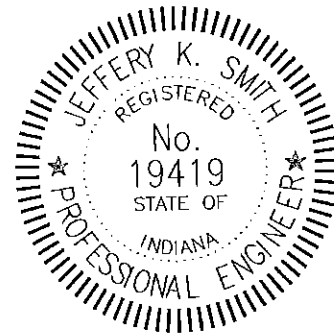


Preliminary Drainage Report for
Deer Meadows

City of Franklin, Johnson County, Indiana

Dated: November 16, 2017



Calculations Prepared By:

PROJECTS *plus*

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Certified By:

 11/16/17
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REPORT INDEX:

I. Technical Information Data

- Summary of Pre-Developed Drainage Conditions and Allowable Release Rates
- Summary of Post-Developed Drainage Conditions and Water Quality Calculations
- Engineering Methodology and Erosion Control
- Soils Map
- Rainfall Data and Distribution

II. Pre-Developed Drainage Calculations

- 'CN' Calculations and TR55 TC Worksheets
- 2, 10 & 100 yr. Hydrography Summary Reports
- Allowable Release Rates Calculations

III. Post-Developed Drainage Calculations

- 'CN' Calculations and TR55 TC Worksheets
- Pond Summary
- Pond Control Box Detail
- Pond Spillway Calculation
- 2, 10 & 100 yr. Hydrography Summary Reports
- Emergency Spillway Calculations

IV. Water Quality Calculations

- Water Quality Calculations
- Hydrography Summary Reports

V. Watershed Delineation Maps

- Pre-Developed Drainage Map
- Post-Developed Drainage Map

TECHNICAL INFORMATION DATA

Summary of Pre-Developed Drainage Conditions:

The project, "Deer Meadows" is located west of the existing Deer Run Subdivision, north of the existing Deer Trails Subdivision, east of the existing Cumberland Commons Subdivision and south of the existing Meadows at Simon Farms Subdivision on an undeveloped 25.202 acre tract in the City of Franklin, Franklin Township, Johnson County, Indiana. The existing ground cover is comprised of pasture field. The site was previously cultivated farmland. The site is located within the 'B' and 'C' soils classifications per the Soil Survey Maps for Johnson County.

The overall pre-developed site consisted of two onsite watershed basins. The remaining acreage of undeveloped ground in the Deer Meadows Subdivision is 25.202 acres. The pre-developed runoff rates were recomputed for the overall 84.21 acres was developed as Deer Village, Deer Trails and Deer Run Subdivisions. These calculations were computed for the entire project site prior to any construction activity to verify the overall pre-developed runoff release rates. These recalculated runoff rates were used to verify that the overall post-developed drainage design for the site meets the General Drainage Standards, Chapter 6.19 of the City of Franklin Subdivision Control Ordinance.

The watershed delineations are shown on the "Pre-Developed Watershed Delineation Map" and calculations provided in the "Pre-Development Calculations" section of this report. The characteristics of the Pre-Development Basins are as follows:

Onsite Pre-Basin '1' consists of grass, having once been farmland and drains to the east to an 24" RCP storm sewer located along the east property line, ultimately to Canary Ditch. A summary of the drainage release runoff:

<u>Onsite Pre-Basin '1'</u>		
A = 76.81 acres	CN = 68	T/C=40 min.
Q ₂ = 5.83 cfs,	Q ₁₀ = 19.08 cfs, Q ₁₀₀ = 52.09 cfs	

Onsite Pre-Basin '2' consists of grass and drains to the west to an existing defined channel along the west property line. This defined channel drains ultimately to Young's Creek. A summary of the drainage release runoff:

<u>Onsite Pre-Basin '2'</u>		
A = 7.40 acres	CN = 68	T/C=13 min.
Q ₂ = 0.61 cfs,	Q ₁₀ = 2.17 cfs, Q ₁₀₀ = 6.76 cfs	

Allowable Release Rates:

The allowable runoff release rates per Section 6.19 of the Subdivision Control Ordinance of the City of Franklin are as follows:

- The peak discharge from the 100-yr. post-developed storm event shall not exceed the peak discharge from the 10-yr. pre-developed storm event.
- The peak discharge from the 10-yr. post-developed storm event shall not exceed the peak discharge from the 2-yr. pre-developed storm event.

The allowable post-developed release rates for the site were calculated per the above requirements and a summary of the release rates are as follows:

Release Point #1

$Q_{10} = 5.83$ cfs, $Q_{100} = 19.08$ cfs

Release Point #2

$Q_{10} = 0.61$ cfs, $Q_{100} = 2.17$ cfs

Summary of Post-Developed Drainage Conditions:

Deer Meadows Sections 2-5 will consist of 85 single-family residences. This subdivision will be developed in four phases. Section One was developed in 2016. The infrastructure improvements will connect to the existing Section One, Deer Run and Deer Trails subdivisions and to the Meadows at Simon Farms subdivision.

Drainage will be routed to street curb inlets, grass swales and catch basins and will be routed via storm sewer conveyance systems to a series of proposed and existing detention ponds. The drainage design for the site is designed to meet the General Drainage Standards, Chapter 6.19 of the City of Franklin Subdivision Control Ordinance.

The proposed developed site is comprised of four onsite watershed basins routing stormwater runoff to two proposed detention ponds and to two existing detention ponds, as shown on the "Post-Developed Watershed Delineation Map" and calculations provided in the "Post-Development Calculations" section of this report. The summaries of the Post-Development Watershed characteristics are as follows:

Onsite Post-Basin '1': The proposed drainage basin is comprised of existing 1/4 acre residential lots. The runoff drains via an existing storm sewer conveyance system to existing detention pond #1. The existing detention pond releases via a 21" RCP storm sewer east to the existing 24" RCP storm sewer in the adjoining property. This infrastructure system was installed in the late 1990's and no modification will be made to this detention basin.

A = 38.69 acres	CN = 79
Q ₂ = 8.41 cfs, Q ₁₀ = 26.26 cfs, Q ₁₀₀ = 60.26 cfs	
Total to Pond	
Q ₂ = 8.42 cfs, Q ₁₀ = 26.32 cfs, Q ₁₀₀ = 60.48 cfs	
Detention Pond Release	
Q ₂ = 1.91 cfs, Q ₁₀ = 7.41 cfs, Q ₁₀₀ = 16.63 cfs	
N.P. 743.55	100 yr. 746.58

Onsite Post-Basin '2': The proposed drainage basin is comprised of existing and proposed 1/4 acre residential lots. The runoff drains via a storm sewer conveyance system to detention pond #2. The detention pond releases will be modified with a proposed water quality control box and then will outlet to a 15" RCP storm sewer and continue to release east to detention pond #1 as the current infrastructure is constructed.

A = 14.25 acres	CN = 79
Q ₂ = 3.10 cfs, Q ₁₀ = 9.67 cfs, Q ₁₀₀ = 22.20 cfs	
Total to Pond	
Q ₂ = 3.12 cfs, Q ₁₀ = 9.76 cfs, Q ₁₀₀ = 22.53 cfs	
Detention Pond Release	
Q ₂ = 0.49 cfs, Q ₁₀ = 2.22 cfs, Q ₁₀₀ = 7.66 cfs	
N.P. 747.95	100 yr. 750.34

Onsite Post-Basin '3': The proposed drainage basin is comprised of existing and proposed 1/4 acre residential lots. The runoff drains via a storm sewer conveyance system to detention pond #3. The detention pond releases via a proposed water quality control box and a 12" RCP storm sewer east to detention pond #2.

A = 16.85 acres	CN = 79
Q ₂ = 3.98 cfs, Q ₁₀ = 11.44 cfs, Q ₁₀₀ = 26.24 cfs	
Detention Pond Release	
Q ₂ = 0.36 cfs, Q ₁₀ = 0.63 cfs, Q ₁₀₀ = 4.20 cfs	
N.P. 749.00	100 yr. 750.97

Onsite Post-Basin '5': The proposed drainage basin is comprised of proposed 1/4 acre residential lots. The runoff drains via a storm sewer conveyance system to detention pond #5. The detention pond releases via a 12" RCP storm sewer east to an existing storm sewer system that drains to detention pond #2.

A = 7.66 acres	CN = 79
Q ₂ = 1.79 cfs, Q ₁₀ = 5.86 cfs, Q ₁₀₀ = 13.47 cfs	
Detention Pond Release	
Q ₂ = 0.22 cfs, Q ₁₀ = 0.59 cfs, Q ₁₀₀ = 1.05 cfs	
N.P. 750.00	100 yr. 750.94

Onsite Post-Basin '4': The proposed drainage basin is comprised of proposed 1/4 acre residential lots. The runoff drains via a storm sewer conveyance system to detention pond #4. The detention pond releases via a proposed water quality control box and a 12" RCP storm sewer west to an existing storm sewer pipe located in the Cumberland Commons Section One. This system was sized and designed to accept the proposed runoff from this drainage basin.

A = 6.12 acres	CN = 79
Q ₂ = 1.43 cfs, Q ₁₀ = 4.68 cfs, Q ₁₀₀ = 10.76 cfs	
Detention Pond Release	
Q ₂ = 0.23 cfs, Q ₁₀ = 0.44 cfs, Q ₁₀₀ = 1.41 cfs	
N.P. 750.00	100 yr. 751.38

Water Quality:

The two wet detention ponds (pond #3 & #4) and modification to the existing wet detention pond (pond #2) and associated pond control boxes are designed to meet the City of Franklin Subdivision Control Ordinance, Section 6.19, for water quality design. The water quality detention pond is designed for option #1; detain 20% of the 0.5" direct runoff for 24 hours past the peak. See calculations within the Water Quality Calculations portion of this report.

Engineering Methodology:

The calculations contained herein have been prepared in compliance with the City of Franklin Subdivision Control Ordinance. The detention facilities were designed using HYDRAFLOW Hydrograph Routing Module. A storm hydrograph is developed using the "SCS Curve Number Method" for each watershed and routed through a user defined detention basin and outlet structure configuration.

Water surface elevations and outlet rates are determined by the storage indication method which uses a stage/storage/discharge relationship and inflow hydrograph to set the inflow minus the outflow equal to the change in storage. The post-developed drainage basins and basin characteristics for each pond are shown on the "Post-Development Drainage Map".

The storm sewer requirements are outlined in City of Franklin Subdivision Control Ordinance. The storm sewer calculations are not provided within the Preliminary Drainage Calculations and will be provided when the Final Drainage Calculations are submitted for review. The storm sewer systems shall be designed using the rational method. Coefficients are to be computed based upon percentages of proposed impervious surfaces and open space. The Intensity-Duration Frequency curve for central Indiana will be used to determine runoff rates from the applicable areas. Times of concentration will be calculated using TR-55, with a minimum of 5 minutes.

Erosion Control:

The land disturbing activities will be greater than 1 acre, so a Rule 5 submittal is required. An Erosion Control Plan with an activities schedule will be submitted as part of the final construction plans. Standard maintenance schedules and details will be included. Swales and pond banks will be mulch-seeded and have an erosion control blanket installed. All drainage easements will be mulch-seeded and the rights-of-way will be seeded with a permanent seed mixture. A perimeter filter fence and inlet protection shall be installed at the locations shown in the final construction plans.

SOILS MAP



SCALE 1" = 400'

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Hours	Minutes	Return Period - Rainfall Intensity (in/hr)					
		2	5	10	25	50	100
0.08	5	4.75	6.14	6.99	8.08	8.83	9.59
0.17	10	3.63	4.75	5.48	6.40	7.07	7.77
0.25	15	2.97	3.92	4.53	5.34	5.84	6.33
0.5	30	1.98	2.64	3.08	3.65	4.10	4.50
1	60	1.25	1.67	1.96	2.31	2.62	2.88
2	120	0.78	1.02	1.20	1.40	1.59	1.75
3	180	0.56	0.75	0.88	1.03	1.17	1.29
6	360	0.33	0.44	0.52	0.60	0.68	0.75
12	720	0.20	0.26	0.30	0.35	0.39	0.43
24	1440	0.11	0.15	0.17	0.20	0.22	0.25

Hours	Minutes	Return Period - Rainfall Depth (in)					
		2	5	10	25	50	100
0.08	5	0.40	0.51	0.58	0.67	0.74	0.81
0.17	10	0.61	0.79	0.91	1.07	1.18	1.30
0.25	15	0.74	0.99	1.14	1.34	1.49	1.63
0.5	30	0.99	1.32	1.55	1.83	2.05	2.25
1	60	1.25	1.67	1.96	2.31	2.62	2.88
2	120	1.82	2.04	2.40	2.80	3.18	3.50
3	180	1.68	2.23	2.64	3.09	3.51	3.87
6	360	1.98	2.84	3.12	3.60	4.08	4.50
12	720	2.40	3.12	3.80	4.20	4.68	5.16
24	1440	2.64	3.50	4.08	4.80	5.28	6.00

TABLE 202-02: IDF and IDD Tables for Indianapolis, IN

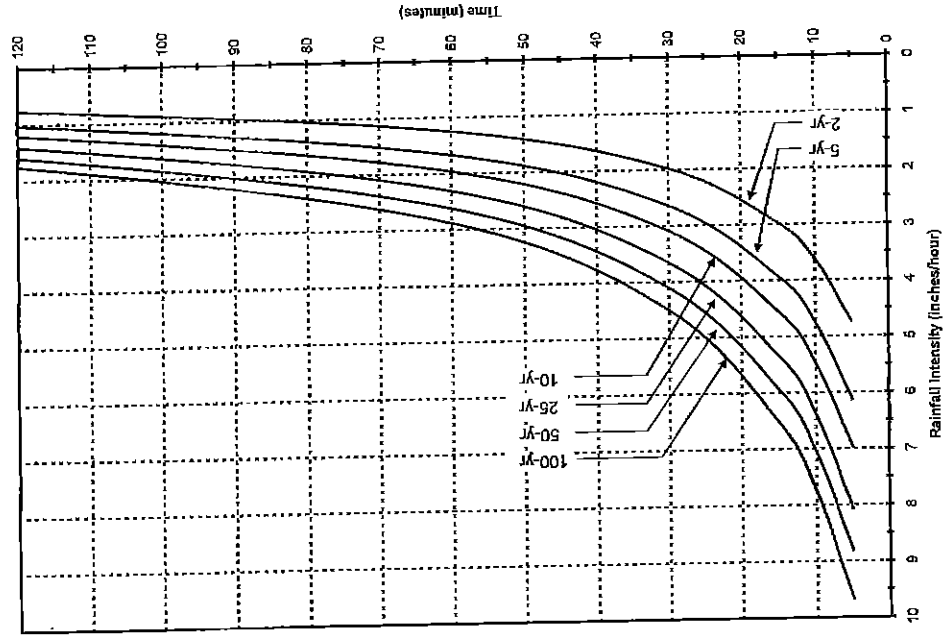


FIGURE 202-01: Indianapolis IDF Curve

Surface Description	n
Smooth surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated Soils: Residue cover <= 20%	0.05
Residue cover > 20%	0.17
Grass: Short grass prairie	0.15
Dense grasses	0.24
Bermuda grass	0.41
Range (natural)	0.13
Woods: Light underbrush	0.40
Dense underbrush	0.50

TABLE 203.01: Roughness coefficients (Manning's n) for sheet flow

TYPE OF SURFACE	RUNOFF COEFFICIENT ^a
<u>Non-Urban Areas</u>	
Bare earth	0.55
Sleep grassed areas (slope 2:1)	0.60
Turf meadows	0.25
Forested areas	0.20
Cultivated fields	0.30
<u>Urban Areas</u>	
All watertight roof surfaces	0.90
Pavement	0.85
Gravel	0.85
Impervious soils (heavy)	0.65
Impervious soils (with turf)	0.45
Slightly pervious soil	0.25
Slightly pervious soil (with turf)	0.20
Moderately pervious soil	0.15
Moderately pervious soil (with turf)	0.10
Business, Commercial & Industrial	0.85
Apartments & Townhouses	0.70
Schools & Churches	0.55
Single Family Lots < 10,000 SF	0.45
Lots < 12,000 SF	0.45
Lots < 17,000 SF	0.45
Lots > 1/4 acre	0.40
Park, Cemetery or Unimproved Area	0.35
	0.30

TABLE 204.01: Runoff Coefficients^a for Use in the Rational Method

Species or variety name and tail symbol	Hydro- group	Frequency	Flowering Duration	Months	Depth	Kind	Height water table	Periodical fruit action
Prostrata: "C" 1 "C" 2	B/D	Frequent	Brid.	Dec-May	0-1.0	Apparent	Dec-May	High.
"C" 3 "C" 4	C	Rare			1.0-2.0	Apparent	Jan-Apr	High.
"C" 5 "C" 6	C	Rare			1.0-2.0	Apparent	Jan-Apr	High.
"C" 7 "C" 8	B	Rare			>4.0			Moderate.
"C" 9 "C" 10	C	Frequent	Brid.	Oct-Jan	2.0-4.0	Apparent	Jan-Apr	High.
"C" 11 "C" 12	B	Rare			>4.0			Moderate.
"C" 13 "C" 14	B	Frequent	Brid.	Oct-Jan	>4.0			Moderate.
"C" 15 "C" 16	B	Rare			>4.0			Moderate.
"C" 17 "C" 18	B	Rare			>4.0			Moderate.
"C" 19 "C" 20	B	Rare			>4.0			Moderate.
"C" 21 "C" 22	B/D	Rare			0-1.0	Apparent	Dec-May	High.
"C" 23 "C" 24	C	Frequent	Brid.	Oct-Jan	1.0-2.0	Apparent	Jan-Apr	High.
"C" 25 "C" 26	C	Rare			1.0-2.0	Apparent	Jan-Apr	High.
"C" 27 "C" 28	C	Frequent	Long	Oct-Jan	0-0.5	Apparent	Nov-Jun	High.
"C" 29 "C" 30	B/D	Frequent	Brid.	Dec-May	0-1.0	Apparent	Dec-May	High.
"C" 31 "C" 32	C	Rare			1.0-2.0	Apparent	Jan-Apr	High.
"C" 33 "C" 34	B	Rare			>4.0			Moderate.
"C" 35 "C" 36	B	Rare			>4.0			Moderate.
"C" 37 "C" 38	B	Frequent	Brid.	Oct-Jan	>4.0			Moderate.
"C" 39 "C" 40	B	Rare			>4.0			Moderate.
"C" 41 "C" 42	B/D	Frequent	Brid.	Dec-May	0-1.0	Apparent	Dec-May	High.
"C" 43 "C" 44	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 45 "C" 46	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 47 "C" 48	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 49 "C" 50	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 51 "C" 52	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 53 "C" 54	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 55 "C" 56	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 57 "C" 58	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 59 "C" 60	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 61 "C" 62	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 63 "C" 64	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 65 "C" 66	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 67 "C" 68	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 69 "C" 70	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 71 "C" 72	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 73 "C" 74	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 75 "C" 76	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 77 "C" 78	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 79 "C" 80	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 81 "C" 82	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 83 "C" 84	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 85 "C" 86	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 87 "C" 88	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 89 "C" 90	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 91 "C" 92	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 93 "C" 94	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 95 "C" 96	C	Rare			0-1.0	Apparent	Dec-May	High.
"C" 97 "C" 98	C	Frequent	Brid.	Oct-Jan	0-1.0	Apparent	Dec-May	High.
"C" 99 "C" 100	C	Rare			0-1.0	Apparent	Dec-May	High.

These mapping units are based on the results of the first survey of the area. The mapping unit description for the composition and the results of the first survey of the area are given in the table.

