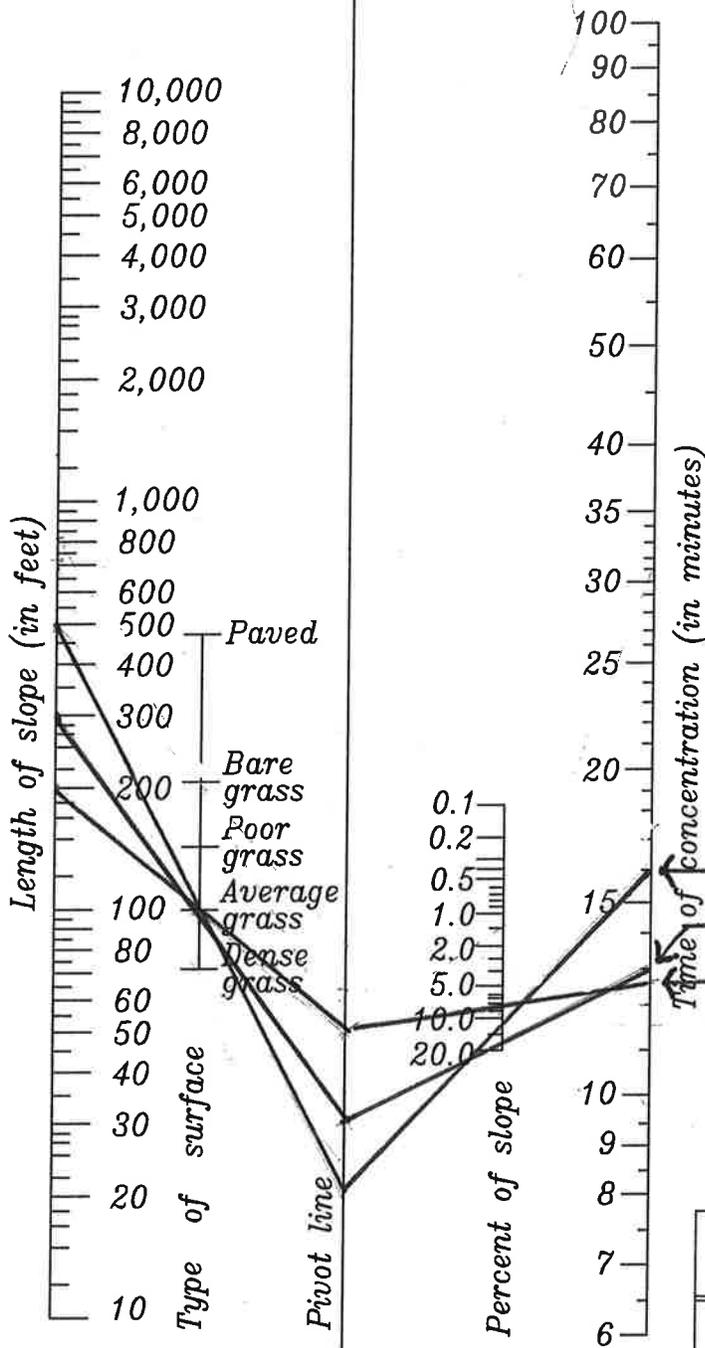
P

- PO-1 (Elevation-Area Volume Curve, 10 years)...49
- PO-1 (Elevation-Area Volume Curve, 100 years)...51
- PO-1 (Elevation-Volume-Flow Table (Pond), 10 years)...86, 87
- PO-1 (Elevation-Volume-Flow Table (Pond), 100 years)...88, 89
- PO-1 (IN) (Level Pool Pond Routing Summary, 10 years)...90
- PO-1 (IN) (Level Pool Pond Routing Summary, 100 years)...91
- PO-1 (IN) (Pond Inflow Summary, 10 years)...98

Centennial Site

PO-1 (IN) (Pond Inflow Summary, 100 years)...	99
PO-1 (OUT) (Pond Routed Hydrograph (total out), 10 years)...	92, 93, 94
PO-1 (OUT) (Pond Routed Hydrograph (total out), 100 years)...	95, 96, 97
PO-1 (OUT) (Time vs. Elevation, 10 years)...	37, 38, 39
PO-1 (OUT) (Time vs. Elevation, 100 years)...	40, 41, 42
PO-1 (Time vs. Volume, 10 years)...	43, 44, 45
PO-1 (Time vs. Volume, 100 years)...	46, 47, 48
PO-1 (Volume Equations, 10 years)...	50
PO-1 (Volume Equations, 100 years)...	52
U	
Unit Hydrograph Equations...	11, 12