City of Indianapolis
 Communications Manual
 Appendix page A2-11
 January 2011 - FINAL

**City of Indianapolis
Stormwater Specifications Manual**

City of Indianapolis
Stormwater Specifications Manual
Appendix page A2-12
January 2011 - FINAL

**City of Indianapolis
Stormwater Specifications Manual**

Cover Description	Curve Numbers for Hydrologic Soil Groups				
	Average Percent ²	A	B	C	D
Cover Type and Hydrologic Condition	Impervious Area				
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.)		68	79	96	99
Poor condition (grass cover < 50%)		49	59	79	84
Fair condition (grass cover 50% to 75%)		39	61	74	80
Good condition (grass cover > 75%)					
Impervious Areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and Roads:					
Paved; curbs and storm drains (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Urban Districts:					
Commercial and Business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential Districts by Average Lot Size:					
0.125 acre or less (downtowns)	65	77	85	90	92
0.25 acre	36	61	75	83	87
0.33 acre	30	57	72	81	86
0.50 acre	25	54	70	80	85
1.00 acre	20	51	68	79	84
2.00 acre	12	46	55	77	82
Developing Urban Areas					
Newly graded areas (pervious area only, no vegetation)		77	96	91	94
Idle lands (GN's) are determined using cover types similar to those in Table 205-04.					

Average runoff condition, and $I_p = 0.25$

The average percent impervious area shown was used to develop the composite C/Ns. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a C/N of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. If the impervious area is not connected, the NRCS method has an adjustment to reduce the effect.

¹ CNs shown are equivalent to those of pasture. Composite CNs may be computed for other combinations of open space cover type. method has an adjustment to reduce the effect.

Cover Description	Curve Numbers for Hydrologic Soil Groups			
	A	B	C	D
Cover Type and Hydrologic Condition				
Cultivated Land (Row Crops)	72	81	88	91
With conservation treatment	62	71	78	81
Without conservation treatment				
Pasture or Range Land	68	78	86	89
Poor condition	39	61	74	80
Good condition				
Meadow	30	58	71	78
Good condition				
Wood or Forest Land	45	58	77	83
Thin stand, poor cover, no mulch	25	55	70	77
Good cover				

TABLE 205-03: Runoff Curve Numbers for Undeveloped Areas
(SOURCE: 210-VI-TR-55, Second Ed., June 1986)

Cover Description	Curve Numbers for Hydrologic Soil Groups			
	A	B	C	D
Cover Type and Hydrologic Condition				
Pasture, grassland or range with continuous forage for grazing.	58	79	86	89
Poor	48	69	79	84
Fair	39	61	74	80
Good				
Meadow with continuous grass, protected from grazing and generally mowed for hay.	30	58	71	78
Brush/brush-weed-grass mixture with brush being the major element				
Poor	48	67	77	83
Fair	35	55	70	77
Good	30	48	55	73
Woods and grass combination (orchard or tree farm).				
Poor	57	73	82	86
Fair	43	65	76	82
Good	32	56	72	78
Woods				
Poor	45	66	77	83
Fair	36	60	73	79
Good	30	55	70	77
Farmsteads	59	74	82	86

TABLE 206-04: Runoff Curve Numbers for Agricultural Lands
(SOURCE: 210-VI-TR-55, Second Ed., June 1986)

Pre-Developed Drainage Conditions

Runoff curve number (CN) and Time of Concentration (TC) Calculations

Project: Deer Meadows

By: JPH

Date: 8/12/15

Circle one: ☒ Present ☐ Developed

Onsite Basin 1

Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN I/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, "B"	Row Crops (Good Condition)	71	0.00	0.0
CrA 'C'	Row Crops (Good Condition)	78	0.00	0.0
Br, CsB2, MnB2, MnC2, "B"	Pasture/Grassland/Open Space (Good Condition)	61	36.50	2226.5
CrA 'C'	Pasture/Grassland/Open Space (Good Condition)	74	40.31	2982.9
Br, CsB2, MnB2, MnC2, "B"	Woods (Good Condition)	58	0.00	0.0
CrA 'C'	Woods (Good Condition)	72	0.00	0.0
	Impervious Area	98	0.00	0.0
				0.0
Totals=			76.81	5209.44

CN (weighted) = $\frac{\text{Total Product}}{\text{Total Area}}$
 CN (weighted) = $\frac{5209.4}{76.8}$
 CN (weighted) = **67.8**
 US CN = **68**

Time of Concentration

Sheet Flow
Shallow Concentrated

	$T.C. = \frac{0.01}{2.64^{0.50}} \times \left(\frac{0.17}{0.02^{0.40}} \times 100 \right)^{0.80} =$					12 Minutes
Unpaved:	$T.C. = 16.1 \times 0.01^{0.5} = \frac{1.61 \text{ ft/sec}}{2750 \text{ feet}} =$					28 Minutes
Paved:	$T.C. = 20.3 \times 0.01^{0.5} = \frac{2.03 \text{ ft/sec}}{0 \text{ feet}} =$					0 Minutes
Minimum T/C = 5 Minutes					T/c Total=	40 Minutes

Runoff curve number (CN) and Time of Concentration (TC) Calculations

Project: Deer Meadows

By: JPH

Date: 8/12/15

Circle one: ☒ Present ☐ Developed

Onsite Basin 2

Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, "B"	Row Crops (Good Condition)	71	0.00	0.0
CrA 'C'	Row Crops (Good Condition)	78	0.00	0.0
Br, CsB2, MnB2, MnC2, "B"	Pasture/Grassland/Open Space (Good Condition)	61	3.50	213.5
CrA 'C'	Pasture/Grassland/Open Space (Good Condition)	74	3.90	288.6
Br, CsB2, MnB2, MnC2, "B"	Woods (Good Condition)	58	0.00	0.0
CrA 'C'	Woods (Good Condition)	72	0.00	0.0
	Impervious Area	98	0.00	0.0
				0.0
Totals=			7.40	502.10

Total Product
 CN (weighted) = 502.1
Total Area
 CN (weighted) = 7.4
 US CN = 67.9
 US CN = 68

Time of Concentration

Shallow Concentrated Sheet Flow	$T.C.= \frac{0.01}{2.64^{0.50}} \times \left(\frac{0.17}{0.03^{0.40}} \times 100 \right)^{0.80} =$						10 Minutes	
	Unpaved:	T.C.=	16.1	x	$0.02^{0.5} =$	2.28	ft/sec	=
						431	feet	
						2.28	ft/sec	
	Paved:	T.C.=	20.3	x	$0.01^{0.5} =$	2.03	ft/sec	=
						0	feet	
						2.03	ft/sec	
Minimum T/C = 5 Minutes							T/c Total=	13 Minutes

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	2.08	3	72	5,219	---	----	-----	Onsite 1-1 hr.
2	SCS Runoff	3.57	3	108	17,385	---	----	-----	Onsite 1-2 hr.
3	SCS Runoff	3.81	3	102	27,488	---	----	-----	Onsite 1-3 hr.
4	SCS Runoff	3.94	3	171	51,559	---	----	-----	Onsite 1-6 hr.
5	SCS Runoff	5.55	3	366	94,748	---	----	-----	Onsite 1-12 hr.
6	SCS Runoff	5.83	3	945	123,675	---	----	-----	Onsite 1-24 hr.
7	SCS Runoff	0.29	3	54	511	---	----	-----	Onsite 2-1 hr.
8	SCS Runoff	0.39	3	102	1,701	---	----	-----	Onsite 2-2 hr.
9	SCS Runoff	0.42	3	87	2,690	---	----	-----	Onsite 2-3 hr.
10	SCS Runoff	0.41	3	162	5,046	---	----	-----	Onsite 2-6 hr.
11	SCS Runoff	0.58	3	327	9,273	---	----	-----	Onsite 2-12 hr.
12	SCS Runoff	0.61	3	936	12,104	---	----	-----	Onsite 2-24 hr.
15015 Pre 1-2.gpw					Return Period: 2 Year			Wednesday, Aug 12 2015, 11:07 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 11:8 AM

Hyd. No. 6

Onsite 1-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 5.83 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Drainage area	= 76.81 ac	Curve number	= 68
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 40.0 min
Total precip.	= 2.64 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 123,675 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
14.20 2.96	15.90 5.70	17.60 3.78
14.25 3.04	15.95 5.60	17.65 3.74
14.30 3.13	16.00 5.48	17.70 3.72
14.35 3.22	16.05 5.36	17.75 3.71
14.40 3.31	16.10 5.26	17.80 3.71
14.45 3.40	16.15 5.16	17.85 3.72
14.50 3.49	16.20 5.08	17.90 3.74
14.55 3.59	16.25 5.01	17.95 3.75
14.60 3.69	16.30 4.95	18.00 3.76
14.65 3.79	16.35 4.91	18.05 3.76
14.70 3.90	16.40 4.87	18.10 3.75
14.75 4.02	16.45 4.85	18.15 3.71
14.80 4.14	16.50 4.85	18.20 3.66
14.85 4.25	16.55 4.86	18.25 3.60
14.90 4.37	16.60 4.88	18.30 3.52
14.95 4.48	16.65 4.91	18.35 3.42
15.00 4.59	16.70 4.95	18.40 3.31
15.05 4.70	16.75 4.98	18.45 3.21
15.10 4.81	16.80 5.02	18.50 3.11
15.15 4.91	16.85 5.03	18.55 3.02
15.20 5.01	16.90 5.02	18.60 2.95
15.25 5.11	16.95 4.99	
15.30 5.21	17.00 4.94	
15.35 5.30	17.05 4.86	...End
15.40 5.39	17.10 4.77	
15.45 5.47	17.15 4.65	
15.50 5.56	17.20 4.50	
15.55 5.64	17.25 4.37	
15.60 5.73	17.30 4.25	
15.65 5.79	17.35 4.14	
15.70 5.82	17.40 4.05	
15.75 5.83 <<	17.45 3.96	
15.80 5.81	17.50 3.89	
15.85 5.77	17.55 3.83	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 11:8 AM

Hyd. No. 12

Onsite 2-24 hr.

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Drainage area = 7.40 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 2.64 in
 Storm duration = 24 hrs

Peak discharge = 0.61 cfs
 Time interval = 3 min
 Curve number = 68
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 13.0 min
 Distribution = Huff-3rd
 Shape factor = 484

Hydrograph Volume = 12,104 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
14.00 0.31	15.70 0.58	17.40 0.36
14.05 0.32	15.75 0.53	17.45 0.36
14.10 0.32	15.80 0.50	17.50 0.36
14.15 0.33	15.85 0.47	17.55 0.36
14.20 0.34	15.90 0.46	17.60 0.37
14.25 0.35	15.95 0.45	17.65 0.37
14.30 0.36	16.00 0.46	17.70 0.37
14.35 0.37	16.05 0.46	17.75 0.37
14.40 0.37	16.10 0.46	17.80 0.37
14.45 0.38	16.15 0.47	17.85 0.37
14.50 0.40	16.20 0.47	17.90 0.37
14.55 0.41	16.25 0.47	17.95 0.38
14.60 0.43	16.30 0.48	18.00 0.38
14.65 0.44	16.35 0.48	18.05 0.37
14.70 0.46	16.40 0.48	18.10 0.35
14.75 0.47	16.45 0.49	18.15 0.32
14.80 0.48	16.50 0.49	
14.85 0.48	16.55 0.49	
14.90 0.49	16.60 0.50	...End
14.95 0.50	16.65 0.50	
15.00 0.51	16.70 0.50	
15.05 0.52	16.75 0.51	
15.10 0.53	16.80 0.51	
15.15 0.54	16.85 0.50	
15.20 0.54	16.90 0.47	
15.25 0.55	16.95 0.43	
15.30 0.56	17.00 0.40	
15.35 0.57	17.05 0.38	
15.40 0.58	17.10 0.36	
15.45 0.59	17.15 0.35	
15.50 0.59	17.20 0.35	
15.55 0.60	17.25 0.36	
15.60 0.61 <<	17.30 0.36	
15.65 0.60	17.35 0.36	

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	16.12	3	63	49,416	---	----	-----	Onsite 1-1 hr.
2	SCS Runoff	19.08	3	72	94,700	---	----	-----	Onsite 1-2 hr.
3	SCS Runoff	18.66	3	84	123,656	---	----	-----	Onsite 1-3 hr.
4	SCS Runoff	16.05	3	111	189,253	---	----	-----	Onsite 1-6 hr.
5	SCS Runoff	16.87	3	336	263,456	---	----	-----	Onsite 1-12 hr.
6	SCS Runoff	15.63	3	939	344,700	---	----	-----	Onsite 1-24 hr.
7	SCS Runoff	2.06	3	33	4,836	---	----	-----	Onsite 2-1 hr.
8	SCS Runoff	2.17	3	45	9,268	---	----	-----	Onsite 2-2 hr.
9	SCS Runoff	1.99	3	57	12,102	---	----	-----	Onsite 2-3 hr.
10	SCS Runoff	1.70	3	93	18,522	---	----	-----	Onsite 2-6 hr.
11	SCS Runoff	1.78	3	324	25,785	---	----	-----	Onsite 2-12 hr.
12	SCS Runoff	1.60	3	936	33,736	---	----	-----	Onsite 2-24 hr.
15015 Pre 1-2.gpw					Return Period: 10 Year			Wednesday, Aug 12 2015, 11:07 AM	

Hydrograph Report

Hydraflow Hydrographs by Intellisolve

Wednesday, Aug 12 2015, 11:8 AM

Hyd. No. 2

Onsite 1-2 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 76.81 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.40 in
Storm duration = 2 hrs

Peak discharge = 19.08 cfs
Time interval = 3 min
Curve number = 68
Hydraulic length = 0 ft
Time of conc. (Tc) = 40.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 94,700 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.75	9.93
0.80	11.79
0.85	13.52
0.90	15.04
0.95	16.36
1.00	17.44
1.05	18.24
1.10	18.75
1.15	19.03
1.20	19.08 <<
1.25	18.86
1.30	18.37
1.35	17.73
1.40	16.98
1.45	16.28
1.50	15.65
1.55	15.13
1.60	14.69
1.65	14.35
1.70	14.08
1.75	13.82
1.80	13.53
1.85	13.21
1.90	12.88
1.95	12.61
2.00	12.39
2.05	12.01
2.10	11.45
2.15	10.83
2.20	10.16

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 11:8 AM

Hyd. No. 8

Onsite 2-2 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 7.40 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.40 in
Storm duration = 2 hrs

Peak discharge = 2.17 cfs
Time interval = 3 min
Curve number = 68
Hydraulic length = 0 ft
Time of conc. (Tc) = 13.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 9,268 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.50	1.15
0.55	1.54
0.60	1.87
0.65	2.06
0.70	2.17
0.75	2.17 <<
0.80	2.14
0.85	2.08
0.90	2.07
0.95	2.04
1.00	1.99
1.05	1.85
1.10	1.70
1.15	1.52
1.20	1.38
1.25	1.29
1.30	1.25
1.35	1.24
1.40	1.26
1.45	1.28
1.50	1.30
1.55	1.32
1.60	1.34
1.65	1.35
1.70	1.37
1.75	1.33
1.80	1.23

...End

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	48.23	3	51	155,264	---	----	-----	Onsite 1-1 hr.
2	SCS Runoff	52.09	3	63	246,955	---	----	-----	Onsite 1-2 hr.
3	SCS Runoff	48.95	3	72	307,746	---	----	-----	Onsite 1-3 hr.
4	SCS Runoff	38.04	3	105	420,535	---	----	-----	Onsite 1-6 hr.
5	SCS Runoff	35.67	3	333	547,352	---	----	-----	Onsite 1-12 hr.
6	SCS Runoff	30.91	3	939	719,325	---	----	-----	Onsite 1-24 hr.
7	SCS Runoff	6.76	3	27	15,196	---	----	-----	Onsite 2-1 hr.
8	SCS Runoff	6.24	3	36	24,170	---	----	-----	Onsite 2-2 hr.
9	SCS Runoff	5.48	3	48	30,119	---	----	-----	Onsite 2-3 hr.
10	SCS Runoff	3.94	3	90	41,158	---	----	-----	Onsite 2-6 hr.
11	SCS Runoff	3.69	3	324	53,570	---	----	-----	Onsite 2-12 hr.
12	SCS Runoff	3.11	3	936	70,401	---	----	-----	Onsite 2-24 hr.
15015 Pre 1-2.gpw					Return Period: 100 Year			Wednesday, Aug 12 2015, 11:07 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 11:8 AM

Hyd. No. 2

Onsite 1-2 hr.

Hydrograph type	=	SCS Runoff	Peak discharge	=	52.09 cfs
Storm frequency	=	100 yrs	Time interval	=	3 min
Drainage area	=	76.81 ac	Curve number	=	68
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	40.0 min
Total precip.	=	3.50 in	Distribution	=	Huff-1st
Storm duration	=	2 hrs	Shape factor	=	484

Hydrograph Volume = 246,955 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.65	28.88
0.70	34.05
0.75	38.73
0.80	42.75
0.85	46.09
0.90	48.64
0.95	50.52
1.00	51.67
1.05	52.09 <<
1.10	51.75
1.15	50.82
1.20	49.29
1.25	47.23
1.30	44.76
1.35	42.22
1.40	39.65
1.45	37.39
1.50	35.44
1.55	33.85
1.60	32.51
1.65	31.44
1.70	30.60
1.75	29.80
1.80	28.98
1.85	28.14
1.90	27.29
1.95	26.61

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 11:8 AM

Hyd. No. 7

Onsite 2-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Drainage area = 7.40 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.88 in
Storm duration = 1 hrs

Peak discharge = 6.76 cfs
Time interval = 3 min
Curve number = 68
Hydraulic length = 0 ft
Time of conc. (Tc) = 13.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 15,196 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.30	4.02
0.35	5.46
0.40	6.33
0.45	6.76 <<
0.50	6.69
0.55	6.22
0.60	5.50
0.65	4.80
0.70	4.31
0.75	4.02
0.80	3.87
0.85	3.87
0.90	3.78
0.95	3.51

...End

Post-Developed Drainage Conditions

Runoff curve number (CN) and Time of Concentration (TC) Calculations

Project: Deer Meadows

By: JPH

Date: 10/31/17

Circle one:

Present

Developed

Onsite Basin 1

Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, "B"	1/4 ac. Residential Districts	75	20.49	1536.8
CrA 'C'	1/4 ac. Residential Districts	83	18.20	1510.6
Br, CsB2, MnB2, MnC2, "B"	Pasture/Grassland/Open Space (Good Condition)	61	0.00	0.0
CrA 'C'	Pasture/Grassland/Open Space (Good Condition)	74	0.00	0.0
Br, CsB2, MnB2, MnC2, "B"	Woods (Good Condition)	58	0.00	0.0
CrA 'C'	Woods (Good Condition)	72	0.00	0.0
	Impervious Area	98	0.00	0.0
				0.0
Totals=			38.69	3047.35

CN (weighted) = $\frac{\text{Total Product}}{\text{Total Area}}$

CN (weighted) = $\frac{3047.4}{38.7}$

CN (weighted) = 78.8
US CN = 79

Time of Concentration

Sheet Flow	$T.C. = \frac{0.01}{2.64^{0.50}} \times \left(\frac{0.17}{0.01^{0.40}} \times 80 \right)^{0.80} =$						13 Minutes
Shallow Concentrated	Unpaved:	T.C. =	16.1	x	$0.01^{0.5} =$	1.61 ft/sec	3 Minutes
					=	276 feet	
	Paved:	T.C. =	20.3	x	$0.0018^{0.5} =$	0.86 ft/sec	0 Minutes
					=	0 feet	
Channel Flow						0.86 ft/sec	
	X-sec	1.77	Mann 'N'	0.013	2.52 ft/sec		8 Minutes
	Wet Per.	4.71		Flow Length	1210 feet	=	
	Hyd. R. =	0.38					
	Chan. Slope	0.0018					
Minimum T/C = 5 Minutes						T/c Total=	24 Minutes

Runoff curve number (CN) and Time of Concentration (TC) Calculations

Project: Deer Meadows

By: JPH

Date: 10/31/17

Circle one:

Present

☒ Developed

Onsite Basin 2

Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, "B"	1/4 ac. Residential Districts	75	7.43	557.3
CrA 'C'	1/4 ac. Residential Districts	83	6.82	566.1
Br, CsB2, MnB2, MnC2, "B"	Pasture/Grassland/Open Space (Good Condition)	61	0.00	0.0
CrA 'C'	Pasture/Grassland/Open Space (Good Condition)	74	0.00	0.0
Br, CsB2, MnB2, MnC2, "B"	Woods (Good Condition)	58	0.00	0.0
CrA 'C'	Woods (Good Condition)	72	0.00	0.0
	Impervious Area	98	0.00	0.0
				0.0
Totals=			14.25	1123.31

CN (weighted) = $\frac{\text{Total Product}}{\text{Total Area}}$

CN (weighted) = $\frac{1123.3}{14.3}$

CN (weighted) = **78.8**
US CN = **79**

Time of Concentration

Sheet Flow	T.C. = $\frac{0.01}{2.64^{0.50}} \times \left(\frac{0.17}{0.01^{0.40}} \times 80 \right)^{0.80} =$						13 Minutes
Shallow Concentrated	Unpaved:	T.C. =	16.1	x	0.01 ^{0.5}	=	1.61 ft/sec
						=	293 feet
Channel Flow	Paved:	T.C. =	20.3	x	0.0018 ^{0.5}	=	0.86 ft/sec
						=	0 feet
						=	0.86 ft/sec
	X-sec	1.77	Mann 'N'	0.013			2.52 ft/sec
	Wet Per.	4.71		Flow Length	722	feet	=
	Hyd. R. =	0.38					
	Chan. Slope	0.0018					
Minimum T/C =		5 Minutes		T/c Total=		21 Minutes	

Runoff curve number (CN) and Time of Concentration (TC) Calculations

Project: Deer Meadows

By: JPH

Date: 10/31/17

Circle one:

Present

☒ Developed

Onsite Basin 3

Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN I/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, 'B'	1/4 ac. Residential Districts	75	9.17	687.8
CrA 'C'	1/4 ac. Residential Districts	83	7.68	637.4
Br, CsB2, MnB2, MnC2, 'B'	Pasture/Grassland/Open Space (Good Condition)	61	0.00	0.0
CrA 'C'	Pasture/Grassland/Open Space (Good Condition)	74	0.00	0.0
Br, CsB2, MnB2, MnC2, 'B'	Woods (Good Condition)	58	0.00	0.0
CrA 'C'	Woods (Good Condition)	72	0.00	0.0
	Impervious Area	98	0.00	0.0
				0.0
		Totals=	16.85	1325.19

CN (weighted) = $\frac{\text{Total Product}}{\text{Total Area}}$

CN (weighted) = $\frac{1325.2}{16.9}$

CN (weighted) = 78.6
US CN = 79

Time of Concentration

Sheet Flow	$T.C.= \frac{0.01}{2.64^{0.50}} \times \left(\frac{0.17}{0.01^{0.40}} \times 80 \right)^{0.80} =$						13 Minutes	
	Unpaved:	$T.C.= 16.1 \times 0.01^{0.5} = 1.61 \text{ ft/sec}$ $= 180 \text{ feet} =$						2 Minutes
Paved:		$T.C.= 20.3 \times 0.0018^{0.5} = 0.86 \text{ ft/sec}$ $= 0 \text{ feet} =$ 0.86 ft/sec						
	Channel Flow	X-sec	1.77	Mann 'N'	0.013	2.52	ft/sec	5 Minutes
Wet Per.		4.71	Flow Length		820	feet		
Hyd. R. =		0.38						
Chan. Slope		0.0018						
Minimum T/C =		5 Minutes				T/c Total=	20 Minutes	

Runoff curve number (CN) and Time of Concentration (TC) Calculations

Project: Deer Meadows

By: JPH

Date: 10/31/17

 Circle one: Present ☒ Developed

Onsite Basin 5

Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/	Area (in acres)	Product of CN x area
Br, C&BZ, MnB2, MnC2 "B"	1/4 ac. Residential Districts	75	3.06	229.5
CrA 'C'	1/4 ac. Residential Districts	83	2.90	240.7
Br, C&BZ, MnB2, MnC2 "B"	Pasture/Grassland/Open Space (Good Condition)	61	0.00	0.0
CrA 'C'	Pasture/Grassland/Open Space (Good Condition)	74	0.00	0.0
Br, C&BZ, MnB2, MnC2 "B"	Woods (Good Condition)	58	0.00	0.0
CrA 'C'	Woods (Good Condition)	72	0.00	0.0
	Impervious Area	98	0.00	0.0
				0.0
Totals=			5.96	470.20

$$\text{CN (weighted)} = \frac{\text{Total Product}}{\text{Total Area}}$$

$$\text{CN (weighted)} = \frac{470.2}{6.0}$$

$$\begin{aligned} \text{CN (weighted)} &= 78.9 \\ \text{US CN} &= 79 \end{aligned}$$

Time of Concentration

Sheet Flow	$T.C. = \frac{0.01}{2.64^{0.50}} \times \left(\frac{0.17}{0.01^{0.40}} \times 80 \right)^{0.80} =$					13 Minutes
Shallow Concentrated	Unpaved:	$T.C. = 16.1 \times 0.01^{0.5} =$				1 Minutes
			1.61 ft/sec			
			115 feet			
	Paved:	$T.C. = 20.3 \times 0.0018^{0.5} =$				0 Minutes
Channel Flow			1.61 ft/sec			
			0.86 ft/sec			
			0 feet			
			0.86 ft/sec			
Channel Flow	X-sec	1.77	Mann 'N'	0.013	2.52 ft/sec	
	Wet Per.	4.71		Flow Length	485 feet	
	Hyd. R. =	0.38				3 Minutes
	Chan. Slope	0.0018				
Minimum T/C =		5 Minutes			T/c Total=	18 Minutes

Runoff curve number (CN) and Time of Concentration (TC) Calculations

Project: Deer Meadows

By: JPH

Date: 10/31/17

Circle one:

Present

Developed

Onsite Basin 4

Runoff curve number (CN)

Soil Name and Hydrologic Group	Cover Description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, "B"	1/4 ac. Residential Districts	75	3.32	249.0
CrA 'C'	1/4 ac. Residential Districts	83	2.80	232.4
Br, CsB2, MnB2, MnC2, "B"	Pasture/Grassland/Open Space (Good Condition)	61	0.00	0.0
CrA 'C'	Pasture/Grassland/Open Space (Good Condition)	74	0.00	0.0
Br, CsB2, MnB2, MnC2, "B"	Woods (Good Condition)	58	0.00	0.0
CrA 'C'	Woods (Good Condition)	72	0.00	0.0
	Impervious Area	98	0.00	0.0
				0.0
Totals=			6.12	481.40

CN (weighted) = $\frac{\text{Total Product}}{\text{Total Area}}$
 CN (weighted) = $\frac{481.4}{6.1}$
 US CN = 78.7
 US CN = 79

Time of Concentration

Sheet Flow	$T.C.= \frac{0.01}{2.64^{0.50}} \times \left(\frac{0.17}{0.01^{0.40}} \times 80 \right)^{0.80} =$							13 Minutes	
	Unpaved:	T.C.=	16.1	x	$0.013^{0.5}$	=	$\frac{1.84 \text{ ft/sec}}{423 \text{ feet}}$	=	4 Minutes
Shallow Concentrated	Paved:	T.C.=	20.3	x	$0.0018^{0.5}$	=	$\frac{0.86 \text{ ft/sec}}{0 \text{ feet}}$	=	0 Minutes
							$\frac{0.86 \text{ ft/sec}}$		
Channel Flow	X-sec	1.77	Mann 'N'	0.013		2.52	ft/sec		
	Wet Per.	4.71			Flow Length	0	feet	=	0 Minutes
	Hyd. R. =	0.38							
	Chan. Slope	0.0018							
	Minimum T/C =		5 Minutes			T/c Total=		17 Minutes	

Wednesday, Aug 12 2015, 1:27 PM

- Pond 1

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	743.55	64,169	0	0
1.45	745.00	72,275	98,922	98,922
2.45	746.00	77,934	75,105	174,026
3.45	747.00	83,650	80,792	254,818
4.45	748.00	89,423	86,536	341,355
4.95	748.50	92,330	45,438	386,793

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise (in)	= 21.00	0.00	0.00	0.00
Span (in)	= 21.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 743.55	0.00	0.00	0.00
Length (ft)	= 18.00	0.00	0.00	0.00
Slope (%)	= 0.18	0.00	0.00	0.00
N-Value	= .013	.000	.000	.000
Orif. Coeff.	= 0.60	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	0.00	0.00	0.00
Weir Type	= weir	weir	—	—
Multi-Stage	= No	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

[illegible]

Pond 1

Top of pond
Elev. 748.50

Stage

5.00
4.00
3.00
2.00
1.00
0.00

CulvA - 18.0 LF of 21.0 in @ 0.18%

Section MTS

Side slope estimated average from contours

Schematic only. Not for construction.

Pond Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:27 PM

- Pond 2

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	747.95	47,078	0	0
1.05	749.00	52,884	52,480	52,480
2.05	750.00	59,607	56,246	108,726
3.05	751.00	67,959	63,783	172,509
4.05	752.00	72,502	70,231	242,739

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise (in)	= 15.00	5.00	0.00	0.00
Span (in)	= 15.00	5.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 747.95	747.95	0.00	0.00
Length (ft)	= 15.00	0.50	0.00	0.00
Slope (%)	= 0.23	0.50	0.00	0.00
N-Value	= .013	.013	.000	.000
Orif. Coeff.	= 0.60	0.60	0.00	0.00
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.70	0.00	0.00	0.00
Crest El. (ft)	= 749.80	0.00	0.00	0.00
Weir Coeff.	= 3.33	0.00	0.00	0.00
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0	747.95	0.00	0.00	---	---	0.00	---	---	---	---	0.00
1.05	52,480	749.00	0.49	0.49	---	---	0.00	---	---	---	---	0.49
2.05	108,726	750.00	3.97	0.48	---	---	3.49	---	---	---	---	3.97
3.05	172,509	751.00	9.18	0.06	---	---	9.09	---	---	---	---	9.15
4.05	242,739	752.00	10.93	0.03	---	---	10.81	---	---	---	---	10.85

Pond 2

Stage



Top of pond
Elev. 752.00

11.70 ft Riser
Weir A - Elev. 743.80

5.0 in orifice
Culv B - Inv. 747.95

Culv A - 15.0 LF of 15.0 in @ 0.23%

Section

NTS

* Side slope estimated average from contours

Schematic only. Not for construction.

Pond Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:28 PM

- Pond 3

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	749.00	42,292	0	0
1.00	750.00	49,296	45,794	45,794
2.00	751.00	52,356	50,826	96,620
3.00	752.00	55,473	53,915	150,535
4.00	753.00	58,646	57,060	207,594
5.00	754.00	61,876	60,261	267,855

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise (in)	= 12.00	5.00	0.00	0.00
Span (in)	= 12.00	5.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 749.00	749.00	0.00	0.00
Length (ft)	= 18.00	0.50	0.00	0.00
Slope (%)	= 0.30	0.50	0.00	0.00
N-Value	= .013	.013	.000	.000
Orif. Coeff.	= 0.60	0.60	0.00	0.00
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.70	0.00	0.00	0.00
Crest El. (ft)	= 750.70	0.00	0.00	0.00
Weir Coeff.	= 3.33	0.00	0.00	0.00
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

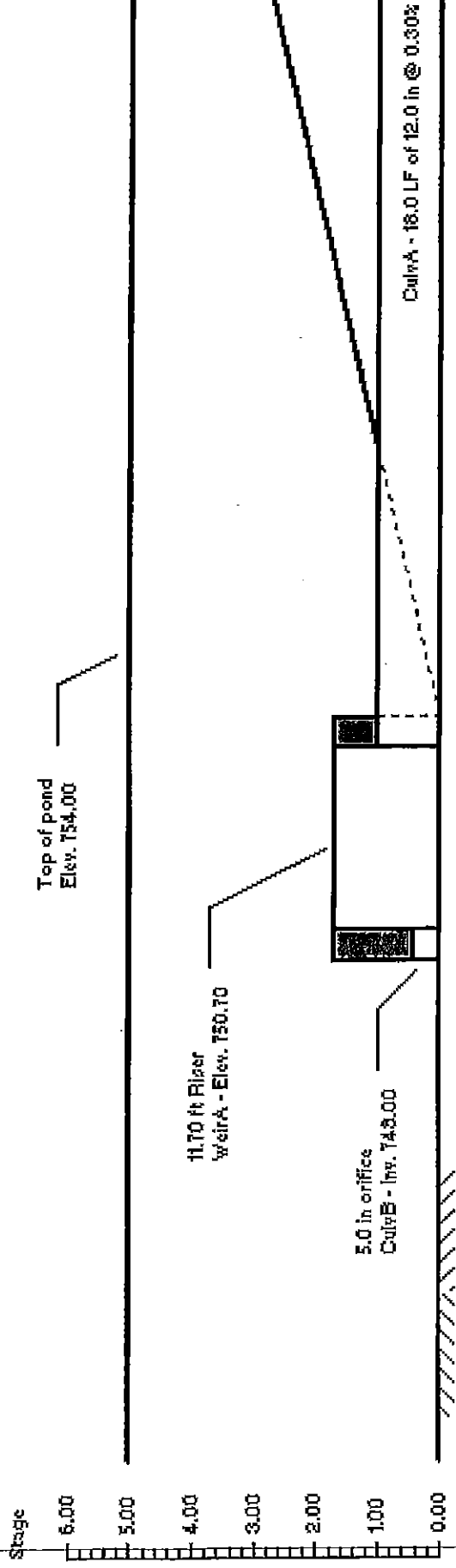
Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0	749.00	0.00	0.00	---	---	0.00	---	---	---	---	0.00
1.00	45,794	750.00	0.48	0.48	---	---	0.00	---	---	---	---	0.48
2.00	96,620	751.00	4.36	0.17	---	---	4.18	---	---	---	---	4.36
3.00	150,535	752.00	5.98	0.03	---	---	5.87	---	---	---	---	5.91
4.00	207,594	753.00	7.07	0.02	---	---	6.96	---	---	---	---	6.98
5.00	267,855	754.00	8.02	0.01	---	---	7.07	---	---	---	---	7.08

Pond 3



Section NTS

Schematic only. Not for construction.

Pond Report

Hydraflow Hydrographs by Intellisolve

Wednesday, Aug 12 2015, 1:20 PM

- Pond 4

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	750.00	35,213	0	0
1.00	751.00	37,847	36,530	36,530
2.00	752.00	40,537	39,192	75,722
3.00	753.00	43,284	41,911	117,633
4.00	754.00	46,087	44,686	162,318
5.00	755.00	48,947	47,517	209,835

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise (in)	= 12.00	5.00	0.00	0.00
Span (in)	= 12.00	5.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 750.00	750.00	0.00	0.00
Length (ft)	= 33.00	56.00	0.00	0.00
Slope (%)	= 0.30	0.80	0.00	0.00
N-Value	= .013	.013	.000	.000
Orif. Coeff.	= 0.60	0.60	0.00	0.00
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 11.70	0.00	0.00	0.00
Crest El. (ft)	= 751.30	0.00	0.00	0.00
Weir Coeff.	= 3.33	0.00	0.00	0.00
Weir Type	= Riser	---	---	---
Multi-Stage	= Yes	No	No	No

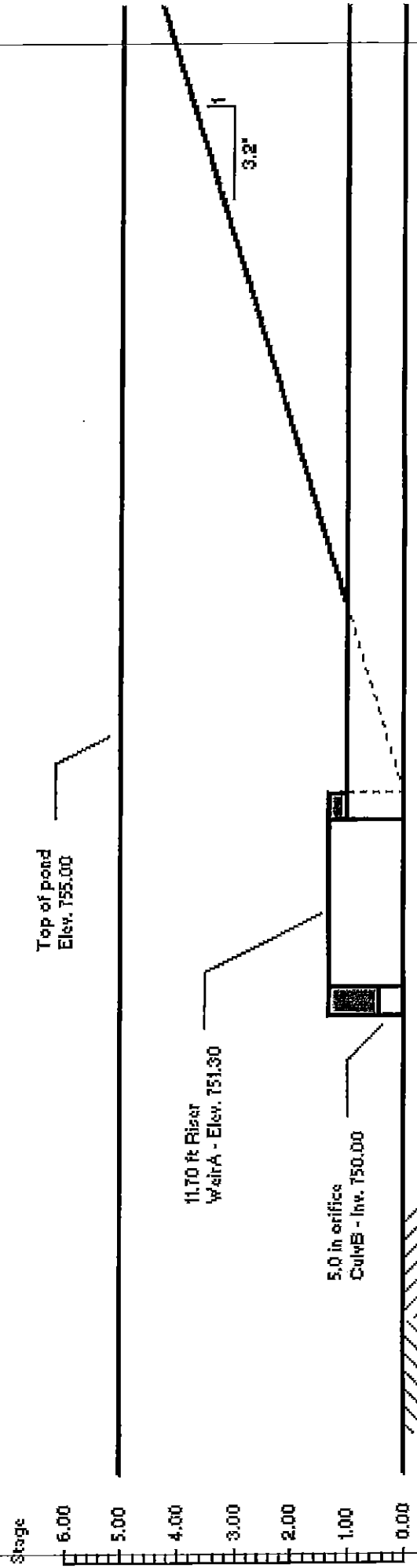
Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	Civ D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Total cfs
0.00	0	750.00	0.00	0.00	---	---	0.00	---	---	---	---	0.00
1.00	36,530	751.00	0.50	0.50	---	---	0.00	---	---	---	---	0.50
2.00	75,722	752.00	4.15	0.05	---	---	4.09	---	---	---	---	4.14
3.00	117,633	753.00	5.75	0.02	---	---	5.63	---	---	---	---	5.65
4.00	162,318	754.00	6.98	0.01	---	---	6.85	---	---	---	---	6.86
5.00	209,835	755.00	8.02	0.01	---	---	6.68	---	---	---	---	6.69

Pond 4



Section NTS

* Side slope estimated average from contours

Schematic only. Not for construction.

1 - Pond 5

Pond Data

Pond storage is based on known contour areas. Average end area method used.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	750.00	49,119	0	0
1.00	751.00	51,998	50,559	50,559
2.00	752.00	54,934	53,466	104,025
3.00	753.00	57,926	56,430	160,455
3.50	753.50	59,443	29,342	189,797

Culvert / Orifice Structures

	[A]	[B]	[C]	[D]
Rise (in)	= 12.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 750.00	0.00	0.00	0.00
Length (ft)	= 20.00	0.00	0.00	0.00
Slope (%)	= 0.30	0.00	0.00	0.00
N-Value	= .013	.013	.000	.000
Orif. Coeff.	= 0.60	0.60	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

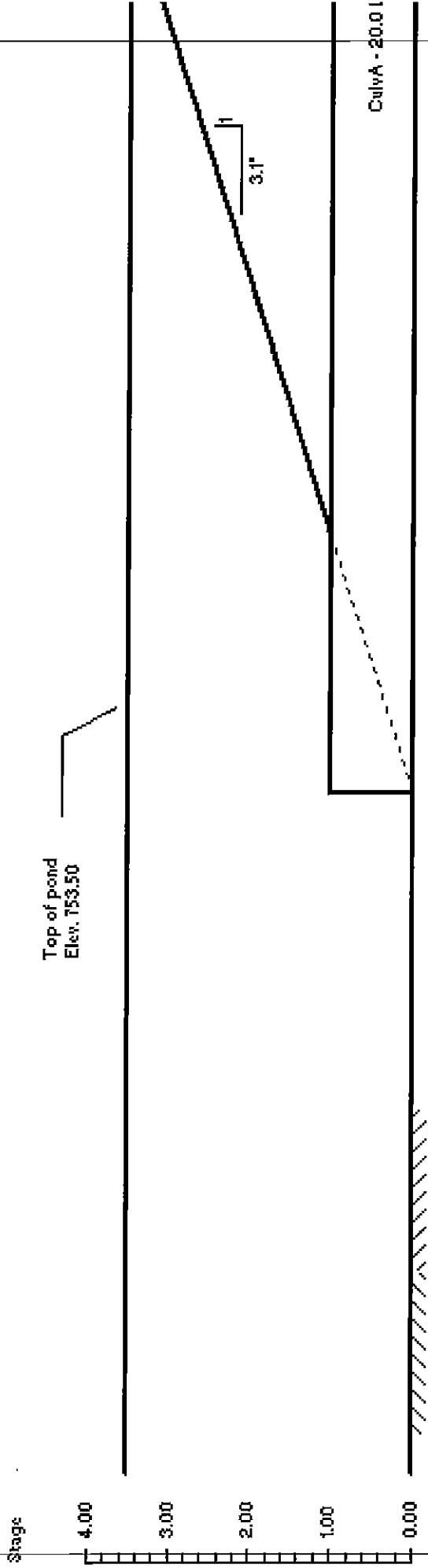
Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.