APPENDICES



COUNTY OF NEVADA
 DEPARTMENT OF TRANSPORTATION
 LOCAL RURAL ROAD SYSTEM

TIME OF CONCENTRATION
 SHEET FLOW



Approved by:
 John W. Rumsey 5-10-95
 Senior Civil Engineer Date

STANDARD
 DRAWING
 D-8

**VELOCITIES IN GUTTERS, CHANNELS & EXISTING DRAINAGE CHANNELS
FOR GIVEN SLOPE**

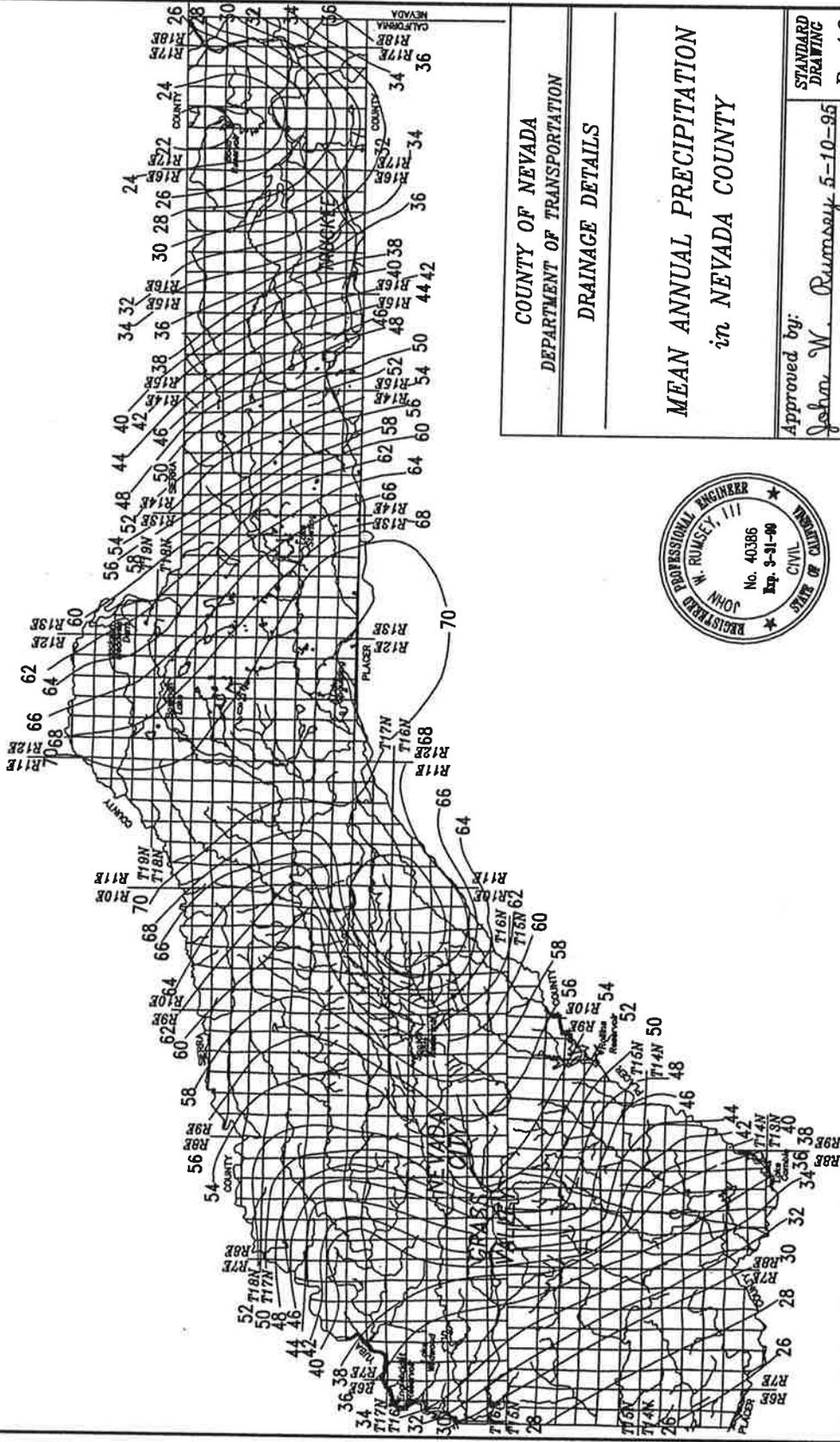
<i>Slope</i>	<i>Velocity</i>	<i>Slope</i>	<i>Velocity</i>
0.5%	= 1.7' / Sec	8.0	= 6.6
1.0	= 2.3	.5	= 6.9
1.5	= 3.0	9.0	= 7.2
2.0	= 3.4	.5	= 7.5
2.5	= 3.8	10.0	= 7.8
3.0	= 4.2	.5	= 8.0
3.5	= 4.4	11.0	= 8.2
4.0	= 4.6	.5	= 8.5
.5	= 4.8	12.0	= 8.7
5.0	= 5.0	.5	= 8.9
.5	= 5.2	13.0	= 9.1
6.0	= 5.4	.5	= 9.3
.5	= 5.7	14.0	= 9.6
7.0	= 6.0	.5	= 9.8
.5	= 6.3	15.0	= 10.0

NOTE: The velocities shown hereon are to be used only for the purpose of calculating Tc, Time of Concentration.



COUNTY OF NEVADA DEPARTMENT OF TRANSPORTATION	
LOCAL RURAL ROAD SYSTEM	
VELOCITIES IN GUTTERS & CHANNELS	
Approved by: <i>John W. Rumsey</i> 5-10-95 Senior Civil Engineer	STANDARD DRAWING D-9
Date	

NEVADA COUNTY



REMARKS
 1. This drawing is for the purpose of showing the general location of the basins only. It is not to be used for any other purpose.
 2. The basins are numbered in accordance with the standard drawing D-10.

COUNTY OF NEVADA DEPARTMENT OF TRANSPORTATION	
DRAINAGE DETAILS	
MEAN ANNUAL PRECIPITATION <i>in NEVADA COUNTY</i>	
Approved by: <i>John W. Rumsey</i> 5-10-95 Senior Civil Engineer	STANDARD DRAWING D-10 Date



Rev. 5-10-95

NEVADA COUNTY DESIGN STORM (INTENSITY)
10 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Mean Annual Precipitation Inches	5	10	15	30	60	120	180	360	720	1440
					1hr	2Hr	3Hr	6Hr	12Hr	24Hr
	<i>Intensity in inches per hour</i>									
20	1.57	1.15	.96	.70	.51	.38	.31	.23	.17	.12
22	1.68	1.23	1.03	.75	.55	.40	.34	.25	.18	.13
24	1.80	1.31	1.10	.80	.59	.43	.36	.26	.19	.14
26	1.91	1.40	1.17	.85	.62	.46	.38	.28	.20	.15
28	2.02	1.48	1.23	.90	.66	.48	.40	.30	.22	.16
30	2.14	1.57	1.30	.95	.70	.51	.43	.31	.23	.17
32	2.25	1.65	1.37	1.01	.74	.54	.45	.33	.24	.18
34	2.37	1.73	1.44	1.06	.77	.57	.47	.35	.25	.19
36	2.48	1.82	1.51	1.11	.81	.59	.49	.36	.27	.19
38	2.59	1.90	1.58	1.16	.85	.62	.52	.38	.28	.20
40	2.71	1.98	1.65	1.21	.89	.65	.54	.40	.29	.21
42	2.82	2.07	1.72	1.26	.92	.68	.56	.41	.30	.22
44	2.94	2.15	1.79	1.31	.96	.70	.59	.43	.31	.23
46	3.05	2.23	1.86	1.36	1.00	.73	.61	.45	.33	.24
48	3.17	2.32	1.93	1.41	1.03	.76	.63	.46	.34	.25
50	3.28	2.40	2.00	1.46	1.07	.78	.65	.48	.35	.26
52	3.39	2.48	2.07	1.52	1.11	.81	.68	.50	.36	.27
54	3.51	2.57	2.14	1.57	1.15	.84	.70	.51	.37	.27
56	3.62	2.65	2.21	1.62	1.18	.87	.72	.53	.39	.28
58	3.74	2.73	2.28	1.67	1.22	.89	.74	.55	.40	.29
60	3.85	2.82	2.35	1.72	1.26	.92	.77	.56	.41	.30
62	3.96	2.90	2.42	1.77	1.30	.95	.79	.58	.42	.31
64	4.08	2.98	2.49	1.82	1.33	.98	.81	.60	.44	.32
66	4.19	3.07	2.56	1.87	1.37	1.00	.84	.61	.45	.33
68	4.31	3.15	2.63	1.92	1.41	1.03	.86	.63	.46	.34
70	4.42	3.24	2.70	1.97	1.44	1.06	.88	.65	.47	.35
72	4.53	3.32	2.77	2.02	1.48	1.08	.90	.66	.48	.35
74	4.65	3.40	2.84	2.08	1.52	1.11	.93	.68	.50	.36
76	4.76	3.49	2.90	2.13	1.56	1.14	.95	.70	.51	.37
78	4.88	3.57	2.97	2.18	1.59	1.17	.97	.71	.52	.38
80	4.99	3.65	3.04	2.23	1.63	1.19	.99	.73	.53	.39