Stage / Storage / Discharge Table

[illegible]

Pond 5



Section NTS

* Side slope estimated average from contours

Schematic only. Not for construction.

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Manual	0.02	3	87	3,265	----	----	----	Thru Pond 5 - 1 hr.
2	Manual	0.05	3	144	5,800	----	----	----	Thru Pond 5 - 2 hr.
3	Manual	0.08	3	204	7,518	----	----	----	Thru Pond 5 - 3 hr.
4	Manual	0.12	3	378	11,126	----	----	----	Thru Pond 5 - 6 hr.
5	Manual	0.20	3	732	16,844	----	----	----	Thru Pond 5 - 12 hr.
6	Manual	0.22	3	1449	20,306	----	----	----	Thru Pond 5 - 24 hr.
7	Manual	0.04	3	93	7,422	----	----	----	Thru Pond 3 - 1 hr.
8	Manual	0.10	3	150	13,608	----	----	----	Thru Pond 3 - 2 hr.
9	Manual	0.19	3	210	21,367	----	----	----	Thru Pond 3 - 3 hr.
10	Manual	0.24	3	384	27,352	----	----	----	Thru Pond 3 - 6 hr.
11	Manual	0.33	3	738	42,201	----	----	----	Thru Pond 3 - 12 hr.
12	Manual	0.36	3	1455	51,058	----	----	----	Thru Pond 3 - 24 hr.
13	SCS Runoff	2.84	3	39	7,707	----	----	----	Onsite 2-1 hr.
14	SCS Runoff	3.10	3	54	13,493	----	----	----	Onsite 2-2 hr.
15	SCS Runoff	2.87	3	63	17,462	----	----	----	Onsite 2-3 hr.
16	SCS Runoff	2.34	3	96	25,761	----	----	----	Onsite 2-6 hr.
17	SCS Runoff	2.61	3	327	38,893	----	----	----	Onsite 2-12 hr.
18	SCS Runoff	2.14	3	936	47,033	----	----	----	Onsite 2-24 hr.
19	Combine	2.86	3	42	18,394	1, 7, 13,	----	----	Total to Pond 2 - 1 hr.
20	Combine	3.12	3	54	32,901	2, 8, 14,	----	----	Total to Pond 2 - 2 hr.
21	Combine	2.90	3	63	46,347	3, 9, 15,	----	----	Total to Pond 2 - 3 hr.
22	Combine	2.37	3	99	64,240	4, 10, 16,	----	----	Total to Pond 2 - 6 hr.
23	Combine	2.72	3	330	97,938	5, 11, 17,	----	----	Total to Pond 2 - 12 hr.
24	Combine	2.42	3	939	118,397	6, 12, 18,	----	----	Total to Pond 2 - 24 hr.
25	Reservoir	0.05	3	741	15,892	19	748.11	8,162	Thru Pond 2 - 1 hr.
26	Reservoir	0.13	3	519	30,200	20	748.24	14,273	Thru Pond 2 - 2 hr.
27	Reservoir	0.21	3	654	43,702	21	748.34	19,466	Thru Pond 2 - 3 hr.
28	Reservoir	0.30	3	744	62,296	22	748.52	28,555	Thru Pond 2 - 6 hr.
29	Reservoir	0.44	3	1128	96,967	23	748.85	45,032	Thru Pond 2 - 12 hr.
30	Reservoir	0.51	3	1782	117,439	24	749.05	55,140	Thru Pond 2 - 24 hr.
15015 Post 1-2.gpw					Return Period: 2 Year			Thursday, Nov 16 2017, 9:30 AM	

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
31	SCS Runoff	7.71	3	39	20,925	---	----	----	Onsite 1-1 hr.
32	SCS Runoff	8.41	3	54	36,635	---	----	----	Onsite 1-2 hr.
33	SCS Runoff	7.80	3	63	47,412	---	----	----	Onsite 1-3 hr.
34	SCS Runoff	6.34	3	96	69,944	---	----	----	Onsite 1-6 hr.
35	SCS Runoff	7.09	3	327	105,598	---	----	----	Onsite 1-12 hr.
36	SCS Runoff	5.81	3	936	127,700	---	----	----	Onsite 1-24 hr.
37	Combine	7.72	3	39	36,817	25, 31,	----	----	Total to Pond1 - 1 hr.
38	Combine	8.42	3	54	66,835	26, 32,	----	----	Total to Pond1 - 2 hr.
39	Combine	7.81	3	63	91,113	27, 33,	----	----	Total to Pond1 - 3 hr.
40	Combine	6.37	3	99	132,240	28, 34,	----	----	Total to Pond1 - 6 hr.
41	Combine	7.17	3	327	202,565	29, 35,	----	----	Total to Pond1 - 12 hr.
42	Combine	6.03	3	936	245,138	30, 36,	----	----	Total to Pond1 - 24 hr.
43	Reservoir	0.26	3	93	33,768	37	743.85	20,414	Thru Pond 1 - 1 hr.
44	Reservoir	0.60	3	147	62,640	38	744.06	34,696	Thru Pond 1 - 2 hr.
45	Reservoir	0.84	3	204	86,154	39	744.19	43,543	Thru Pond 1 - 3 hr.
46	Reservoir	1.27	3	381	126,484	40	744.40	58,175	Thru Pond 1 - 6 hr.
47	Reservoir	1.79	3	732	195,121	41	744.67	76,486	Thru Pond 1 - 12 hr.
48	Reservoir	1.92	3	1311	235,897	42	744.74	80,935	Thru Pond 1 - 1 hr.
15015 Post 1-2.gpw					Return Period: 2 Year			Thursday, Nov 16 2017, 9:30 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:53 AM

Hyd. No. 14

Onsite 2-2 hr.

Hydrograph type = SCS Runoff
Storm frequency = 2 yrs
Drainage area = 14.25 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 1.52 in
Storm duration = 2 hrs

Peak discharge = 3.10 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 21.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 13,493 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.60	1.91
0.65	2.30
0.70	2.63
0.75	2.85
0.80	3.01
0.85	3.08
0.90	3.10 <<
0.95	3.05
1.00	2.98
1.05	2.87
1.10	2.73
1.15	2.55
1.20	2.38
1.25	2.20
1.30	2.06
1.35	1.95
1.40	1.86
1.45	1.80
1.50	1.76
1.55	1.75
1.60	1.76
1.65	1.78
1.70	1.80
1.75	1.80
1.80	1.76
1.85	1.69
1.90	1.59

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:53 AM

Hyd. No. 18

Onsite 2-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 2 yrs
Drainage area = 14.25 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.64 in
Storm duration = 24 hrs

Peak discharge = 2.14 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 21.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 47,033 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.50 1.12	15.20 2.03	16.90 1.60
13.55 1.20	15.25 2.04	16.95 1.55
13.60 1.26	15.30 2.06	17.00 1.49
13.65 1.32	15.35 2.07	17.05 1.41
13.70 1.37	15.40 2.08	17.10 1.34
13.75 1.41	15.45 2.10	17.15 1.28
13.80 1.44	15.50 2.11	17.20 1.22
13.85 1.45	15.55 2.13	17.25 1.18
13.90 1.47	15.60 2.14 <<	17.30 1.15
13.95 1.49	15.65 2.13	17.35 1.14
14.00 1.51	15.70 2.10	17.40 1.13
14.05 1.52	15.75 2.05	17.45 1.13
14.10 1.54	15.80 1.98	17.50 1.13
14.15 1.56	15.85 1.89	17.55 1.13
14.20 1.57	15.90 1.81	17.60 1.14
14.25 1.59	15.95 1.74	17.65 1.14
14.30 1.60	16.00 1.68	17.70 1.14
14.35 1.62	16.05 1.63	17.75 1.14
14.40 1.63	16.10 1.60	17.80 1.15
14.45 1.65	16.15 1.58	17.85 1.15
14.50 1.68	16.20 1.57	17.90 1.15
14.55 1.71	16.25 1.58	17.95 1.15
14.60 1.74	16.30 1.58	18.00 1.15
14.65 1.78	16.35 1.59	18.05 1.14
14.70 1.81	16.40 1.60	18.10 1.12
14.75 1.84	16.45 1.60	18.15 1.09
14.80 1.87	16.50 1.61	
14.85 1.90	16.55 1.61	
14.90 1.93	16.60 1.62	...End
14.95 1.95	16.65 1.62	
15.00 1.96	16.70 1.63	
15.05 1.98	16.75 1.63	
15.10 2.00	16.80 1.64	
15.15 2.01	16.85 1.63	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:30 AM

Hyd. No. 20

Total to Pond 2 - 2 hr.

Hydrograph type = Combine
Storm frequency = 2 yrs
Inflow hyds. = 2, 8, 14

Peak discharge = 3.12 cfs
Time interval = 3 min

Hydrograph Volume = 32,901 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 2 + (cfs)	Hyd. 8 + (cfs)	Hyd. 14 + (cfs)	Outflow (cfs)
0.70	0.01	0.01	2.63	2.64
0.75	0.01	0.01	2.85	2.87
0.80	0.01	0.01	3.01	3.03
0.85	0.01	0.01	3.08	3.10
0.90	0.01	0.01	3.10 <<	3.12 <<
0.95	0.01	0.02	3.05	3.08
1.00	0.02	0.02	2.98	3.01
1.05	0.02	0.02	2.87	2.91
1.10	0.02	0.02	2.73	2.77
1.15	0.02	0.03	2.55	2.60
1.20	0.02	0.03	2.38	2.43

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 24

Total to Pond 2 - 24 hr.

Hydrograph type = Combine
Storm frequency = 2 yrs
Inflow hyds. = 6, 12, 18

Peak discharge = 2.47 cfs
Time interval = 3 min

Hydrograph Volume = 124,288 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 6 + (cfs)	Hyd. 12 + (cfs)	Hyd. 18 + (cfs)	Outflow (cfs)
14.55	0.07	0.09	1.71	1.86
14.60	0.07	0.09	1.74	1.90
14.65	0.07	0.10	1.78	1.95
14.70	0.08	0.10	1.81	1.99
14.75	0.08	0.10	1.84	2.03
14.80	0.08	0.11	1.87	2.07
14.85	0.09	0.11	1.90	2.10
14.90	0.09	0.12	1.93	2.13
14.95	0.09	0.12	1.95	2.16
15.00	0.10	0.13	1.96	2.19
15.05	0.10	0.13	1.98	2.21
15.10	0.10	0.13	2.00	2.23
15.15	0.11	0.14	2.01	2.26
15.20	0.11	0.14	2.03	2.28
15.25	0.11	0.15	2.04	2.30
15.30	0.12	0.15	2.06	2.32
15.35	0.12	0.16	2.07	2.35
15.40	0.12	0.16	2.08	2.37
15.45	0.13	0.17	2.10	2.39
15.50	0.13	0.17	2.11	2.42
15.55	0.14	0.18	2.13	2.44
15.60	0.14	0.18	2.14 <<	2.46
15.65	0.15	0.19	2.13	2.47 <<
15.70	0.15	0.19	2.10	2.45
15.75	0.15	0.20	2.05	2.41
15.80	0.16	0.20	1.98	2.34
15.85	0.16	0.21	1.89	2.26
15.90	0.17	0.21	1.81	2.18
15.95	0.17	0.22	1.74	2.12
16.00	0.17	0.22	1.68	2.07
16.05	0.18	0.22	1.63	2.03
16.10	0.18	0.22	1.60	2.00
16.15	0.18	0.23	1.58	1.99
16.20	0.18	0.23	1.57	1.99
16.25	0.19	0.23	1.58	2.00
16.30	0.19	0.23	1.58	2.01
16.35	0.19	0.24	1.59	2.02
16.40	0.20	0.24	1.60	2.03

Continues on next page...

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:30 AM

Hyd. No. 30

Thru Pond 2 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 24
Max. Elevation = 748.99 ft

Peak discharge = 0.49 cfs
Time interval = 3 min
Reservoir name = Pond 2
Max. Storage = 51,908 cuft

Storage Indication method used.

Outflow hydrograph volume = 111,666 cuft

(Printed values >= 75% of Qp)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
28.00	0.49	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.05	0.49	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.10	0.49	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.15	0.49	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49
28.20	0.49	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49
28.25	0.49	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49
28.30	0.49	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49
28.35	0.49	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49 <<
28.40	0.48	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49
28.45	0.48	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49
28.50	0.48	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49
28.55	0.48	748.99 <<	0.49	0.49	----	----	----	----	----	----	----	0.49
28.60	0.48	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.65	0.48	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.70	0.48	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.75	0.48	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.80	0.48	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.85	0.48	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.90	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
28.95	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.00	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.05	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.10	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.15	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.20	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.25	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.30	0.47	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.35	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.40	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.45	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.50	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.55	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.60	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.65	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.70	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.75	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.80	0.46	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.85	0.45	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.90	0.45	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49
29.95	0.45	748.99	0.49	0.49	----	----	----	----	----	----	----	0.49

Continued on next page.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 32

Onsite 1-2 hr.

Hydrograph type = SCS Runoff
Storm frequency = 2 yrs
Drainage area = 38.69 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 1.52 in
Storm duration = 2 hrs

Peak discharge = 8.41 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 24.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 36,635 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.60	5.19
0.65	6.24
0.70	7.13
0.75	7.74
0.80	8.16
0.85	8.36
0.90	8.41 <<
0.95	8.27
1.00	8.08
1.05	7.79
1.10	7.40
1.15	6.94
1.20	6.46
1.25	5.98
1.30	5.59
1.35	5.29
1.40	5.05
1.45	4.88
1.50	4.78
1.55	4.76
1.60	4.78
1.65	4.84
1.70	4.90
1.75	4.88
1.80	4.77
1.85	4.58
1.90	4.30

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 36

Onsite 1-24 hr.

Hydrograph type = SCS Runoff
 Storm frequency = 2 yrs
 Drainage area = 38.69 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 2.64 in
 Storm duration = 24 hrs

Peak discharge = 5.81 cfs
 Time interval = 3 min
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 24.0 min
 Distribution = Huff-3rd
 Shape factor = 484

Hydrograph Volume = 127,700 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.50 3.03	15.20 5.50	16.90 4.34
13.55 3.25	15.25 5.54	16.95 4.22
13.60 3.43	15.30 5.58	17.00 4.04
13.65 3.59	15.35 5.62	17.05 3.82
13.70 3.72	15.40 5.66	17.10 3.63
13.75 3.83	15.45 5.70	17.15 3.46
13.80 3.90	15.50 5.74	17.20 3.32
13.85 3.95	15.55 5.78	17.25 3.22
13.90 4.00	15.60 5.81 <<	17.30 3.14
13.95 4.04	15.65 5.79	17.35 3.08
14.00 4.09	15.70 5.71	17.40 3.06
14.05 4.13	15.75 5.58	17.45 3.07
14.10 4.18	15.80 5.38	17.50 3.07
14.15 4.22	15.85 5.12	17.55 3.08
14.20 4.27	15.90 4.90	17.60 3.09
14.25 4.31	15.95 4.71	17.65 3.09
14.30 4.35	16.00 4.55	17.70 3.10
14.35 4.40	16.05 4.43	17.75 3.10
14.40 4.44	16.10 4.34	17.80 3.11
14.45 4.49	16.15 4.29	17.85 3.11
14.50 4.56	16.20 4.27	17.90 3.12
14.55 4.63	16.25 4.28	17.95 3.13
14.60 4.72	16.30 4.30	18.00 3.13
14.65 4.82	16.35 4.32	18.05 3.11
14.70 4.92	16.40 4.33	18.10 3.05
14.75 5.01	16.45 4.35	18.15 2.95
14.80 5.09	16.50 4.36	
14.85 5.16	16.55 4.38	
14.90 5.23	16.60 4.39	...End
14.95 5.28	16.65 4.41	
15.00 5.33	16.70 4.42	
15.05 5.38	16.75 4.44	
15.10 5.42	16.80 4.45	
15.15 5.46	16.85 4.42	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:33 AM

Hyd. No. 38

Total to Pond1 - 2 hr.

Hydrograph type = Combine
Storm frequency = 2 yrs
Inflow hyds. = 26, 32

Peak discharge = 8.42 cfs
Time interval = 3 min

Hydrograph Volume = 65,259 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 26 + (cfs)	Hyd. 32 + (cfs)	Outflow (cfs)
0.70	0.01	7.13	7.14
0.75	0.01	7.74	7.75
0.80	0.01	8.16	8.17
0.85	0.01	8.36	8.38
0.90	0.02	8.41 <<	8.42 <<
0.95	0.02	8.27	8.29
1.00	0.02	8.08	8.10
1.05	0.02	7.79	7.81
1.10	0.03	7.40	7.43
1.15	0.03	6.94	6.97
1.20	0.04	6.46	6.50

...End

Hydrograph Report

Hydraflow Hydrographs by Intellisolve

Thursday, Nov 16 2017, 9:33 AM

Hyd. No. 42

Total to Pond1 - 24 hr.

Hydrograph type = Combine
Storm frequency = 2 yrs
Inflow hyds. = 30, 36

Peak discharge = 6.03 cfs
Time interval = 3 min

Hydrograph Volume = 239,366 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
14.40	0.09	4.44	4.53
14.45	0.10	4.49	4.59
14.50	0.10	4.56	4.66
14.55	0.11	4.63	4.74
14.60	0.11	4.72	4.83
14.65	0.12	4.82	4.94
14.70	0.12	4.92	5.04
14.75	0.13	5.01	5.13
14.80	0.13	5.09	5.22
14.85	0.14	5.16	5.30
14.90	0.14	5.23	5.37
14.95	0.15	5.28	5.43
15.00	0.15	5.33	5.49
15.05	0.16	5.38	5.53
15.10	0.16	5.42	5.58
15.15	0.17	5.46	5.63
15.20	0.17	5.50	5.67
15.25	0.18	5.54	5.72
15.30	0.18	5.58	5.76
15.35	0.19	5.62	5.81
15.40	0.19	5.66	5.85
15.45	0.20	5.70	5.90
15.50	0.21	5.74	5.94
15.55	0.21	5.78	5.99
15.60	0.22	5.81 <<	6.03 <<
15.65	0.22	5.79	6.01
15.70	0.23	5.71	5.94
15.75	0.23	5.58	5.81
15.80	0.24	5.38	5.62
15.85	0.24	5.12	5.36
15.90	0.24	4.90	5.14
15.95	0.25	4.71	4.96
16.00	0.25	4.55	4.80
16.05	0.25	4.43	4.68
16.10	0.26	4.34	4.60
16.15	0.26	4.29	4.55
16.20	0.26	4.27	4.53
16.25	0.26	4.28	4.55

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Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:34 AM

Hyd. No. 48

Thru Pond 1 - 1 hr.

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 42
Max. Elevation = 744.73 ft

Peak discharge = 1.91 cfs
Time interval = 3 min
Reservoir name = Pond 1
Max. Storage = 80,790 cuft

Storage Indication method used.