COUNTY OF NEVADA DEPARTMENT OF TRANSPORTATION DRAINAGE DETAIL 10 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY	
Approved by: <i>John W. Rumsey</i>	STANDARD DRAWING D-11
Senior Civil Engineer	Date 5-11-95

NEVADA COUNTY DESIGN STORM (INTENSITY)
100 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Mean Annual Precipitation Inches	Intensity in inches per hour									
	5	10	15	30	60 1hr	120 2hr	180 3hr	360 6hr	720 12hr	1440 24hr
20	2.22	1.63	1.36	.99	.73	.53	.44	.32	.24	.17
22	2.39	1.75	1.46	1.07	.78	.57	.48	.35	.25	.19
24	2.55	1.86	1.55	1.14	.83	.61	.51	.37	.27	.20
26	2.71	1.98	1.65	1.21	.89	.65	.54	.40	.29	.21
28	2.87	2.10	1.75	1.28	.94	.69	.57	.42	.31	.22
30	3.03	2.22	1.85	1.35	.99	.73	.60	.44	.32	.24
32	3.19	2.34	1.95	1.43	1.04	.76	.64	.47	.34	.25
34	3.36	2.46	2.05	1.50	1.10	.80	.67	.49	.36	.26
36	3.52	2.58	2.15	1.57	1.15	.84	.70	.51	.38	.28
38	3.68	2.69	2.24	1.64	1.20	.88	.73	.54	.39	.29
40	3.84	2.81	2.34	1.72	1.26	.92	.77	.56	.41	.30
42	4.00	2.93	2.44	1.79	1.31	.96	.80	.58	.43	.31
44	4.17	3.05	2.54	1.86	1.36	1.00	.83	.61	.45	.33
46	4.33	3.17	2.64	1.93	1.41	1.04	.86	.63	.46	.34
48	4.49	3.29	2.74	2.00	1.47	1.07	.89	.66	.48	.35
50	4.65	3.40	2.84	2.08	1.52	1.11	.93	.68	.50	.36
52	4.81	3.52	2.94	2.15	1.57	1.15	.96	.70	.51	.38
54	4.97	3.64	3.03	2.22	1.63	1.19	.99	.73	.53	.39
56	5.14	3.76	3.13	2.29	1.68	1.23	1.02	.75	.55	.40
58	5.30	3.88	3.23	2.37	1.73	1.27	1.06	.77	.57	.41
60	5.46	4.00	3.33	2.44	1.78	1.31	1.09	.80	.58	.43
62	5.62	4.12	3.43	2.51	1.84	1.35	1.12	.82	.60	.44
64	5.78	4.23	3.53	2.58	1.89	1.38	1.15	.84	.62	.45
66	5.94	4.35	3.63	2.65	1.94	1.42	1.19	.87	.64	.46
68	6.11	4.47	3.72	2.73	2.00	1.46	1.22	.89	.65	.48
70	6.27	4.59	3.82	2.80	2.05	1.50	1.25	.91	.67	.49
72	6.43	4.71	3.92	2.87	2.10	1.54	1.28	.94	.69	.50
74	6.59	4.83	4.02	2.94	2.15	1.58	1.31	.96	.70	.52
76	6.75	4.94	4.12	3.02	2.21	1.62	1.35	.99	.72	.53
78	6.92	5.06	4.22	3.09	2.26	1.65	1.38	1.01	.74	.54
80	7.08	5.18	4.32	3.16	2.31	1.69	1.41	1.03	.76	.55



COUNTY OF NEVADA DEPARTMENT OF TRANSPORTATION	
DRAINAGE DETAIL 100 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY	
Approved by: <i>John W. Rumsey</i> 5-11-95	STANDARD DRAWING D-12
Senior Civil Engineer	Date

NEVADA COUNTY DESIGN STORM (DEPTH)
10 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Mean Annual Precipitation Inches	Design Storm Depth in inches									
	5	10	15	30	60	120	180	360	720	1440
	1hr	2Hr	3Hr	6Hr	12Hr	24Hr				
20	.13	.19	.24	.35	.51	.75	.94	1.37	2.01	2.94
22	.14	.21	.26	.38	.55	.81	1.01	1.47	2.16	3.16
24	.15	.22	.27	.40	.59	.86	1.07	1.57	2.30	3.37
26	.16	.23	.29	.43	.62	.91	1.14	1.67	2.45	3.59
28	.17	.25	.31	.45	.66	.97	1.21	1.77	2.60	3.80
30	.18	.26	.33	.48	.70	1.02	1.28	1.87	2.74	4.01
32	.19	.27	.34	.50	.74	1.08	1.35	1.97	2.89	4.23
34	.20	.29	.36	.53	.77	1.13	1.42	2.07	3.03	4.44
36	.21	.30	.38	.55	.81	1.19	1.48	2.17	3.18	4.66
38	.22	.32	.40	.58	.85	1.24	1.55	2.27	3.33	4.87
40	.23	.33	.41	.60	.89	1.30	1.62	2.37	3.47	5.08
42	.24	.34	.43	.63	.92	1.35	1.69	2.47	3.62	5.30
44	.24	.36	.45	.66	.96	1.41	1.76	2.57	3.77	5.51
46	.25	.37	.47	.68	1.00	1.46	1.82	2.67	3.91	5.73
48	.26	.39	.48	.71	1.03	1.51	1.89	2.77	4.06	5.94
50	.27	.40	.50	.73	1.07	1.57	1.96	2.87	4.20	6.16
52	.28	.41	.52	.76	1.11	1.62	2.03	2.97	4.35	6.37
54	.29	.43	.53	.78	1.15	1.68	2.10	3.07	4.50	6.58
56	.30	.44	.55	.81	1.18	1.73	2.17	3.17	4.64	6.80
58	.31	.46	.57	.83	1.22	1.79	2.23	3.27	4.79	7.01
60	.32	.47	.59	.86	1.26	1.84	2.30	3.37	4.94	7.23
62	.33	.48	.60	.88	1.30	1.90	2.37	3.47	5.08	7.44
64	.34	.50	.62	.91	1.33	1.95	2.44	3.57	5.23	7.65
66	.35	.51	.64	.94	1.37	2.01	2.51	3.67	5.37	7.87
68	.36	.53	.66	.96	1.41	2.06	2.58	3.77	5.52	8.08
70	.37	.54	.67	.99	1.44	2.12	2.64	3.87	5.67	8.30
72	.38	.55	.69	1.01	1.48	2.17	2.71	3.97	5.81	8.51
74	.39	.57	.71	1.04	1.52	2.22	2.78	4.07	5.96	8.72
76	.40	.58	.73	1.06	1.56	2.28	2.85	4.17	6.11	8.94
78	.41	.59	.74	1.09	1.59	2.33	2.92	4.27	6.25	9.15
80	.42	.61	.76	1.11	1.63	2.39	2.98	4.37	6.40	9.37



COUNTY OF NEVADA	
DEPARTMENT OF TRANSPORTATION	
DRAINAGE DETAIL	
10 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY	
Approved by:	STANDARD DRAWING
John W. Rumsey	5-11-95
Senior Civil Engineer	Date
	D-13

NEVADA COUNTY DESIGN STORM (DEPTH)

100 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Mean Annual Precipitation Inches	Design Storm depth in inches									
	5	10	15	30	60 1hr	120 2hr	180 3hr	360 6hr	720 12hr	1440 24hr
20	.19	.27	.34	.50	.73	1.06	1.33	1.95	2.85	4.17
22	.20	.29	.36	.53	.78	1.14	1.43	2.09	3.06	4.48
24	.21	.31	.39	.57	.83	1.22	1.52	2.23	3.27	4.78
26	.23	.33	.41	.60	.89	1.30	1.62	2.37	3.47	5.09
28	.24	.35	.44	.64	.94	1.37	1.72	2.51	3.68	5.39
30	.25	.37	.46	.68	.99	1.45	1.81	2.66	3.89	5.69
32	.27	.39	.49	.71	1.04	1.53	1.91	2.80	4.10	6.00
34	.28	.41	.51	.75	1.10	1.61	2.01	2.94	4.30	6.30
36	.29	.43	.54	.79	1.15	1.68	2.10	3.08	4.51	6.60
38	.31	.45	.56	.82	1.20	1.76	2.20	3.22	4.72	6.91
40	.32	.47	.59	.86	1.26	1.84	2.30	3.36	4.93	7.21
42	.33	.49	.61	.89	1.31	1.92	2.39	3.51	5.13	7.51
44	.35	.51	.64	.93	1.36	1.99	2.49	3.65	5.34	7.82
46	.36	.53	.66	.97	1.41	2.07	2.59	3.79	5.55	8.12
48	.37	.55	.68	1.00	1.47	2.15	2.68	3.93	5.76	8.43
50	.39	.57	.71	1.04	1.52	2.23	2.78	4.07	5.96	8.73
52	.40	.59	.73	1.07	1.57	2.30	2.88	4.21	6.17	9.03
54	.41	.61	.76	1.11	1.63	2.38	2.98	4.36	6.38	9.34
56	.43	.63	.78	1.15	1.68	2.46	3.07	4.50	6.58	9.64
58	.44	.65	.81	1.18	1.73	2.54	3.17	4.64	6.79	9.94
60	.45	.67	.83	1.22	1.78	2.61	3.27	4.78	7.00	10.25
62	.47	.69	.86	1.25	1.84	2.69	3.36	4.92	7.21	10.55
64	.48	.71	.88	1.29	1.89	2.77	3.46	5.06	7.41	10.86
66	.50	.73	.91	1.33	1.94	2.84	3.56	5.21	7.62	11.16
68	.51	.75	.93	1.36	2.00	2.92	3.65	5.35	7.83	11.46
70	.52	.76	.96	1.40	2.05	3.00	3.75	5.49	8.04	11.77
72	.54	.78	.98	1.44	2.10	3.08	3.85	5.63	8.24	12.07
74	.55	.80	1.01	1.47	2.15	3.15	3.94	5.77	8.45	12.37
76	.56	.82	1.03	1.51	2.21	3.23	4.04	5.91	8.66	12.68
78	.58	.84	1.05	1.54	2.26	3.31	4.14	6.06	8.87	12.98
80	.59	.86	1.08	1.58	2.31	3.39	4.23	6.20	9.07	13.28



COUNTY OF NEVADA
 DEPARTMENT OF TRANSPORTATION
 DRAINAGE DETAIL
 100 YEAR STORM DURATION IN MINUTES FOR NEVADA COUNTY

Approved by: John W. Rumsey 5-11-95
 Senior Civil engineer Date

STANDARD DRAWING
 D-14

TABLE FOR ESTIMATING "C" IN RATIONAL FORMULA
UNIMPROVED AREAS

CONDITION	EXTREME	HIGH	MODERATE	LOW
Slope	.36 - .28 Above 30%	.28 - .15 30% - 10%	.15 - .10 10% - 5%	.10 - .05 5% - 0
Surface permeability	.20 - .15 Bare rock or very thin soil	.15 - .07 Impervious clays shallow soils	.07 - .04 Deep pervious loam, sandy loam	.03 Deep sand, volcanic ash
Vegetation	.20 - .15 None or very sparse	.15 - .07 Less than 20% covered with substantial growth	.07 - .04 About 50% covered with heavy growth	.03 90% covered with heavy growth, deep hummus layer
Surface	.20 - .15 Smooth soil, slick rock drainage flow continuous	.15 - .07 Roughened soil or rocks	.07 - .04 Drainage flow interrupted many ponds, lakes & marshes	.03 Drainage flow arrested many ponds, lakes & marshes