Outflow hydrograph volume = 230,316 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
21.15	2.09	744.73	1.90	----	----	----	----	----	----	----	----	1.90
21.20	2.10	744.73	1.90	----	----	----	----	----	----	----	----	1.90
21.25	2.10	744.73	1.90	----	----	----	----	----	----	----	----	1.90
21.30	2.10	744.73	1.90	----	----	----	----	----	----	----	----	1.90
21.35	2.10	744.73	1.90	----	----	----	----	----	----	----	----	1.90
21.40	2.11	744.73	1.90	----	----	----	----	----	----	----	----	1.91
21.45	2.11	744.73	1.91	----	----	----	----	----	----	----	----	1.91
21.50	2.11	744.73	1.91	----	----	----	----	----	----	----	----	1.91
21.55	2.11	744.73	1.91	----	----	----	----	----	----	----	----	1.91
21.60	2.11	744.73	1.91	----	----	----	----	----	----	----	----	1.91
21.65	2.10	744.73	1.91	----	----	----	----	----	----	----	----	1.91
21.70	2.07	744.73	1.91	----	----	----	----	----	----	----	----	1.91
21.75	2.02	744.73	1.91	----	----	----	----	----	----	----	----	1.91
21.80	1.95	744.73 <<	1.91	----	----	----	----	----	----	----	----	1.91 <<
21.85	1.86	744.73 <<	1.91	----	----	----	----	----	----	----	----	1.91
21.90	1.79	744.73	1.91	----	----	----	----	----	----	----	----	1.91
21.95	1.73	744.73	1.91	----	----	----	----	----	----	----	----	1.91
22.00	1.68	744.73	1.91	----	----	----	----	----	----	----	----	1.91
22.05	1.63	744.73	1.91	----	----	----	----	----	----	----	----	1.91
22.10	1.60	744.73	1.91	----	----	----	----	----	----	----	----	1.91
22.15	1.58	744.73	1.91	----	----	----	----	----	----	----	----	1.91
22.20	1.57	744.73	1.90	----	----	----	----	----	----	----	----	1.90
22.25	1.57	744.73	1.90	----	----	----	----	----	----	----	----	1.90
22.30	1.57	744.73	1.90	----	----	----	----	----	----	----	----	1.90
22.35	1.58	744.73	1.90	----	----	----	----	----	----	----	----	1.90
22.40	1.58	744.73	1.90	----	----	----	----	----	----	----	----	1.90
22.45	1.58	744.73	1.90	----	----	----	----	----	----	----	----	1.90
22.50	1.58	744.72	1.89	----	----	----	----	----	----	----	----	1.89
22.55	1.58	744.72	1.89	----	----	----	----	----	----	----	----	1.89
22.60	1.58	744.72	1.89	----	----	----	----	----	----	----	----	1.89
22.65	1.58	744.72	1.89	----	----	----	----	----	----	----	----	1.89
22.70	1.58	744.72	1.89	----	----	----	----	----	----	----	----	1.89
22.75	1.59	744.72	1.89	----	----	----	----	----	----	----	----	1.89
22.80	1.59	744.72	1.89	----	----	----	----	----	----	----	----	1.89
22.85	1.61	744.72	1.88	----	----	----	----	----	----	----	----	1.88
22.90	1.64	744.72	1.88	----	----	----	----	----	----	----	----	1.88
22.95	1.70	744.72	1.88	----	----	----	----	----	----	----	----	1.88
23.00	1.77	744.72	1.88	----	----	----	----	----	----	----	----	1.88
23.05	1.86	744.72	1.88	----	----	----	----	----	----	----	----	1.88

Continues on next page...

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	1.34	3	36	3,409	---	-----	-----	Onsite 5-1 hr.
2	SCS Runoff	1.39	3	48	5,969	---	-----	-----	Onsite 5-2 hr.
3	SCS Runoff	1.29	3	60	7,725	---	-----	-----	Onsite 5-3 hr.
4	SCS Runoff	1.05	3	96	11,396	---	-----	-----	Onsite 5-6 hr.
5	SCS Runoff	1.17	3	327	17,205	---	-----	-----	Onsite 5-12 hr.
6	SCS Runoff	0.95	3	936	20,806	---	-----	-----	Onsite 5-24 hr.
7	Reservoir	0.02	3	87	3,265	1	750.07	3,349	Thru Pond 5 - 1 hr.
8	Reservoir	0.05	3	144	5,800	2	750.11	5,778	Thru Pond 5 - 2 hr.
9	Reservoir	0.08	3	204	7,518	3	750.14	7,321	Thru Pond 5 - 3 hr.
10	Reservoir	0.12	3	378	11,126	4	750.20	10,026	Thru Pond 5 - 6 hr.
11	Reservoir	0.20	3	732	16,844	5	750.26	13,368	Thru Pond 5 - 12 hr.
12	Reservoir	0.22	3	1449	20,306	6	750.28	14,232	Thru Pond 5 - 24 hr.
13	SCS Runoff	3.36	3	39	9,113	---	-----	-----	Onsite 3-1 hr.
14	SCS Runoff	3.66	3	54	15,955	---	-----	-----	Onsite 3-2 hr.
15	SCS Runoff	3.98	3	63	24,178	---	-----	-----	Onsite 3-3 hr.
16	SCS Runoff	2.76	3	96	30,462	---	-----	-----	Onsite 3-6 hr.
17	SCS Runoff	3.09	3	327	45,989	---	-----	-----	Onsite 3-12 hr.
18	SCS Runoff	2.53	3	936	55,615	---	-----	-----	Onsite 3-24 hr.
19	Reservoir	0.04	3	93	7,422	13	749.14	9,014	Thru Pond 3 - 1 hr.
20	Reservoir	0.10	3	150	13,608	14	749.24	15,556	Thru Pond 3 - 2 hr.
21	Reservoir	0.19	3	210	21,367	15	749.36	23,110	Thru Pond 3 - 3 hr.
22	Reservoir	0.24	3	384	27,352	16	749.43	27,721	Thru Pond 3 - 6 hr.
23	Reservoir	0.33	3	738	42,201	17	749.61	39,394	Thru Pond 3 - 12 hr.
24	Reservoir	0.36	3	1455	51,058	18	749.69	44,772	Thru Pond 3 - 24 hr.
15015 Post 3-5.gpw					Return Period: 2 Year			Thursday, Nov 16 2017, 9:24 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 2

Onsite 5-2 hr.

Hydrograph type = SCS Runoff
Storm frequency = 2 yrs
Drainage area = 5.96 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 1.52 in
Storm duration = 2 hrs

Peak discharge = 1.39 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 18.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 5,969 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.55	0.86
0.60	1.06
0.65	1.21
0.70	1.32
0.75	1.38
0.80	1.39 <<
0.85	1.38
0.90	1.35
0.95	1.32
1.00	1.28
1.05	1.22
1.10	1.14
1.15	1.06
1.20	0.97
1.25	0.90
1.30	0.84
1.35	0.80
1.40	0.78
1.45	0.77
1.50	0.77
1.55	0.78
1.60	0.79
1.65	0.80
1.70	0.81
1.75	0.80
1.80	0.77
1.85	0.72

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 6

Onsite 5-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 2 yrs
Drainage area = 5.96 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.64 in
Storm duration = 24 hrs

Peak discharge = 0.95 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 18.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 20,806 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.45 0.50	15.15 0.90	16.85 0.72
13.50 0.54	15.20 0.90	16.90 0.70
13.55 0.57	15.25 0.91	16.95 0.67
13.60 0.59	15.30 0.92	17.00 0.62
13.65 0.61	15.35 0.92	17.05 0.59
13.70 0.63	15.40 0.93	17.10 0.56
13.75 0.64	15.45 0.93	17.15 0.53
13.80 0.64	15.50 0.94	17.20 0.51
13.85 0.65	15.55 0.95	17.25 0.50
13.90 0.66	15.60 0.95 <<	17.30 0.50
13.95 0.67	15.65 0.95	17.35 0.50
14.00 0.67	15.70 0.92	17.40 0.50
14.05 0.68	15.75 0.89	17.45 0.50
14.10 0.69	15.80 0.84	17.50 0.50
14.15 0.70	15.85 0.79	17.55 0.50
14.20 0.70	15.90 0.76	17.60 0.50
14.25 0.71	15.95 0.73	17.65 0.50
14.30 0.72	16.00 0.71	17.70 0.51
14.35 0.72	16.05 0.70	17.75 0.51
14.40 0.73	16.10 0.69	17.80 0.51
14.45 0.74	16.15 0.70	17.85 0.51
14.50 0.75	16.20 0.70	17.90 0.51
14.55 0.77	16.25 0.70	17.95 0.51
14.60 0.79	16.30 0.70	18.00 0.51
14.65 0.80	16.35 0.71	18.05 0.50
14.70 0.82	16.40 0.71	18.10 0.49
14.75 0.83	16.45 0.71	
14.80 0.84	16.50 0.71	
14.85 0.85	16.55 0.72	...End
14.90 0.86	16.60 0.72	
14.95 0.87	16.65 0.72	
15.00 0.88	16.70 0.72	
15.05 0.88	16.75 0.73	
15.10 0.89	16.80 0.73	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 12

Thru Pond 5 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 6
Max. Elevation = 750.28 ft

Peak discharge = 0.22 cfs
Time interval = 3 min
Reservoir name = Pond 5
Max. Storage = 14,232 cuft

Storage Indication method used.

Outflow hydrograph volume = 20,306 cuft

(Printed values $\geq 75\%$ of Qp.)

Hydrograph Discharge Table

[illegible]

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:57 AM

Hyd. No. 18

Onsite 3-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 2 yrs
Drainage area = 16.85 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.64 in
Storm duration = 24 hrs

Peak discharge = 2.53 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 20.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 55,615 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.50 1.32	15.20 2.40	16.90 1.89
13.55 1.41	15.25 2.41	16.95 1.84
13.60 1.49	15.30 2.43	17.00 1.76
13.65 1.56	15.35 2.45	17.05 1.66
13.70 1.62	15.40 2.47	17.10 1.58
13.75 1.67	15.45 2.48	17.15 1.51
13.80 1.70	15.50 2.50	17.20 1.45
13.85 1.72	15.55 2.52	17.25 1.40
13.90 1.74	15.60 2.53 <<	17.30 1.37
13.95 1.76	15.65 2.52	17.35 1.34
14.00 1.78	15.70 2.49	17.40 1.33
14.05 1.80	15.75 2.43	17.45 1.34
14.10 1.82	15.80 2.34	17.50 1.34
14.15 1.84	15.85 2.23	17.55 1.34
14.20 1.86	15.90 2.13	17.60 1.34
14.25 1.88	15.95 2.05	17.65 1.35
14.30 1.90	16.00 1.98	17.70 1.35
14.35 1.91	16.05 1.93	17.75 1.35
14.40 1.93	16.10 1.89	17.80 1.35
14.45 1.96	16.15 1.87	17.85 1.36
14.50 1.98	16.20 1.86	17.90 1.36
14.55 2.02	16.25 1.87	17.95 1.36
14.60 2.06	16.30 1.87	18.00 1.36
14.65 2.10	16.35 1.88	18.05 1.35
14.70 2.14	16.40 1.89	18.10 1.33
14.75 2.18	16.45 1.89	18.15 1.29
14.80 2.22	16.50 1.90	
14.85 2.25	16.55 1.91	
14.90 2.28	16.60 1.91	...End
14.95 2.30	16.65 1.92	
15.00 2.32	16.70 1.93	
15.05 2.34	16.75 1.93	
15.10 2.36	16.80 1.94	
15.15 2.38	16.85 1.93	

Hydrograph Report

Hydraflow Hydrographs by Intellisolve

Thursday, Nov 16 2017, 8:57 AM

Hyd. No. 24

Thru Pond 3 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 18
Max. Elevation = 749.69 ft

Peak discharge = 0.36 cfs
Time interval = 3 min
Reservoir name = Pond 3
Max. Storage = 44,772 cuft

Storage Indication method used.

Outflow hydrograph volume = 51,058 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
24.05	0.73	749.69	0.36	0.36	----	----	----	----	----	----	----	0.36
24.10	0.68	749.69	0.37	0.36	----	----	----	----	----	----	----	0.36
24.15	0.61	749.69	0.37	0.36	----	----	----	----	----	----	----	0.36
24.20	0.52	749.69	0.37	0.36	----	----	----	----	----	----	----	0.36
24.25	0.40	749.69	0.37	0.36	----	----	----	----	----	----	----	0.36 <<
24.30	0.30	749.69 <<	0.37	0.36	----	----	----	----	----	----	----	0.36
24.35	0.22	749.69	0.37	0.36	----	----	----	----	----	----	----	0.36
24.40	0.14	749.69	0.37	0.36	----	----	----	----	----	----	----	0.36
24.45	0.09	749.69	0.37	0.36	----	----	----	----	----	----	----	0.36
24.50	0.04	749.69	0.36	0.36	----	----	----	----	----	----	----	0.36
24.55	0.01	749.69	0.36	0.36	----	----	----	----	----	----	----	0.36
24.60	0.00	749.69	0.36	0.36	----	----	----	----	----	----	----	0.36
24.65	0.00	749.69	0.36	0.36	----	----	----	----	----	----	----	0.36
24.70	0.00	749.69	0.36	0.36	----	----	----	----	----	----	----	0.36
24.75	0.00	749.69	0.36	0.36	----	----	----	----	----	----	----	0.36
24.80	0.00	749.69	0.36	0.36	----	----	----	----	----	----	----	0.36
24.85	0.00	749.68	0.36	0.36	----	----	----	----	----	----	----	0.36
24.90	0.00	749.68	0.36	0.36	----	----	----	----	----	----	----	0.36
24.95	0.00	749.68	0.36	0.36	----	----	----	----	----	----	----	0.36
25.00	0.00	749.68	0.36	0.36	----	----	----	----	----	----	----	0.36
25.05	0.00	749.68	0.36	0.36	----	----	----	----	----	----	----	0.36
25.10	0.00	749.68	0.36	0.36	----	----	----	----	----	----	----	0.36
25.15	0.00	749.68	0.36	0.36	----	----	----	----	----	----	----	0.36
25.20	0.00	749.68	0.36	0.36	----	----	----	----	----	----	----	0.36
25.25	0.00	749.68	0.36	0.35	----	----	----	----	----	----	----	0.35
25.30	0.00	749.68	0.36	0.35	----	----	----	----	----	----	----	0.35
25.35	0.00	749.67	0.36	0.35	----	----	----	----	----	----	----	0.35
25.40	0.00	749.67	0.36	0.35	----	----	----	----	----	----	----	0.35
25.45	0.00	749.67	0.36	0.35	----	----	----	----	----	----	----	0.35
25.50	0.00	749.67	0.36	0.35	----	----	----	----	----	----	----	0.35
25.55	0.00	749.67	0.36	0.35	----	----	----	----	----	----	----	0.35
25.60	0.00	749.67	0.36	0.35	----	----	----	----	----	----	----	0.35
25.65	0.00	749.67	0.36	0.35	----	----	----	----	----	----	----	0.35
25.70	0.00	749.67	0.35	0.35	----	----	----	----	----	----	----	0.35
25.75	0.00	749.67	0.35	0.35	----	----	----	----	----	----	----	0.35
25.80	0.00	749.67	0.35	0.35	----	----	----	----	----	----	----	0.35
25.85	0.00	749.66	0.35	0.35	----	----	----	----	----	----	----	0.35
25.90	0.00	749.66	0.35	0.35	----	----	----	----	----	----	----	0.35
25.95	0.00	749.66	0.35	0.35	----	----	----	----	----	----	----	0.35

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Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	1.37	3	36	3,501	---	----	-----	Onsite 4-1 hr.
2	SCS Runoff	1.43	3	48	6,129	---	----	-----	Onsite 4-2 hr.
3	SCS Runoff	1.32	3	60	7,932	---	----	-----	Onsite 4-3 hr.
4	SCS Runoff	1.07	3	96	11,702	---	----	-----	Onsite 4-6 hr.
5	SCS Runoff	1.20	3	327	17,667	---	----	-----	Onsite 4-12 hr.
6	SCS Runoff	0.98	3	936	21,365	---	----	-----	Onsite 4-24 hr.
7	Reservoir	0.02	3	87	3,301	1	750.09	3,451	Thru Pond 4 - 1 hr.
8	Reservoir	0.06	3	144	5,820	2	750.16	5,924	Thru Pond 4 - 2 hr.
9	Reservoir	0.08	3	204	7,572	3	750.21	7,496	Thru Pond 4 - 3 hr.
10	Reservoir	0.14	3	378	11,263	4	750.28	10,201	Thru Pond 4 - 6 hr.
11	Reservoir	0.21	3	729	17,116	5	750.37	13,551	Thru Pond 4 - 12 hr.
12	Reservoir	0.23	3	1446	20,650	6	750.39	14,409	Thru Pond 4 - 24 hr.
15015 Post 4.gpw					Return Period: 2 Year			Thursday, Nov 16 2017, 8:58 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 2

Onsite 4-2 hr.

Hydrograph type = SCS Runoff
Storm frequency = 2 yrs
Drainage area = 6.12 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 1.52 in
Storm duration = 2 hrs

Peak discharge = 1.43 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 17.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 6,129 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.55	0.88
0.60	1.08
0.65	1.25
0.70	1.36
0.75	1.42
0.80	1.43 <<
0.85	1.42
0.90	1.39
0.95	1.36
1.00	1.31
1.05	1.26
1.10	1.17
1.15	1.09
1.20	0.99
1.25	0.92
1.30	0.86
1.35	0.82
1.40	0.80
1.45	0.79
1.50	0.79
1.55	0.80
1.60	0.81
1.65	0.82
1.70	0.83
1.75	0.82
1.80	0.79
1.85	0.74

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 6

Onsite 4-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 2 yrs
Drainage area = 6.12 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.64 in
Storm duration = 24 hrs

Peak discharge = 0.98 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 17.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 21,365 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.45 0.51	15.15 0.92	16.85 0.74
13.50 0.55	15.20 0.93	16.90 0.72
13.55 0.58	15.25 0.93	16.95 0.69
13.60 0.61	15.30 0.94	17.00 0.64
13.65 0.63	15.35 0.95	17.05 0.60
13.70 0.65	15.40 0.95	17.10 0.57
13.75 0.65	15.45 0.96	17.15 0.55
13.80 0.66	15.50 0.97	17.20 0.53
13.85 0.67	15.55 0.97	17.25 0.52
13.90 0.68	15.60 0.98 <<	17.30 0.51
13.95 0.68	15.65 0.97	17.35 0.51
14.00 0.69	15.70 0.95	17.40 0.51
14.05 0.70	15.75 0.91	17.45 0.51
14.10 0.71	15.80 0.86	17.50 0.52
14.15 0.71	15.85 0.82	17.55 0.52
14.20 0.72	15.90 0.78	17.60 0.52
14.25 0.73	15.95 0.75	17.65 0.52
14.30 0.74	16.00 0.73	17.70 0.52
14.35 0.74	16.05 0.72	17.75 0.52
14.40 0.75	16.10 0.71	17.80 0.52
14.45 0.76	16.15 0.71	17.85 0.52
14.50 0.77	16.20 0.72	17.90 0.52
14.55 0.79	16.25 0.72	17.95 0.52
14.60 0.81	16.30 0.72	18.00 0.53
14.65 0.82	16.35 0.72	18.05 0.52
14.70 0.84	16.40 0.73	18.10 0.50
14.75 0.85	16.45 0.73	
14.80 0.87	16.50 0.73	
14.85 0.88	16.55 0.73	...End
14.90 0.89	16.60 0.74	
14.95 0.89	16.65 0.74	
15.00 0.90	16.70 0.74	
15.05 0.91	16.75 0.74	
15.10 0.91	16.80 0.75	

Hydrograph Report

Hydraflow Hydrographs by Intellisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 12

Thru Pond 4 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 6
Max. Elevation = 750.39 ft

Peak discharge = 0.23 cfs
Time interval = 3 min
Reservoir name = Pond 4
Max. Storage = 14,409 cuft

Storage Indication method used.