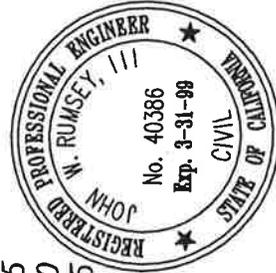
IMPROVED AREAS

Surface	C
Roof surfaces	.95
A.C. or P.C.C. pavement, patios, driveways, streets, sidewalks.....	.90
Landscaped areas.....	.25
Gravel walks, roadways.....	.30

EXAMPLE: Unimproved	EXAMPLE: Improved
20% slope.....	.22
Well drained soil.....	.05
Fair cover.....	.07
No ponds.....	.08
	<u>C = .42</u>

$$C = (15 \times .95) + (50 \times .90) + (35 \times .25) = 0.68 \quad C = 0.68$$

100 acres



COUNTY OF NEVADA
DEPARTMENT OF TRANSPORTATION

DRAINAGE DETAILS

VALUES FOR ESTIMATING
COEFFICIENT
OF RUNOFF "C"

Approved by: John W. Rumsey 5-11-95
Senior Civil Engineer Date D-15

LAND USE DESCRIPTION	HYDROLOGIC SOIL GROUP			
	A	B	C	D
Cultivated land: ^① without conservation treatment	72	81	88	91
with conservation treatment	62	71	78	81
Pasture or range land: poor condition	68	79	86	89
good condition	39	61	74	80
Meadow: good condition	30	58	71	78
Wood or Forest land: thin stand, poor cover, no mulch	45	66	77	83
good cover ^②	25	55	70	77
Open spaces, lawns, parks, golf courses, cemeteries, etc.				
good condition: grass cover on 75% or more of the area	39	61	74	80
fair condition: grass cover on 50% to 75% of the area	49	69	79	84
Commercial and business areas (85% impervious)	89	92	94	95
Industrial districts (72% impervious)	81	88	91	93
Residential: ^③				
Average lot size				
1/8 acre or less		Average % Impervious ^④		
1/4 acre		65	77	85
1/3 acre		38	61	75
1/2 acre		30	57	72
1 acre		25	54	70
		20	51	68
Paved parking lots, roofs, driveways, etc.	98	98	98	98
Streets and roads:				
paved with curbs and storm sewers	98	98	98	98
gravel	76	85	89	91
dirt	72	82	87	89

① For a more detailed description of agricultural land use curve numbers refer to National Engineering Handbook, Section 4, Hydrology, Chapter 9, August 1972.

② Good cover is protected from grazing and litter and brush cover soil.

③ Curve numbers are computed assuming the runoff from the house and driveway is directed towards the street with a minimum of roof water directed to lawns where additional infiltration could occur.

④ The remaining pervious areas (lawn) are considered to be in good pasture condition for these curve numbers.



COUNTY OF NEVADA
DEPARTMENT OF TRANSPORTATION

RUNOFF CURVE NUMBERS

Approved by:

John W. Rumsey 5-11-95

Senior Civil Engineer

Date

STANDARD
DRAWING

D-16

Table 7-3. For Determining the Vertical Distance \bar{y} below the Water Surface to the Center of Gravity of a Cross Section of a Trapezoidal Channel

Let $\frac{\text{depth of water}}{\text{bottom width of channel}} = \frac{D}{b}$ and $C_2 = \text{tabulated value}$. Then $\bar{y} = C_2 D$.

$\frac{D}{b}$	Side slopes of channel, ratio of horizontal to vertical									
	$\frac{1}{8}-1$	$\frac{1}{4}-1$	$\frac{1}{2}-1$	$1-1$	$1\frac{1}{2}-1$	$2-1$	$2\frac{1}{2}-1$	$3-1$	$4-1$	
0.05	.499	.498	.496	.494	.492	.488	.485	.481	.478	.472
.1	.498	.496	.492	.488	.485	.478	.469	.467	.462	.452
.15	.497	.494	.488	.483	.478	.469	.455	.448	.438	.426
.2	.496	.492	.485	.478	.472	.462	.444	.436	.429	.417
.25	.495	.490	.481	.474	.467	.455	.444	.436	.429	.417
.3	.494	.488	.478	.469	.462	.448	.438	.429	.421	.409
.35	.493	.487	.475	.465	.457	.443	.431	.422	.415	.403
.4	.492	.485	.472	.462	.452	.438	.426	.417	.409	.397
.45	.491	.483	.469	.458	.448	.433	.421	.412	.404	.393
.5	.490	.481	.467	.455	.444	.429	.417	.407	.400	.389
.6	.488	.478	.462	.448	.438	.421	.409	.400	.393	.382
.7	.487	.475	.457	.443	.431	.415	.403	.394	.387	.377
.8	.485	.472	.452	.438	.426	.409	.397	.389	.382	.373
.9	.483	.469	.448	.433	.421	.404	.393	.385	.378	.370
1.0	.481	.467	.444	.429	.417	.400	.389	.381	.375	.367
1.1	.480	.464	.441	.425	.413	.396	.385	.378	.372	.364
1.2	.478	.462	.438	.421	.409	.393	.382	.375	.370	.362
1.3	.477	.459	.434	.418	.406	.390	.380	.373	.367	.360
1.4	.475	.457	.431	.415	.403	.387	.377	.370	.365	.359
1.5	.474	.455	.429	.412	.400	.385	.375	.368	.364	.357
1.6	.472	.452	.426	.409	.397	.382	.373	.367	.362	.356
1.7	.471	.450	.423	.407	.395	.380	.371	.365	.361	.355
1.8	.469	.448	.421	.404	.393	.378	.370	.364	.359	.354
1.9	.468	.446	.419	.402	.391	.377	.368	.362	.358	.353
2.0	.467	.444	.417	.400	.389	.375	.367	.361	.357	.352

Table 7-4. For Determining the Area a of the Cross Section of a Circular Conduit Flowing Part Full

Let $\frac{\text{depth of water}}{\text{diameter of channel}} = \frac{D}{d}$ and $C_a = \text{the tabulated value}$. Then $a = C_a d^2$.

$\frac{D}{d}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.0000	.0013	.0037	.0069	.0105	.0147	.0192	.0242	.0294	.0350
.1	.0409	.0470	.0534	.0600	.0668	.0739	.0811	.0885	.0961	.1039
.2	.1118	.1199	.1281	.1365	.1449	.1535	.1623	.1711	.1800	.1890
.3	.1982	.2074	.2167	.2260	.2355	.2450	.2546	.2642	.2739	.2836
.4	.2934	.3032	.3130	.3229	.3328	.3428	.3527	.3627	.3727	.3827
.5	.393	.403	.413	.423	.433	.443	.453	.462	.472	.482
.6	.492	.502	.512	.521	.531	.540	.550	.559	.569	.578
.7	.587	.596	.605	.614	.623	.632	.640	.649	.657	.666
.8	.674	.681	.689	.697	.704	.712	.719	.725	.732	.738
.9	.745	.750	.756	.761	.766	.771	.775	.779	.782	.784

Table 7-5. For Determining the Hydraulic Radius r of the Cross Section of a Circular Conduit Flowing Part Full

Let $\frac{\text{depth of water}}{\text{diameter of channel}} = \frac{D}{d}$ and $C_r = \text{the tabulated value}$. Then $r = C_r d$.

$\frac{D}{d}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.0000	.0007	.013	.020	.026	.033	.039	.045	.051	.057
.1	.063	.070	.075	.081	.087	.093	.099	.104	.110	.115
.2	.121	.126	.131	.136	.142	.147	.152	.157	.161	.166
.3	.171	.176	.180	.185	.189	.193	.198	.202	.206	.210
.4	.214	.218	.222	.226	.229	.233	.236	.240	.243	.247
.5	.250	.253	.256	.259	.262	.265	.268	.270	.273	.275
.6	.278	.280	.282	.284	.286	.288	.290	.292	.293	.295
.7	.296	.298	.299	.300	.301	.302	.302	.303	.304	.304
.8	.304	.304	.304	.304	.304	.303	.303	.302	.301	.299
.9	.298	.296	.294	.292	.289	.286	.283	.279	.274	.267

AREA
F

K_c K_v K_t

7-64

HANDBOOK OF HYDRAULICS

Table 7-13. Values of *K* for Circular Channels in the Formula

$$Q = \frac{K}{n} D^{5/3} s^{1/2}$$

D = depth of water *d* = diameter of channel

$\frac{D}{d}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0		15.02	10.56	8.57	7.38	6.55	5.95	5.47	5.08	4.76
.1	4.49	4.25	4.04	3.86	3.69	3.54	3.41	3.28	3.17	3.06
.2	2.96	2.87	2.79	2.71	2.63	2.56	2.49	2.42	2.36	2.30
.3	2.25	2.20	2.14	2.09	2.05	2.00	1.96	1.92	1.87	1.84
.4	1.80	1.76	1.72	1.69	1.66	1.62	1.59	1.56	1.53	1.50
.5	1.470	1.442	1.415	1.388	1.362	1.336	1.311	1.286	1.262	1.238
.6	1.215	1.192	1.170	1.148	1.126	1.105	1.084	1.064	1.043	1.023
.7	1.004	.984	.965	.947	.928	.910	.891	.874	.856	.838
.8	.821	.804	.787	.770	.753	.736	.720	.703	.687	.670
.9	.654	.637	.621	.604	.588	.571	.555	.535	.516	.496
1.0	.463									

Table 7-14. Values of *K'* for Circular Channels in the Formula

$$Q = \frac{K'}{n} d^{5/3} s^{1/2}$$

D = depth of water *d* = diameter of channel

$\frac{D}{d}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0		.00007	.00031	.00074	.00138	.00222	.00328	.00455	.00604	.00775
.1	.00967	.0118	.0142	.0167	.0195	.0225	.0257	.0291	.0327	.0366
.2	.0406	.0448	.0492	.0537	.0585	.0634	.0686	.0738	.0793	.0849
.3	.0907	.0966	.1027	.1089	.1153	.1218	.1284	.1352	.1420	.1490
.4	.1561	.1633	.1705	.1779	.1854	.1929	.2005	.2082	.2160	.2238
.5	.232	.239	.247	.255	.263	.271	.279	.287	.295	.303
.6	.311	.319	.327	.335	.343	.350	.358	.366	.373	.380
.7	.388	.395	.402	.409	.416	.422	.429	.435	.441	.447
.8	.453	.458	.463	.468	.473	.477	.481	.485	.488	.491
.9	.494	.496	.497	.498	.498	.498	.496	.494	.489	.483
1.0	.463									

STEADY UNIFORM FLOW IN OPEN CHANNELS 7-65

Table 7-15. Values of *K* for Parabolic Channels in the Formula

$$Q = \frac{K}{n} D^{5/3} s^{1/2}$$

D = depth of water *T* = top width of channel

$\frac{D}{T}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0		75.59	37.77	25.16	18.85	15.05	12.52	10.71	9.35	8.28
.1	7.43	6.73	6.15	5.65	5.23	4.86	4.53	4.24	3.99	3.76
.2	3.55	3.36	3.19	3.04	2.89	2.76	2.64	2.52	2.42	2.32
.3	2.226	2.140	2.059	1.984	1.912	1.845	1.782	1.722	1.665	1.611
.4	1.560	1.511	1.465	1.421	1.379	1.339	1.301	1.265	1.230	1.197
.5	1.165	1.134	1.105	1.077	1.050	1.024	.999	.975	.952	.929
.6	.908	.887	.867	.848	.829	.811	.794	.777	.761	.745
.7	.730	.715	.701	.687	.674	.661	.648	.636	.624	.613
.8	.601	.590	.580	.570	.560	.550	.540	.531	.522	.514
.9	.505	.497	.489	.481	.473	.466	.458	.451	.444	.438
1.0	.431									

Table 7-16. Values of *K'* for Parabolic Channels in the Formula

$$Q = \frac{K'}{n} T^{5/3} s^{1/2}$$

D = depth of water *T* = top width of channel

$\frac{D}{T}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0		.00036	.00111	.00219	.00353	.00511	.00691	.00891	.01110	.01347
.1	.0160	.0187	.0215	.0245	.0276	.0308	.0342	.0376	.0412	.0448
.2	.0486	.0524	.0563	.0603	.0643	.0684	.0726	.0768	.0811	.0854
.3	.0898	.0942	.0987	.1032	.1077	.1123	.1168	.1215	.1261	.1308
.4	.1355	.1402	.1450	.1497	.1545	.1593	.1641	.1689	.1737	.1786
.5	.183	.188	.193	.198	.203	.208	.213	.218	.223	.228
.6	.232	.237	.242	.247	.252	.257	.262	.267	.272	.277
.7	.282	.287	.292	.297	.302	.307	.312	.317	.322	.327
.8	.332	.337	.342	.347	.352	.357	.361	.366	.371	.376
.9	.381	.386	.391	.396	.401	.406	.411	.416	.421	.426
1.0	.431									