Outflow hydrograph volume = 20,650 cuft

Hydrograph Discharge Table

(Printed values >= 75% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
23.05	0.27	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.15	0.27	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.20	0.28	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.25	0.28	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.30	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.35	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.40	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.45	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.50	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.55	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.60	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.65	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.70	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.75	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.80	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.85	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.90	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
23.95	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.00	0.29	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.05	0.28	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.10	0.25	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23 <<
24.15	0.21	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.20	0.16	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.25	0.11	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.30	0.08	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.35	0.05	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.40	0.02	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.45	0.01	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.50	0.00	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.55	0.00	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.60	0.00	750.39	0.23	0.23	----	----	----	----	----	----	----	0.23
24.65	0.00	750.39	0.23	0.23	----	----	----	----	----	----	----	0.22
24.70	0.00	750.38	0.23	0.22	----	----	----	----	----	----	----	0.22
24.75	0.00	750.38	0.22	0.22	----	----	----	----	----	----	----	0.22
24.80	0.00	750.38	0.22	0.22	----	----	----	----	----	----	----	0.22
24.85	0.00	750.38	0.22	0.22	----	----	----	----	----	----	----	0.22
24.90	0.00	750.38	0.22	0.22	----	----	----	----	----	----	----	0.22
24.95	0.00	750.38	0.22	0.22	----	----	----	----	----	----	----	0.22
25.00	0.00	750.38	0.22	0.22	----	----	----	----	----	----	----	0.22

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Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Manual	0.14	3	84	10,784	---	----	----	Thru Pond 5 - 1 hr.
2	Manual	0.27	3	141	16,873	---	----	----	Thru Pond 5 - 2 hr.
3	Manual	0.34	3	198	20,460	---	----	----	Thru Pond 5 - 3 hr.
4	Manual	0.45	3	372	28,097	---	----	----	Thru Pond 5 - 6 hr.
5	Manual	0.53	3	654	36,221	---	----	----	Thru Pond 5 - 12 hr.
6	Manual	0.59	3	1164	44,636	---	----	----	Thru Pond 5 - 24 hr.
7	Manual	0.25	3	93	26,505	---	----	----	Thru Pond 3 - 1 hr.
8	Manual	0.36	3	150	42,382	---	----	----	Thru Pond 3 - 2 hr.
9	Manual	0.46	3	207	60,985	---	----	----	Thru Pond 3 - 3 hr.
10	Manual	0.50	3	384	71,693	---	----	----	Thru Pond 3 - 6 hr.
11	Manual	0.57	3	738	92,832	---	----	----	Thru Pond 3 - 12 hr.
12	Manual	0.63	3	1458	114,551	---	----	----	Thru Pond 3 - 24 hr.
13	SCS Runoff	9.67	3	36	24,938	---	----	----	Onsite 2-1 hr.
14	SCS Runoff	9.57	3	45	38,834	---	----	----	Onsite 2-2 hr.
15	SCS Runoff	8.36	3	54	47,003	---	----	----	Onsite 2-3 hr.
16	SCS Runoff	6.11	3	93	64,381	---	----	----	Onsite 2-6 hr.
17	SCS Runoff	5.51	3	327	82,916	---	----	----	Onsite 2-12 hr.
18	SCS Runoff	4.34	3	936	102,312	---	----	----	Onsite 2-24 hr.
19	Combine	9.76	3	36	62,227	1, 7, 13,	----	----	Total to Pond 2 - 1 hr.
20	Combine	9.68	3	45	98,089	2, 8, 14,	----	----	Total to Pond 2 - 2 hr.
21	Combine	8.50	3	54	128,448	3, 9, 15,	----	----	Total to Pond 2 - 3 hr.
22	Combine	6.36	3	93	164,171	4, 10, 16,	----	----	Total to Pond 2 - 6 hr.
23	Combine	5.98	3	327	211,969	5, 11, 17,	----	----	Total to Pond 2 - 12 hr.
24	Combine	5.15	3	936	261,499	6, 12, 18,	----	----	Total to Pond 2 - 24 hr.
25	Reservoir	0.29	3	561	60,306	19	748.50	27,701	Thru Pond 2 - 1 hr.
26	Reservoir	0.44	3	732	97,394	20	748.86	45,383	Thru Pond 2 - 2 hr.
27	Reservoir	0.52	3	903	128,221	21	749.10	58,076	Thru Pond 2 - 3 hr.
28	Reservoir	0.64	3	981	165,483	22	749.48	79,464	Thru Pond 2 - 6 hr.
29	Reservoir	1.05	3	918	214,113	23	749.83	99,273	Thru Pond 2 - 12 hr.
30	Reservoir	2.42	3	1446	263,295	24	749.93	104,762	Thru Pond 2 - 24 hr.
15015 Post 1-2.gpw					Return Period: 10 Year			Thursday, Nov 16 2017, 9:30 AM	

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
31	SCS Runoff	26.26	3	36	67,708	---	----	----	Onsite 1-1 hr.
32	SCS Runoff	25.98	3	45	105,438	---	----	----	Onsite 1-2 hr.
33	SCS Runoff	22.70	3	54	127,617	---	----	----	Onsite 1-3 hr.
34	SCS Runoff	16.59	3	93	174,801	---	----	----	Onsite 1-6 hr.
35	SCS Runoff	14.95	3	327	225,125	---	----	----	Onsite 1-12 hr.
36	SCS Runoff	11.78	3	936	277,787	---	----	----	Onsite 1-24 hr.
37	Combine	26.32	3	36	128,015	25, 31,	----	----	Total to Pond1 - 1 hr.
38	Combine	26.05	3	45	202,833	26, 32,	----	----	Total to Pond1 - 2 hr.
39	Combine	22.79	3	54	255,839	27, 33,	----	----	Total to Pond1 - 3 hr.
40	Combine	16.77	3	93	340,284	28, 34,	----	----	Total to Pond1 - 6 hr.
41	Combine	15.26	3	327	439,238	29, 35,	----	----	Total to Pond1 - 12 hr.
42	Combine	12.28	3	936	541,082	30, 36,	----	----	Total to Pond1 - 24 hr.
43	Reservoir	1.45	3	87	122,537	37	744.50	64,601	Thru Pond 1 - 1 hr.
44	Reservoir	2.30	3	144	195,968	38	744.96	96,440	Thru Pond 1 - 2 hr.
45	Reservoir	2.57	3	201	247,728	39	745.18	112,336	Thru Pond 1 - 3 hr.
46	Reservoir	5.16	3	321	330,967	40	745.40	128,624	Thru Pond 1 - 6 hr.
47	Reservoir	6.33	3	486	427,899	41	745.46	133,540	Thru Pond 1 - 12 hr.
48	Reservoir	7.42	3	1029	526,152	42	745.53	138,759	Thru Pond 1 - 1 hr.
15015 Post 1-2.gpw					Return Period: 10 Year			Thursday, Nov 16 2017, 9:30 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:53 AM

Hyd. No. 13

Onsite 2-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 14.25 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 1.96 in
Storm duration = 1 hrs

Peak discharge = 9.67 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 21.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 24,938 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.35	5.09
0.40	6.77
0.45	8.16
0.50	9.09
0.55	9.58
0.60	9.67 <<
0.65	9.46
0.70	8.91
0.75	8.14
0.80	7.43
0.85	6.87
0.90	6.38
0.95	5.94
1.00	5.61
1.05	5.17

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:53 AM

Hyd. No. 18

Onsite 2-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 4.34 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Drainage area	= 14.25 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 21.0 min
Total precip.	= 4.08 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 102,312 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.40 2.23	15.10 4.16	16.80 3.19
13.45 2.45	15.15 4.18	16.85 3.17
13.50 2.64	15.20 4.20	16.90 3.11
13.55 2.81	15.25 4.22	16.95 3.01
13.60 2.96	15.30 4.23	17.00 2.89
13.65 3.08	15.35 4.25	17.05 2.73
13.70 3.18	15.40 4.27	17.10 2.59
13.75 3.26	15.45 4.29	17.15 2.46
13.80 3.31	15.50 4.31	17.20 2.36
13.85 3.33	15.55 4.32	17.25 2.29
13.90 3.35	15.60 4.34 <<	17.30 2.23
13.95 3.38	15.65 4.31	17.35 2.19
14.00 3.40	15.70 4.25	
14.05 3.42	15.75 4.14	
14.10 3.44	15.80 3.98	...End
14.15 3.47	15.85 3.79	
14.20 3.49	15.90 3.61	
14.25 3.51	15.95 3.47	
14.30 3.53	16.00 3.34	
14.35 3.55	16.05 3.25	
14.40 3.57	16.10 3.18	
14.45 3.60	16.15 3.13	
14.50 3.64	16.20 3.11	
14.55 3.69	16.25 3.12	
14.60 3.74	16.30 3.13	
14.65 3.81	16.35 3.13	
14.70 3.87	16.40 3.14	
14.75 3.93	16.45 3.15	
14.80 3.98	16.50 3.16	
14.85 4.02	16.55 3.16	
14.90 4.06	16.60 3.17	
14.95 4.09	16.65 3.17	
15.00 4.12	16.70 3.18	
15.05 4.14	16.75 3.19	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:30 AM

Hyd. No. 19

Total to Pond 2 - 1 hr.

Hydrograph type = Combine
Storm frequency = 10 yrs
Inflow hyds. = 1, 7, 13

Peak discharge = 9.76 cfs
Time interval = 3 min

Hydrograph Volume = 62,227 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 7 + (cfs)	Hyd. 13 + (cfs)	Outflow (cfs)
0.45	0.02	0.01	8.16	8.19
0.50	0.02	0.02	9.09	9.14
0.55	0.03	0.04	9.58	9.65
0.60	0.03	0.05	9.67 <<	9.76 <<
0.65	0.04	0.07	9.46	9.57
0.70	0.05	0.09	8.91	9.05
0.75	0.07	0.11	8.14	8.31
0.80	0.07	0.13	7.43	7.64

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 24

Total to Pond 2 - 24 hr.

Hydrograph type = Combine
Storm frequency = 10 yrs
Inflow hyds. = 6, 12, 18

Peak discharge = 5.31 cfs
Time interval = 3 min

Hydrograph Volume = 274,366 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 6 + (cfs)	Hyd. 12 + (cfs)	Hyd. 18 + (cfs)	Outflow (cfs)
14.15	0.26	0.28	3.47	4.01
14.20	0.27	0.29	3.49	4.05
14.25	0.28	0.29	3.51	4.08
14.30	0.29	0.30	3.53	4.11
14.35	0.30	0.30	3.55	4.15
14.40	0.30	0.31	3.57	4.18
14.45	0.31	0.31	3.60	4.23
14.50	0.32	0.32	3.64	4.28
14.55	0.33	0.32	3.69	4.34
14.60	0.34	0.33	3.74	4.41
14.65	0.35	0.33	3.81	4.49
14.70	0.36	0.34	3.87	4.57
14.75	0.37	0.34	3.93	4.64
14.80	0.38	0.35	3.98	4.70
14.85	0.39	0.35	4.02	4.76
14.90	0.40	0.36	4.06	4.82
14.95	0.41	0.36	4.09	4.86
15.00	0.42	0.37	4.12	4.90
15.05	0.43	0.37	4.14	4.94
15.10	0.44	0.38	4.16	4.97
15.15	0.45	0.38	4.18	5.01
15.20	0.46	0.39	4.20	5.04
15.25	0.47	0.39	4.22	5.08
15.30	0.48	0.40	4.23	5.11
15.35	0.49	0.40	4.25	5.14
15.40	0.50	0.41	4.27	5.18
15.45	0.51	0.41	4.29	5.21
15.50	0.52	0.42	4.31	5.24
15.55	0.53	0.42	4.32	5.27
15.60	0.54	0.43	4.34 <<	5.31 <<
15.65	0.55	0.43	4.31	5.30
15.70	0.56	0.44	4.25	5.24
15.75	0.57	0.44	4.14	5.15
15.80	0.58	0.45	3.98	5.01
15.85	0.58	0.45	3.79	4.82
15.90	0.59	0.46	3.61	4.66
15.95	0.60	0.46	3.47	4.52
16.00	0.60	0.46	3.34	4.41

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Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:30 AM

Hyd. No. 30

Thru Pond 2 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 10 yrs
Inflow hyd. No. = 24
Max. Elevation = 749.92 ft

Peak discharge = 2.22 cfs
Time interval = 3 min
Reservoir name = Pond 2
Max. Storage = 104,267 cuft

Storage Indication method used.

Outflow hydrograph volume = 250,546 cuft

Hydrograph Discharge Table

(Printed values >= 75% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
21.70	2.30	749.89	1.67	0.56	----	----	1.11	----	----	----	----	1.67
21.75	2.26	749.89	1.69	0.55	----	----	1.14	----	----	----	----	1.69
21.80	2.22	749.89	1.71	0.55	----	----	1.16	----	----	----	----	1.71
21.85	2.16	749.90	1.72	0.55	----	----	1.18	----	----	----	----	1.72
21.90	2.11	749.90	1.74	0.54	----	----	1.19	----	----	----	----	1.74
21.95	2.06	749.90	1.75	0.54	----	----	1.20	----	----	----	----	1.75
22.00	2.02	749.90	1.76	0.54	----	----	1.22	----	----	----	----	1.76
22.05	1.99	749.90	1.77	0.54	----	----	1.23	----	----	----	----	1.77
22.10	1.97	749.90	1.78	0.54	----	----	1.24	----	----	----	----	1.78
22.15	1.96	749.90	1.79	0.54	----	----	1.25	----	----	----	----	1.79
22.20	1.95	749.90	1.80	0.54	----	----	1.26	----	----	----	----	1.80
22.25	1.95	749.90	1.81	0.54	----	----	1.27	----	----	----	----	1.81
22.30	1.95	749.90	1.82	0.54	----	----	1.28	----	----	----	----	1.82
22.35	1.95	749.90	1.83	0.54	----	----	1.29	----	----	----	----	1.83
22.40	1.94	749.90	1.84	0.54	----	----	1.30	----	----	----	----	1.84
22.45	1.94	749.90	1.85	0.54	----	----	1.31	----	----	----	----	1.84
22.50	1.94	749.90	1.85	0.54	----	----	1.31	----	----	----	----	1.85
22.55	1.94	749.90	1.86	0.54	----	----	1.32	----	----	----	----	1.86
22.60	1.94	749.90	1.86	0.54	----	----	1.33	----	----	----	----	1.86
22.65	1.94	749.90	1.87	0.54	----	----	1.33	----	----	----	----	1.87
22.70	1.94	749.90	1.87	0.54	----	----	1.34	----	----	----	----	1.87
22.75	1.94	749.90	1.88	0.54	----	----	1.34	----	----	----	----	1.88
22.80	1.94	749.91	1.88	0.54	----	----	1.35	----	----	----	----	1.88
22.85	1.95	749.91	1.89	0.54	----	----	1.35	----	----	----	----	1.89
22.90	1.97	749.91	1.89	0.54	----	----	1.36	----	----	----	----	1.89
22.95	2.01	749.91	1.90	0.54	----	----	1.36	----	----	----	----	1.90
23.00	2.06	749.91	1.91	0.54	----	----	1.37	----	----	----	----	1.91
23.05	2.12	749.91	1.92	0.54	----	----	1.38	----	----	----	----	1.92
23.10	2.17	749.91	1.94	0.53	----	----	1.40	----	----	----	----	1.93
23.15	2.21	749.91	1.95	0.53	----	----	1.42	----	----	----	----	1.95
23.20	2.25	749.91	1.97	0.53	----	----	1.44	----	----	----	----	1.97
23.25	2.28	749.91	1.99	0.53	----	----	1.46	----	----	----	----	1.99
23.30	2.30	749.91	2.01	0.53	----	----	1.48	----	----	----	----	2.01
23.35	2.32	749.91	2.03	0.53	----	----	1.50	----	----	----	----	2.03
23.40	2.33	749.91	2.05	0.53	----	----	1.52	----	----	----	----	2.05
23.45	2.33	749.91	2.07	0.53	----	----	1.54	----	----	----	----	2.07
23.50	2.33	749.91	2.09	0.53	----	----	1.56	----	----	----	----	2.09
23.55	2.33	749.92	2.11	0.53	----	----	1.57	----	----	----	----	2.10

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Thru Pond 2 - 24 hr.

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
23.60	2.33	749.92	2.12	0.53	----	----	1.59	----	----	----	----	2.12
23.65	2.33	749.92	2.13	0.53	----	----	1.60	----	----	----	----	2.13
23.70	2.33	749.92	2.15	0.53	----	----	1.62	----	----	----	----	2.15
23.75	2.33	749.92	2.16	0.53	----	----	1.63	----	----	----	----	2.16
23.80	2.33	749.92	2.17	0.53	----	----	1.64	----	----	----	----	2.17
23.85	2.34	749.92	2.18	0.53	----	----	1.66	----	----	----	----	2.18
23.90	2.34	749.92	2.19	0.53	----	----	1.67	----	----	----	----	2.19
23.95	2.34	749.92	2.20	0.53	----	----	1.68	----	----	----	----	2.20
24.00	2.34	749.92	2.21	0.53	----	----	1.68	----	----	----	----	2.21
24.05	2.30	749.92	2.22	0.53	----	----	1.69	----	----	----	----	2.22
24.10	2.23	749.92 <<	2.22	0.53	----	----	1.70	----	----	----	----	2.22 <<
24.15	2.12	749.92	2.22	0.53	----	----	1.69	----	----	----	----	2.22
24.20	1.98	749.92	2.21	0.53	----	----	1.68	----	----	----	----	2.21
24.25	1.80	749.92	2.19	0.53	----	----	1.66	----	----	----	----	2.19
24.30	1.64	749.92	2.16	0.53	----	----	1.63	----	----	----	----	2.16
24.35	1.50	749.92	2.12	0.53	----	----	1.59	----	----	----	----	2.12
24.40	1.39	749.91	2.07	0.53	----	----	1.54	----	----	----	----	2.07
24.45	1.30	749.91	2.02	0.53	----	----	1.49	----	----	----	----	2.02
24.50	1.23	749.91	1.97	0.53	----	----	1.43	----	----	----	----	1.97
24.55	1.18	749.91	1.92	0.54	----	----	1.38	----	----	----	----	1.92
24.60	1.15	749.90	1.87	0.54	----	----	1.33	----	----	----	----	1.87
24.65	1.15	749.90	1.82	0.54	----	----	1.28	----	----	----	----	1.82
24.70	1.15	749.90	1.77	0.54	----	----	1.23	----	----	----	----	1.77
24.75	1.14	749.90	1.75	0.54	----	----	1.21	----	----	----	----	1.75
24.80	1.14	749.90	1.73	0.55	----	----	1.18	----	----	----	----	1.73
24.85	1.14	749.89	1.71	0.55	----	----	1.16	----	----	----	----	1.71
24.90	1.13	749.89	1.69	0.55	----	----	1.14	----	----	----	----	1.69
24.95	1.13	749.89	1.67	0.56	----	----	1.12	----	----	----	----	1.67

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 31

Onsite 1-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 38.69 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 1.96 in
Storm duration = 1 hrs

Peak discharge = 26.26 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 24.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 67,708 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.35	13.81
0.40	18.37
0.45	22.15
0.50	24.69
0.55	26.01
0.60	26.26 <<
0.65	25.67
0.70	24.18
0.75	22.10
0.80	20.18
0.85	18.64
0.90	17.32
0.95	16.11
1.00	15.23
1.05	14.03

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 36

Onsite 1-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 38.69 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 4.08 in
Storm duration = 24 hrs

Peak discharge = 11.78 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 24.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 277,787 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.40 6.06	15.10 11.29	16.80 8.67
13.45 6.65	15.15 11.34	16.85 8.60
13.50 7.17	15.20 11.40	16.90 8.44
13.55 7.64	15.25 11.45	16.95 8.18
13.60 8.04	15.30 11.50	17.00 7.84
13.65 8.37	15.35 11.55	17.05 7.40
13.70 8.64	15.40 11.59	17.10 7.02
13.75 8.84	15.45 11.64	17.15 6.69
13.80 8.98	15.50 11.69	17.20 6.42
13.85 9.04	15.55 11.74	17.25 6.20
13.90 9.11	15.60 11.78 <<	17.30 6.04
13.95 9.17	15.65 11.71	17.35 5.94
14.00 9.23	15.70 11.53	
14.05 9.29	15.75 11.23	
14.10 9.35	15.80 10.81	...End
14.15 9.41	15.85 10.28	
14.20 9.47	15.90 9.81	
14.25 9.53	15.95 9.41	
14.30 9.58	16.00 9.08	
14.35 9.64	16.05 8.82	
14.40 9.69	16.10 8.63	
14.45 9.77	16.15 8.51	
14.50 9.88	16.20 8.45	
14.55 10.01	16.25 8.47	
14.60 10.17	16.30 8.49	
14.65 10.35	16.35 8.51	
14.70 10.52	16.40 8.53	
14.75 10.67	16.45 8.55	
14.80 10.80	16.50 8.57	
14.85 10.92	16.55 8.58	
14.90 11.03	16.60 8.60	
14.95 11.11	16.65 8.62	
15.00 11.19	16.70 8.64	
15.05 11.24	16.75 8.66	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:33 AM

Hyd. No. 37

Total to Pond1 - 1 hr.