X_{3/8}

X_{3/8}

CRITICAL DEPTH

CRITICAL SLOPE

CHANNEL ENTRANCE

HYDRAULIC JUMP

COMPOSITE CHANNELS

K_c

10.000

X_{3/8}



SCALE: 1" = 200'
CONTOUR INTERVAL: 2'

LEGEND:

-  DRAINAGE SUBAREA BOUNDARY
-  EXISTING CONTOUR W/ ELEVATION
-  PROPERTY LINE
-  DRAINAGE SUBAREA DESIGNATION
ACREAGE OF SUBAREA

TERMINOLOGY PER POND PACK PROGRAM

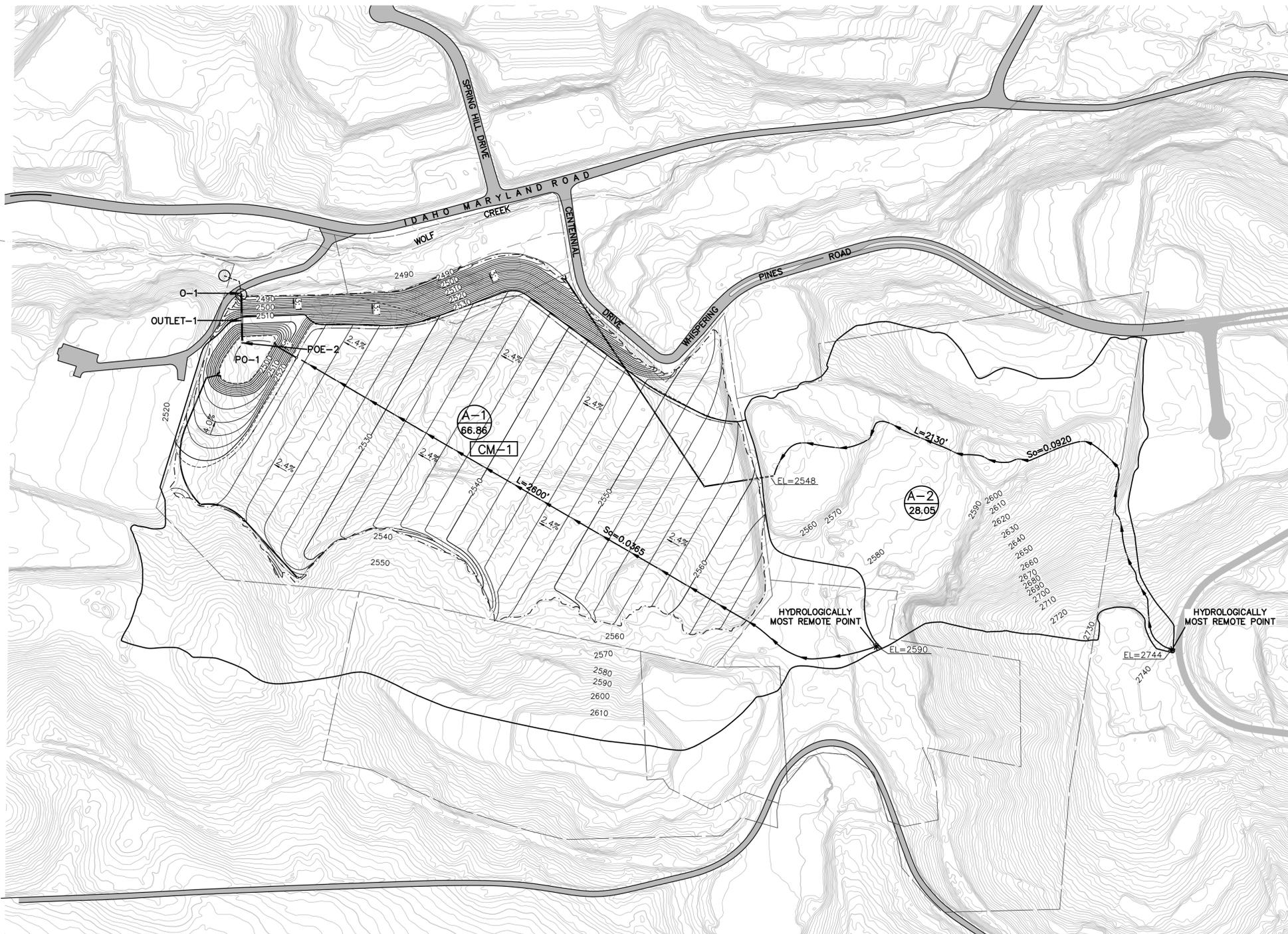
-  CATCHMENT AREA (SAME AS DRAINAGE SUBAREA ABOVE)
-  POND #
-  OUTLET #
-  POND OUTLET ENTRANCE #
-  OUTLET CULVERT #

REVISION:	DATE:	DESCRIPTION:

CENTENNIAL SITE
RISE GRASS VALLEY INC.
SEC. 26, T.16N., R.8E., M.D.M.
NEVADA COUNTY , CALIFORNIA

**HYDROLOGY MAP
PRE-DEVELOPMENT**

H-1



REVISION:	DATE:	DESCRIPTION:

CENTENNIAL SITE
RISE GRASS VALLEY INC.
SEC. 26, T.16N., R.8E., M.D.M.
NEVADA COUNTY , CALIFORNIA

HYDROLOGY MAP
POST-DEVELOPMENT

H-2

SCALE: 1" = 200'
CONTOUR INTERVAL: 2'

- LEGEND:**
- DRAINAGE SUBAREA BOUNDARY
 - EXISTING CONTOUR W/ ELEVATION
 - PROPOSED CONTOUR W/ ELEVATION
 - - - PROPOSED DAYLIGHT LINE
 - - - PROPOSED FLOWLINE OF CONCRETE V-DITCH
 - PROPERTY LINE
 - PROPOSED STORM DRAIN LINE
 - PROPOSED STORM DRAIN INLET
 - PROPOSED STORM DRAIN MANHOLE
 - A-1 DRAINAGE SUBAREA DESIGNATION
 - 0.13 ACREAGE OF SUBAREA