Hydrograph type = Combine
Storm frequency = 10 yrs
Inflow hyds. = 25, 31

Peak discharge = 26.32 cfs
Time interval = 3 min

Hydrograph Volume = 124,962 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 25 + (cfs)	Hyd. 31 + (cfs)	Outflow (cfs)
0.45	0.02	22.15	22.17
0.50	0.02	24.69	24.71
0.55	0.04	26.01	26.06
0.60	0.06	26.26 <<	26.32 <<
0.65	0.08	25.67	25.75
0.70	0.10	24.18	24.28
0.75	0.13	22.10	22.22
0.80	0.15	20.18	20.32

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:33 AM

Hyd. No. 42

Total to Pond1 - 24 hr.

Hydrograph type = Combine
Storm frequency = 10 yrs
Inflow hyds. = 30, 36

Peak discharge = 12.27 cfs
Time interval = 3 min

Hydrograph Volume = 528,334 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
13.80	0.28	8.98	9.26
13.85	0.28	9.04	9.33
13.90	0.29	9.11	9.40
13.95	0.30	9.17	9.46
14.00	0.30	9.23	9.53
14.05	0.31	9.29	9.60
14.10	0.31	9.35	9.67
14.15	0.32	9.41	9.73
14.20	0.33	9.47	9.79
14.25	0.33	9.53	9.86
14.30	0.34	9.58	9.92
14.35	0.34	9.64	9.98
14.40	0.35	9.69	10.04
14.45	0.35	9.77	10.13
14.50	0.36	9.88	10.24
14.55	0.36	10.01	10.38
14.60	0.37	10.17	10.54
14.65	0.38	10.35	10.73
14.70	0.38	10.52	10.90
14.75	0.39	10.67	11.06
14.80	0.39	10.80	11.20
14.85	0.40	10.92	11.32
14.90	0.41	11.03	11.43
14.95	0.41	11.11	11.53
15.00	0.42	11.19	11.60
15.05	0.42	11.24	11.66
15.10	0.43	11.29	11.72
15.15	0.44	11.34	11.78
15.20	0.44	11.40	11.84
15.25	0.45	11.45	11.89
15.30	0.45	11.50	11.95
15.35	0.46	11.55	12.00
15.40	0.46	11.59	12.06
15.45	0.47	11.64	12.11
15.50	0.48	11.69	12.17
15.55	0.48	11.74	12.22
15.60	0.49	11.78 <<	12.27 <<
15.65	0.49	11.71	12.21

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Total to Pond1 - 24 hr.

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
15.70	0.50	11.53	12.03
15.75	0.50	11.23	11.73
15.80	0.51	10.81	11.32
15.85	0.51	10.28	10.79
15.90	0.52	9.81	10.33
15.95	0.52	9.41	9.93
16.00	0.52	9.08	9.60
16.05	0.53	8.82	9.35
16.70	0.57	8.64	9.21
16.75	0.58	8.66	9.23
16.80	0.58	8.67	9.25

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:34 AM

Hyd. No. 48

Thru Pond 1 - 1 hr.

Hydrograph type = Reservoir
Storm frequency = 10 yrs
Inflow hyd. No. = 42
Max. Elevation = 745.53 ft

Peak discharge = 7.41 cfs
Time interval = 3 min
Reservoir name = Pond 1
Max. Storage = 138,717 cuft

Storage Indication method used.

Outflow hydrograph volume = 513,556 cuft

Hydrograph Discharge Table

(Printed values >= 75% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16.10	9.16	745.42	5.67	----	----	----	----	----	----	----	----	5.67
16.15	9.04	745.43	5.81	----	----	----	----	----	----	----	----	5.81
16.20	8.99	745.44	5.93	----	----	----	----	----	----	----	----	5.93
16.25	9.02	745.44	6.06	----	----	----	----	----	----	----	----	6.06
16.30	9.04	745.45	6.18	----	----	----	----	----	----	----	----	6.18
16.35	9.06	745.46	6.29	----	----	----	----	----	----	----	----	6.29
16.40	9.08	745.47	6.41	----	----	----	----	----	----	----	----	6.41
16.45	9.10	745.47	6.51	----	----	----	----	----	----	----	----	6.51
16.50	9.13	745.48	6.62	----	----	----	----	----	----	----	----	6.62
16.55	9.15	745.48	6.72	----	----	----	----	----	----	----	----	6.72
16.60	9.17	745.49	6.82	----	----	----	----	----	----	----	----	6.82
16.65	9.19	745.49	6.91	----	----	----	----	----	----	----	----	6.91
16.70	9.21	745.50	7.01	----	----	----	----	----	----	----	----	7.01
16.75	9.23	745.51	7.08	----	----	----	----	----	----	----	----	7.08
16.80	9.25	745.51	7.15	----	----	----	----	----	----	----	----	7.15
16.85	9.18	745.52	7.21	----	----	----	----	----	----	----	----	7.21
16.90	9.02	745.52	7.28	----	----	----	----	----	----	----	----	7.28
16.95	8.77	745.52	7.33	----	----	----	----	----	----	----	----	7.33
17.00	8.43	745.53	7.37	----	----	----	----	----	----	----	----	7.37
17.05	8.00	745.53	7.40	----	----	----	----	----	----	----	----	7.40
17.10	7.62	745.53	7.41	----	----	----	----	----	----	----	----	7.41
17.15	7.30	745.53 <<	7.41	----	----	----	----	----	----	----	----	7.41 <<
17.20	7.03	745.53	7.40	----	----	----	----	----	----	----	----	7.40
17.25	6.81	745.53	7.39	----	----	----	----	----	----	----	----	7.39
17.30	6.65	745.53	7.37	----	----	----	----	----	----	----	----	7.37
17.35	6.55	745.52	7.34	----	----	----	----	----	----	----	----	7.34
17.40	6.51	745.52	7.32	----	----	----	----	----	----	----	----	7.32
17.45	6.52	745.52	7.29	----	----	----	----	----	----	----	----	7.29
17.50	6.52	745.52	7.26	----	----	----	----	----	----	----	----	7.26
17.55	6.53	745.52	7.24	----	----	----	----	----	----	----	----	7.24
17.60	6.54	745.52	7.22	----	----	----	----	----	----	----	----	7.22
17.65	6.55	745.51	7.20	----	----	----	----	----	----	----	----	7.20
17.70	6.56	745.51	7.18	----	----	----	----	----	----	----	----	7.18
17.75	6.57	745.51	7.16	----	----	----	----	----	----	----	----	7.16
17.80	6.58	745.51	7.14	----	----	----	----	----	----	----	----	7.14
17.85	6.59	745.51	7.12	----	----	----	----	----	----	----	----	7.12
17.90	6.60	745.51	7.10	----	----	----	----	----	----	----	----	7.10
17.95	6.61	745.51	7.09	----	----	----	----	----	----	----	----	7.09

Continues on next page...

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	4.56	3	33	11,032	---	----	----	Onsite 5-1 hr.
2	SCS Runoff	4.37	3	39	17,179	---	----	----	Onsite 5-2 hr.
3	SCS Runoff	3.77	3	51	20,793	---	----	----	Onsite 5-3 hr.
4	SCS Runoff	2.72	3	90	28,481	---	----	----	Onsite 5-6 hr.
5	SCS Runoff	2.46	3	324	36,680	---	----	----	Onsite 5-12 hr.
6	SCS Runoff	1.93	3	936	45,260	---	----	----	Onsite 5-24 hr.
7	Reservoir	0.14	3	84	10,784	1	750.21	10,694	Thru Pond 5 - 1 hr.
8	Reservoir	0.27	3	141	16,873	2	750.32	16,046	Thru Pond 5 - 2 hr.
9	Reservoir	0.34	3	198	20,460	3	750.37	18,682	Thru Pond 5 - 3 hr.
10	Reservoir	0.45	3	372	28,097	4	750.45	22,566	Thru Pond 5 - 6 hr.
11	Reservoir	0.53	3	654	36,221	5	750.50	25,350	Thru Pond 5 - 12 hr.
12	Reservoir	0.59	3	1164	44,636	6	750.54	27,414	Thru Pond 5 - 24 hr.
13	SCS Runoff	11.44	3	36	29,488	---	----	----	Onsite 3-1 hr.
14	SCS Runoff	11.31	3	45	45,920	---	----	----	Onsite 3-2 hr.
15	SCS Runoff	11.58	3	54	65,078	---	----	----	Onsite 3-3 hr.
16	SCS Runoff	7.23	3	93	76,128	---	----	----	Onsite 3-6 hr.
17	SCS Runoff	6.51	3	327	98,045	---	----	----	Onsite 3-12 hr.
18	SCS Runoff	5.13	3	936	120,980	---	----	----	Onsite 3-24 hr.
19	Reservoir	0.25	3	93	26,505	13	749.45	28,811	Thru Pond 3 - 1 hr.
20	Reservoir	0.36	3	150	42,382	14	749.68	44,114	Thru Pond 3 - 2 hr.
21	Reservoir	0.46	3	207	60,985	15	749.96	61,617	Thru Pond 3 - 3 hr.
22	Reservoir	0.50	3	384	71,693	16	750.06	68,778	Thru Pond 3 - 6 hr.
23	Reservoir	0.57	3	738	92,832	17	750.30	84,839	Thru Pond 3 - 12 hr.
24	Reservoir	0.63	3	1458	114,551	18	750.51	99,023	Thru Pond 3 - 24 hr.
15015 Post 3-5.gpw					Return Period: 10 Year			Thursday, Nov 16 2017, 9:24 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 1

Onsite 5-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 5.96 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 1.96 in
Storm duration = 1 hrs

Peak discharge = 4.56 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 18.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 11,032 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.35	3.08
0.40	3.80
0.45	4.29
0.50	4.55
0.55	4.56 <<
0.60	4.37
0.65	3.98
0.70	3.54
0.75	3.19
0.80	2.94
0.85	2.77
0.90	2.62
0.95	2.45
1.00	2.34

...End

Hydrograph Report

Hydraflow Hydrographs by Intellisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 6

Onsite 5-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 5.96 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 4.08 in
Storm duration = 24 hrs

Peak discharge = 1.93 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 18.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 45,260 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.35 0.97	15.05 1.84	16.75 1.41
13.40 1.08	15.10 1.85	16.80 1.42
13.45 1.18	15.15 1.86	16.85 1.40
13.50 1.26	15.20 1.87	16.90 1.36
13.55 1.33	15.25 1.87	16.95 1.29
13.60 1.39	15.30 1.88	17.00 1.21
13.65 1.43	15.35 1.89	17.05 1.14
13.70 1.45	15.40 1.90	17.10 1.08
13.75 1.46	15.45 1.90	17.15 1.03
13.80 1.47	15.50 1.91	17.20 0.99
13.85 1.48	15.55 1.92	17.25 0.97
13.90 1.49	15.60 1.93 <<	
13.95 1.50	15.65 1.91	
14.00 1.51	15.70 1.86	...End
14.05 1.52	15.75 1.78	
14.10 1.53	15.80 1.68	
14.15 1.54	15.85 1.59	
14.20 1.55	15.90 1.52	
14.25 1.56	15.95 1.46	
14.30 1.57	16.00 1.41	
14.35 1.58	16.05 1.39	
14.40 1.59	16.10 1.37	
14.45 1.60	16.15 1.38	
14.50 1.62	16.20 1.38	
14.55 1.65	16.25 1.38	
14.60 1.69	16.30 1.39	
14.65 1.72	16.35 1.39	
14.70 1.74	16.40 1.39	
14.75 1.77	16.45 1.40	
14.80 1.79	16.50 1.40	
14.85 1.80	16.55 1.40	
14.90 1.81	16.60 1.40	
14.95 1.82	16.65 1.41	
15.00 1.83	16.70 1.41	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 12

Thru Pond 5 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 10 yrs
Inflow hyd. No. = 6
Max. Elevation = 750.54 ft

Peak discharge = 0.59 cfs
Time interval = 3 min
Reservoir name = Pond 5
Max. Storage = 27,414 cuft

Storage Indication method used.

Outflow hydrograph volume = 44,636 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16.10	1.37	750.44	0.45	----	----	----	----	----	----	----	----	0.45
16.15	1.38	750.45	0.45	----	----	----	----	----	----	----	----	0.45
16.20	1.38	750.45	0.45	----	----	----	----	----	----	----	----	0.45
16.25	1.38	750.45	0.46	----	----	----	----	----	----	----	----	0.46
16.30	1.39	750.46	0.46	----	----	----	----	----	----	----	----	0.46
16.35	1.39	750.46	0.47	----	----	----	----	----	----	----	----	0.47
16.40	1.39	750.46	0.47	----	----	----	----	----	----	----	----	0.47
16.45	1.40	750.46	0.48	----	----	----	----	----	----	----	----	0.48
16.50	1.40	750.47	0.48	----	----	----	----	----	----	----	----	0.48
16.55	1.40	750.47	0.49	----	----	----	----	----	----	----	----	0.49
16.60	1.40	750.47	0.49	----	----	----	----	----	----	----	----	0.49
16.65	1.41	750.48	0.50	----	----	----	----	----	----	----	----	0.50
16.70	1.41	750.48	0.50	----	----	----	----	----	----	----	----	0.50
16.75	1.41	750.48	0.51	----	----	----	----	----	----	----	----	0.51
16.80	1.42	750.49	0.51	----	----	----	----	----	----	----	----	0.51
16.85	1.40	750.49	0.52	----	----	----	----	----	----	----	----	0.52
16.90	1.36	750.49	0.52	----	----	----	----	----	----	----	----	0.52
16.95	1.29	750.50	0.53	----	----	----	----	----	----	----	----	0.53
17.00	1.21	750.50	0.53	----	----	----	----	----	----	----	----	0.53
17.05	1.14	750.50	0.53	----	----	----	----	----	----	----	----	0.53
17.10	1.08	750.50	0.54	----	----	----	----	----	----	----	----	0.54
17.15	1.03	750.51	0.54	----	----	----	----	----	----	----	----	0.54
17.20	0.99	750.51	0.54	----	----	----	----	----	----	----	----	0.54
17.25	0.97	750.51	0.54	----	----	----	----	----	----	----	----	0.54
17.30	0.96	750.51	0.55	----	----	----	----	----	----	----	----	0.55
17.35	0.96	750.51	0.55	----	----	----	----	----	----	----	----	0.55
17.40	0.96	750.51	0.55	----	----	----	----	----	----	----	----	0.55
17.45	0.96	750.51	0.55	----	----	----	----	----	----	----	----	0.55
17.50	0.96	750.52	0.55	----	----	----	----	----	----	----	----	0.55
17.55	0.96	750.52	0.56	----	----	----	----	----	----	----	----	0.56
17.60	0.97	750.52	0.56	----	----	----	----	----	----	----	----	0.56
17.65	0.97	750.52	0.56	----	----	----	----	----	----	----	----	0.56
17.70	0.97	750.52	0.56	----	----	----	----	----	----	----	----	0.56
17.75	0.97	750.52	0.56	----	----	----	----	----	----	----	----	0.56
17.80	0.97	750.52	0.57	----	----	----	----	----	----	----	----	0.57
17.85	0.97	750.53	0.57	----	----	----	----	----	----	----	----	0.57
17.90	0.97	750.53	0.57	----	----	----	----	----	----	----	----	0.57
17.95	0.97	750.53	0.57	----	----	----	----	----	----	----	----	0.57

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Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
18.00	0.97	750.53	0.57	----	----	----	----	----	----	----	----	0.57
18.05	0.96	750.53	0.58	----	----	----	----	----	----	----	----	0.58
18.10	0.93	750.53	0.58	----	----	----	----	----	----	----	----	0.58
18.15	0.89	750.53	0.58	----	----	----	----	----	----	----	----	0.58
18.20	0.83	750.54	0.58	----	----	----	----	----	----	----	----	0.58
18.25	0.78	750.54	0.58	----	----	----	----	----	----	----	----	0.58
18.30	0.74	750.54	0.58	----	----	----	----	----	----	----	----	0.58
18.35	0.70	750.54	0.58	----	----	----	----	----	----	----	----	0.58
18.40	0.68	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.45	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.50	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.55	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.60	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.65	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.70	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.75	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.80	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.85	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.90	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
18.95	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.00	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.05	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.10	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.15	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.20	0.66	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.25	0.65	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.30	0.64	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.35	0.62	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.40	0.59	750.54 <<	0.59	----	----	----	----	----	----	----	----	0.59 <<
19.45	0.56	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.50	0.54	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.55	0.52	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.60	0.51	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.65	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.70	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.75	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.80	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.85	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.90	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
19.95	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
20.00	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
20.05	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
20.10	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
20.15	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
20.20	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
20.25	0.50	750.54	0.59	----	----	----	----	----	----	----	----	0.59
20.30	0.50	750.54	0.58	----	----	----	----	----	----	----	----	0.58
20.35	0.50	750.54	0.58	----	----	----	----	----	----	----	----	0.58
20.40	0.50	750.54	0.58	----	----	----	----	----	----	----	----	0.58
20.45	0.50	750.54	0.58	----	----	----	----	----	----	----	----	0.58
20.50	0.50	750.54	0.58	----	----	----	----	----	----	----	----	0.58

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Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:57 AM

Hyd. No. 13

Onsite 3-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 16.85 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.64 in
Storm duration = 1 hrs

Peak discharge = 11.44 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 20.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 29,488 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.35	6.01
0.40	8.00
0.45	9.65
0.50	10.75
0.55	11.33
0.60	11.44 <<
0.65	11.18
0.70	10.53
0.75	9.62
0.80	8.79
0.85	8.12
0.90	7.54
0.95	7.02
1.00	6.63
1.05	6.11

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:57 AM

Hyd. No. 18

Onsite 3-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 16.85 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 4.08 in
Storm duration = 24 hrs

Peak discharge = 5.13 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 20.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 120,980 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time -- Outflow		Time -- Outflow		Time -- Outflow	
(hrs	cfs)	(hrs	cfs)	(hrs	cfs)
13.40	2.64	15.10	4.92	16.80	3.78
13.45	2.89	15.15	4.94	16.85	3.75
13.50	3.12	15.20	4.96	16.90	3.67
13.55	3.33	15.25	4.99	16.95	3.56
13.60	3.50	15.30	5.01	17.00	3.41
13.65	3.65	15.35	5.03	17.05	3.22
13.70	3.76	15.40	5.05	17.10	3.06
13.75	3.85	15.45	5.07	17.15	2.91
13.80	3.91	15.50	5.09	17.20	2.80
13.85	3.94	15.55	5.11	17.25	2.70
13.90	3.97	15.60	5.13 <<	17.30	2.63
13.95	3.99	15.65	5.10	17.35	2.59
14.00	4.02	15.70	5.02		
14.05	4.05	15.75	4.89		
14.10	4.07	15.80	4.71	...End	
14.15	4.10	15.85	4.48		
14.20	4.12	15.90	4.27		
14.25	4.15	15.95	4.10		
14.30	4.17	16.00	3.96		
14.35	4.20	16.05	3.84		
14.40	4.22	16.10	3.76		
14.45	4.26	16.15	3.70		
14.50	4.30	16.20	3.68		
14.55	4.36	16.25	3.69		
14.60	4.43	16.30	3.70		
14.65	4.51	16.35	3.71		
14.70	4.58	16.40	3.71		
14.75	4.65	16.45	3.72		
14.80	4.71	16.50	3.73		
14.85	4.76	16.55	3.74		
14.90	4.80	16.60	3.75		
14.95	4.84	16.65	3.75		
15.00	4.87	16.70	3.76		
15.05	4.89	16.75	3.77		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:57 AM

Hyd. No. 24

Thru Pond 3 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 10 yrs
Inflow hyd. No. = 18
Max. Elevation = 750.51 ft

Peak discharge = 0.63 cfs
Time interval = 3 min
Reservoir name = Pond 3
Max. Storage = 99,023 cuft

Storage Indication method used.