- TERMINOLOGY PER POND PACK PROGRAM**
- CM-1 CATCHMENT AREA (SAME AS DRAINAGE SUBAREA ABOVE)
 - PO-1 POND #
 - O-1 OUTLET #
 - POE-2 POND OUTLET ENTRANCE #
 - OUTLET-1 OUTLET CULVERT #



ZOH
SCALE: 1" = 200'
CONTOUR INTERVAL: 2'

REVISION:	DATE:	DESCRIPTION:

BRUNSWICK SITE
RISE GRASS VALLEY INC.
SEC. 31, T.16N., R.9E., M.D.M.
NEVADA COUNTY , CALIFORNIA

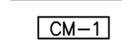
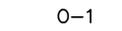
**HYDROLOGY MAP
PRE-DEVELOPMENT**

H-3

LEGEND :

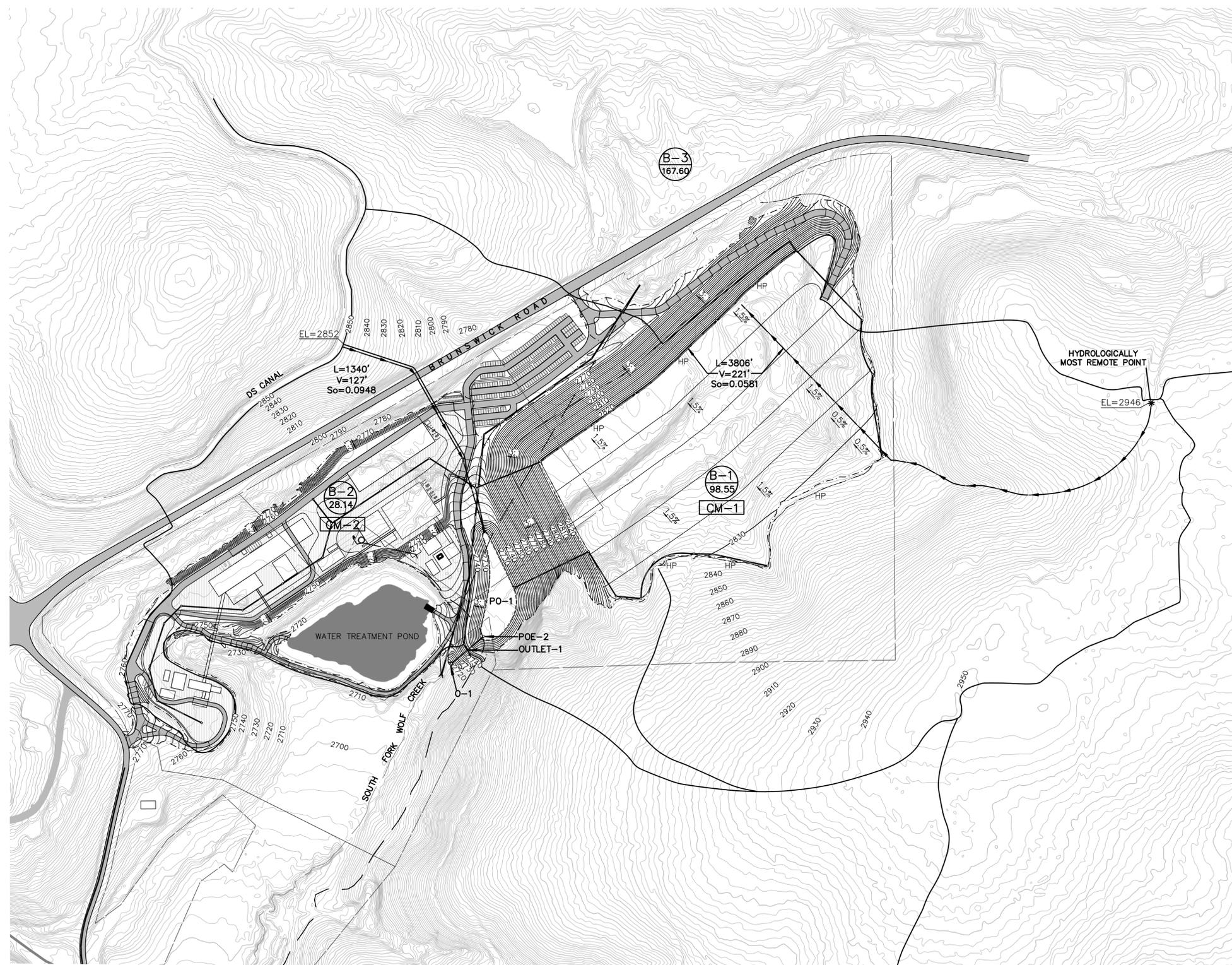
-  DRAINAGE SUBAREA BOUNDARY
-  EXISTING CONTOUR W/ ELEVATION
-  PROPERTY LINE
-  DRAINAGE SUBAREA DESIGNATION
ACREAGE OF SUBAREA

TERMINOLOGY PER POND PACK PROGRAM

-  CATCHMENT AREA (SAME AS DRAINAGE SUBAREA ABOVE)
-  POND #
-  OUTLET #
-  POND OUTLET ENTRANCE #
-  OUTLET CULVERT #



ZOH
SCALE: 1" = 200'
CONTOUR INTERVAL: 2'



REVISION:	DATE:	DESCRIPTION:

BRUNSWICK SITE
RISE GRASS VALLEY INC.
SEC. 31, T.16N., R.9E., M.D.M.
NEVADA COUNTY , CALIFORNIA

HYDROLOGY MAP
POST-DEVELOPMENT

H-4

LEGEND:

- DRAINAGE SUBAREA BOUNDARY
- EXISTING CONTOUR W/ ELEVATION
- PROPOSED CONTOUR W/ ELEVATION
- - - PROPOSED DAYLIGHT LINE
- - - PROPOSED FLOWLINE OF CONCRETE V-DITCH
- PROPERTY LINE
- PROPOSED STORM DRAIN LINE

- PROPOSED STORM DRAIN INLET
- PROPOSED STORM DRAIN MANHOLE
- B-1 28.14 DRAINAGE SUBAREA DESIGNATION
- 0.13 ACREAGE OF SUBAREA

TERMINOLOGY PER POND PACK PROGRAM

- CM-1 CATCHMENT AREA (SAME AS DRAINAGE SUBAREA ABOVE)
- PO-1 POND #
- O-1 OUTLET #
- POE-2 POND OUTLET ENTRANCE #
- OUTLET-1 OUTLET CULVERT #