Outflow hydrograph volume = 114,551 cuft

(Printed values $\geq 75\%$ of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Civ A cfs	Civ B cfs	Civ C cfs	Civ D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16.20	7.89	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
23.60	1.37	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
23.65	1.37	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
23.70	1.37	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
23.75	1.37	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
23.80	1.37	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
23.85	1.38	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
23.90	1.38	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
23.95	1.38	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.00	1.38	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.05	1.33	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.10	1.25	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.15	1.12	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.20	0.95	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.25	0.74	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63 <<
24.30	0.56	750.51 <<	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.35	0.40	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.40	0.27	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.45	0.16	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.50	0.08	750.51	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.55	0.03	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.60	0.00	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.65	0.00	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.70	0.00	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.75	0.00	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.80	0.00	750.50	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.85	0.00	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.90	0.00	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
24.95	0.00	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
25.00	0.00	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
25.05	0.00	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
25.10	0.00	750.49	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
25.15	0.00	750.48	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.63
25.20	0.00	750.48	0.63	0.63	----	----	-----	-----	-----	-----	-----	0.62
25.25	0.00	750.48	0.63	0.62	----	----	-----	-----	-----	-----	-----	0.62
25.30	0.00	750.48	0.63	0.62	----	----	-----	-----	-----	-----	-----	0.62
25.35	0.00	750.48	0.63	0.62	----	----	-----	-----	-----	-----	-----	0.62
25.40	0.00	750.48	0.63	0.62	----	----	-----	-----	-----	-----	-----	0.62
25.45	0.00	750.47	0.63	0.62	----	----	-----	-----	-----	-----	-----	0.62
25.50	0.00	750.47	0.63	0.62	----	----	-----	-----	-----	-----	-----	0.62

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	4.68	3	33	11,328	---	----	-----	Onsite 4-1 hr.
2	SCS Runoff	4.49	3	39	17,640	---	----	-----	Onsite 4-2 hr.
3	SCS Runoff	3.87	3	51	21,351	---	----	-----	Onsite 4-3 hr.
4	SCS Runoff	2.79	3	90	29,245	---	----	-----	Onsite 4-6 hr.
5	SCS Runoff	2.52	3	324	37,665	---	----	-----	Onsite 4-12 hr.
6	SCS Runoff	1.98	3	936	46,475	---	----	-----	Onsite 4-24 hr.
7	Reservoir	0.15	3	84	10,918	1	750.30	10,957	Thru Pond 4 - 1 hr.
8	Reservoir	0.26	3	141	17,157	2	750.45	16,452	Thru Pond 4 - 2 hr.
9	Reservoir	0.31	3	201	20,830	3	750.53	19,263	Thru Pond 4 - 3 hr.
10	Reservoir	0.36	3	375	28,648	4	750.66	23,998	Thru Pond 4 - 6 hr.
11	Reservoir	0.41	3	729	36,951	5	750.77	28,142	Thru Pond 4 - 12 hr.
12	Reservoir	0.44	3	1308	45,535	6	750.85	30,929	Thru Pond 4 - 24 hr.
15015 Post 4.gpw					Return Period: 10 Year			Thursday, Nov 16 2017, 8:58 AM	

Hydrograph Report

Hydraflow Hydrographs by Intellisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 1

Onsite 4-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 6.12 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 1.96 in
Storm duration = 1 hrs

Peak discharge = 4.68 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 17.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 11,328 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.35	3.16
0.40	3.91
0.45	4.41
0.50	4.67
0.55	4.68 <<
0.60	4.49
0.65	4.09
0.70	3.64
0.75	3.27
0.80	3.02
0.85	2.85
0.90	2.69
0.95	2.52
1.00	2.40

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 6

Onsite 4-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 10 yrs
Drainage area = 6.12 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 4.08 in
Storm duration = 24 hrs

Peak discharge = 1.98 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 17.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 46,475 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.35 0.99	15.05 1.89	16.75 1.45
13.40 1.11	15.10 1.90	16.80 1.45
13.45 1.21	15.15 1.91	16.85 1.43
13.50 1.29	15.20 1.92	16.90 1.39
13.55 1.37	15.25 1.92	16.95 1.33
13.60 1.42	15.30 1.93	17.00 1.24
13.65 1.46	15.35 1.94	17.05 1.17
13.70 1.49	15.40 1.95	17.10 1.11
13.75 1.50	15.45 1.96	17.15 1.06
13.80 1.51	15.50 1.96	17.20 1.02
13.85 1.52	15.55 1.97	17.25 1.00
13.90 1.53	15.60 1.98 <<	
13.95 1.54	15.65 1.96	
14.00 1.55	15.70 1.91	...End
14.05 1.56	15.75 1.83	
14.10 1.57	15.80 1.72	
14.15 1.58	15.85 1.63	
14.20 1.59	15.90 1.56	
14.25 1.60	15.95 1.50	
14.30 1.61	16.00 1.45	
14.35 1.62	16.05 1.42	
14.40 1.63	16.10 1.41	
14.45 1.65	16.15 1.41	
14.50 1.67	16.20 1.42	
14.55 1.70	16.25 1.42	
14.60 1.73	16.30 1.42	
14.65 1.76	16.35 1.43	
14.70 1.79	16.40 1.43	
14.75 1.81	16.45 1.43	
14.80 1.83	16.50 1.44	
14.85 1.85	16.55 1.44	
14.90 1.86	16.60 1.44	
14.95 1.87	16.65 1.45	
15.00 1.88	16.70 1.45	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 12

Thru Pond 4 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 10 yrs
Inflow hyd. No. = 6
Max. Elevation = 750.85 ft

Peak discharge = 0.44 cfs
Time interval = 3 min
Reservoir name = Pond 4
Max. Storage = 30,929 cuft

Storage Indication method used.

Outflow hydrograph volume = 45,535 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
20.90	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
20.95	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.00	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.05	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.10	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.15	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.20	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.25	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.30	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.35	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.40	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.45	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.50	0.52	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
21.55	0.52	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44
21.60	0.52	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44
21.65	0.51	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44
21.70	0.50	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44
21.75	0.47	750.85 <<	0.45	0.44	----	----	----	----	----	----	----	0.44
21.80	0.44	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44 <<
21.85	0.42	750.85 <<	0.45	0.44	----	----	----	----	----	----	----	0.44
21.90	0.39	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44
21.95	0.38	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44
22.00	0.36	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44
22.05	0.35	750.85	0.45	0.44	----	----	----	----	----	----	----	0.44
22.10	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.15	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.20	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.25	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.30	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.35	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.40	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.45	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.50	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.55	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.60	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44
22.65	0.35	750.84	0.45	0.44	----	----	----	----	----	----	----	0.44

Continues on next page...

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	Manual	0.47	3	81	24,232	---	----	-----	Thru Pond 5 - 1 hr.
2	Manual	0.71	3	138	34,544	---	----	-----	Thru Pond 5 - 2 hr.
3	Manual	0.82	3	195	40,991	---	----	-----	Thru Pond 5 - 3 hr.
4	Manual	0.91	3	372	52,542	---	----	-----	Thru Pond 5 - 6 hr.
5	Manual	1.00	3	561	65,054	---	----	-----	Thru Pond 5 - 12 hr.
6	Manual	1.05	3	1158	81,365	---	----	-----	Thru Pond 5 - 24 hr.
7	Manual	0.48	3	90	61,618	---	----	-----	Thru Pond 3 - 1 hr.
8	Manual	0.59	3	150	88,579	---	----	-----	Thru Pond 3 - 2 hr.
9	Manual	2.40	3	201	124,071	---	----	-----	Thru Pond 3 - 3 hr.
10	Manual	2.56	3	372	135,962	---	----	-----	Thru Pond 3 - 6 hr.
11	Manual	3.45	3	546	169,238	---	----	-----	Thru Pond 3 - 12 hr.
12	Manual	4.20	3	1083	212,440	---	----	-----	Thru Pond 3 - 24 hr.
13	SCS Runoff	22.20	3	33	55,554	---	----	-----	Onsite 2-1 hr.
14	SCS Runoff	20.50	3	42	78,964	---	----	-----	Onsite 2-2 hr.
15	SCS Runoff	17.54	3	48	93,591	---	----	-----	Onsite 2-3 hr.
16	SCS Runoff	11.55	3	57	119,804	---	----	-----	Onsite 2-6 hr.
17	SCS Runoff	9.60	3	324	148,271	---	----	-----	Onsite 2-12 hr.
18	SCS Runoff	7.40	3	936	185,580	---	----	-----	Onsite 2-24 hr.
19	Combine	22.53	3	33	141,404	1, 7, 13,	----	-----	Total to Pond 2 - 1 hr.
20	Combine	20.89	3	42	202,087	2, 8, 14,	----	-----	Total to Pond 2 - 2 hr.
21	Combine	17.94	3	48	258,653	3, 9, 15,	----	-----	Total to Pond 2 - 3 hr.
22	Combine	12.08	3	90	308,308	4, 10, 16,	----	-----	Total to Pond 2 - 6 hr.
23	Combine	10.61	3	327	382,562	5, 11, 17,	----	-----	Total to Pond 2 - 12 hr.
24	Combine	10.32	3	1008	479,385	6, 12, 18,	----	-----	Total to Pond 2 - 24 hr.
25	Reservoir	0.58	3	798	142,171	19	749.27	67,754	Thru Pond 2 - 1 hr.
26	Reservoir	0.87	3	711	204,539	20	749.81	98,308	Thru Pond 2 - 2 hr.
27	Reservoir	2.46	3	243	261,788	21	749.93	104,870	Thru Pond 2 - 3 hr.
28	Reservoir	5.59	3	375	314,280	22	750.07	113,363	Thru Pond 2 - 6 hr.
29	Reservoir	6.93	3	567	391,171	23	750.19	121,102	Thru Pond 2 - 12 hr.
30	Reservoir	7.97	3	1158	489,975	24	750.44	136,733	Thru Pond 2 - 24 hr.
15015 Post 1-2.gpw					Return Period: 100 Year			Thursday, Nov 16 2017, 9:30 AM	

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
31	SCS Runoff	60.26	3	33	150,833	---	----	----	Onsite 1-1 hr.
32	SCS Runoff	55.65	3	42	214,395	---	----	----	Onsite 1-2 hr.
33	SCS Runoff	47.61	3	48	254,108	---	----	----	Onsite 1-3 hr.
34	SCS Runoff	31.35	3	57	325,278	---	----	----	Onsite 1-6 hr.
35	SCS Runoff	26.06	3	324	402,568	---	----	----	Onsite 1-12 hr.
36	SCS Runoff	20.10	3	936	503,866	---	----	----	Onsite 1-24 hr.
37	Combine	60.48	3	33	293,003	25, 31,	----	----	Total to Pond1 - 1 hr.
38	Combine	55.90	3	42	418,933	26, 32,	----	----	Total to Pond1 - 2 hr.
39	Combine	47.85	3	48	515,896	27, 33,	----	----	Total to Pond1 - 3 hr.
40	Combine	31.58	3	81	639,559	28, 34,	----	----	Total to Pond1 - 6 hr.
41	Combine	26.59	3	324	793,740	29, 35,	----	----	Total to Pond1 - 12 hr.
42	Combine	23.72	3	942	993,841	30, 36,	----	----	Total to Pond1 - 24 hr.
43	Reservoir	7.32	3	81	284,671	37	745.52	138,216	Thru Pond 1 - 1 hr.
44	Reservoir	11.81	3	132	408,612	38	745.93	168,720	Thru Pond 1 - 2 hr.
45	Reservoir	12.54	3	168	504,096	39	746.01	175,044	Thru Pond 1 - 3 hr.
46	Reservoir	12.54	3	195	627,161	40	746.01	175,080	Thru Pond 1 - 6 hr.
47	Reservoir	14.66	3	549	780,103	41	746.29	197,162	Thru Pond 1 - 12 hr.
48	Reservoir	16.80	3	1092	976,965	42	746.60	222,896	Thru Pond 1 - 1 hr.
15015 Post 1-2.gpw					Return Period: 100 Year			Thursday, Nov 16 2017, 9:30 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:53 AM

Hyd. No. 13

Onsite 2-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Drainage area = 14.25 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.88 in
Storm duration = 1 hrs

Peak discharge = 22.20 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 21.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 55,554 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time -- Outflow
(hrs) cfs)

0.30	11.19
0.35	15.13
0.40	18.38
0.45	20.73
0.50	21.96
0.55	22.20 <<
0.60	21.59
0.65	20.34
0.70	18.44
0.75	16.39
0.80	14.65
0.85	13.31
0.90	12.22
0.95	11.27

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:53 AM

Hyd. No. 18

Onsite 2-24 hr.

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Drainage area = 14.25 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 6.00 in
Storm duration = 24 hrs

Peak discharge = 7.40 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 21.0 min
Distribution = Huff-3rd
Shape factor = 484

Hydrograph Volume = 185,580 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.35 3.84	15.05 7.19	16.75 5.32
13.40 4.16	15.10 7.21	16.80 5.32
13.45 4.55	15.15 7.23	16.85 5.28
13.50 4.90	15.20 7.25	16.90 5.17
13.55 5.21	15.25 7.27	16.95 5.01
13.60 5.47	15.30 7.29	17.00 4.80
13.65 5.68	15.35 7.31	17.05 4.53
13.70 5.85	15.40 7.33	17.10 4.29
13.75 5.97	15.45 7.35	17.15 4.09
13.80 6.05	15.50 7.37	17.20 3.92
13.85 6.08	15.55 7.38	17.25 3.79
13.90 6.10	15.60 7.40 <<	
13.95 6.13	15.65 7.35	
14.00 6.16	15.70 7.22	...End
14.05 6.18	15.75 7.03	
14.10 6.21	15.80 6.76	
14.15 6.23	15.85 6.42	
14.20 6.26	15.90 6.12	
14.25 6.28	15.95 5.86	
14.30 6.31	16.00 5.65	
14.35 6.33	16.05 5.48	
14.40 6.35	16.10 5.36	
14.45 6.39	16.15 5.28	
14.50 6.45	16.20 5.24	
14.55 6.52	16.25 5.25	
14.60 6.61	16.30 5.26	
14.65 6.72	16.35 5.26	
14.70 6.81	16.40 5.27	
14.75 6.90	16.45 5.28	
14.80 6.97	16.50 5.28	
14.85 7.03	16.55 5.29	
14.90 7.09	16.60 5.30	
14.95 7.13	16.65 5.30	
15.00 7.16	16.70 5.31	

Hydrograph Report

Hydraflow Hydrographs by Intellsolve

Thursday, Nov 16 2017, 9:30 AM

Hyd. No. 19

Total to Pond 2 - 1 hr.

Hydrograph type = Combine
Storm frequency = 100 yrs
Inflow hyds. = 1, 7, 13

Peak discharge = 22.53 cfs
Time interval = 3 min

Hydrograph Volume = 141,404 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 7 + (cfs)	Hyd. 13 + (cfs)	Outflow (cfs)
0.40	0.04	0.05	18.38	18.47
0.45	0.07	0.09	20.73	20.89
0.50	0.10	0.14	21.96	22.20
0.55	0.14	0.20	22.20 <<	22.53 <<
0.60	0.18	0.24	21.59	22.01
0.65	0.22	0.28	20.34	20.84
0.70	0.25	0.31	18.44	18.99
0.75	0.28	0.33	16.39	17.00

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 24

Total to Pond 2 - 24 hr.

Hydrograph type = Combine
Storm frequency = 100 yrs
Inflow hyds. = 6, 12, 18

Peak discharge = 11.03 cfs
Time interval = 3 min

Hydrograph Volume = 502,765 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 6 + (cfs)	Hyd. 12 + (cfs)	Hyd. 18 + (cfs)	Outflow (cfs)
14.75	0.88	0.58	6.90	8.35
14.80	0.89	0.58	6.97	8.44
14.85	0.90	0.59	7.03	8.52
14.90	0.92	0.59	7.09	8.60
14.95	0.93	0.60	7.13	8.66
15.00	0.94	0.60	7.16	8.71
15.05	0.95	0.61	7.19	8.75
15.10	0.97	0.62	7.21	8.79
15.15	0.98	0.62	7.23	8.83
15.20	0.99	0.63	7.25	8.86
15.25	1.00	0.63	7.27	8.90
15.30	1.01	0.64	7.29	8.94
15.35	1.02	0.65	7.31	8.97
15.40	1.03	0.65	7.33	9.01
15.45	1.04	0.66	7.35	9.04
15.50	1.04	0.66	7.37	9.07
15.55	1.04	0.67	7.38	9.10
15.60	1.05	0.67	7.40 <<	9.12
15.65	1.05	0.68	7.35	9.08
15.70	1.05	0.79	7.22	9.07
15.75	1.05	1.01	7.03	9.09
15.80	1.06	1.21	6.76	9.03
15.85	1.06	1.40	6.42	8.88
15.90	1.06	1.57	6.12	8.75
15.95	1.08	1.73	5.86	8.68
16.00	1.13	1.96	5.65	8.74
16.05	1.17	2.20	5.48	8.86
16.10	1.21	2.42	5.36	8.99
16.15	1.25	2.62	5.28	9.15
16.20	1.29	2.81	5.24	9.34
16.25	1.33	2.98	5.25	9.56
16.30	1.37	3.15	5.26	9.77
16.35	1.40	3.31	5.26	9.98
16.40	1.44	3.46	5.27	10.17
16.45	1.47	3.61	5.28	10.36
16.50	1.51	3.74	5.28	10.54
16.55	1.54	3.81	5.29	10.64
16.60	1.57	3.85	5.30	10.72

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Total to Pond 2 - 24 hr.

Hydrograph Discharge Table

Time (hrs)	Hyd. 6 + (cfs)	Hyd. 12 + (cfs)	Hyd. 18 + (cfs)	Outflow (cfs)
16.65	1.61	3.88	5.30	10.79
16.70	1.64	3.92	5.31	10.87
16.75	1.67	3.96	5.32	10.94
16.80	1.70	3.99	5.32	11.01
16.85	1.73	4.03	5.28	11.03 <<
16.90	1.75	4.06	5.17	10.98
16.95	1.77	4.09	5.01	10.87
17.00	1.78	4.11	4.80	10.69
17.05	1.79	4.13	4.53	10.46
17.10	1.80	4.15	4.29	10.24
17.15	1.81	4.16	4.09	10.06
17.20	1.81	4.17	3.92	9.91
17.25	1.82	4.18	3.79	9.78
17.30	1.82	4.18	3.69	9.69
17.35	1.83	4.18	3.62	9.63
17.40	1.83	4.19	3.59	9.60
17.45	1.83	4.19	3.59	9.61
17.50	1.84	4.19	3.60	9.62
17.55	1.84	4.19	3.60	9.62
17.60	1.84	4.19	3.60	9.63
17.65	1.85	4.19	3.60	9.64
17.70	1.85	4.19	3.61	9.65
17.75	1.85	4.19	3.61	9.65
17.80	1.85	4.19	3.61	9.66
17.85	1.86	4.19	3.61	9.67
17.90	1.86	4.20	3.62	9.67
17.95	1.86	4.20	3.62	9.68
18.00	1.87	4.20	3.62	9.69
18.05	1.87	4.20 <<	3.59	9.66
18.10	1.87	4.20	3.51	9.59
18.15	1.87 <<	4.20	3.40	9.48
18.20	1.87	4.19	3.26	9.32
18.25	1.87	4.19	3.07	9.13
18.30	1.87	4.18	2.91	8.95
18.35	1.86	4.16	2.77	8.80
18.40	1.85	4.15	2.66	8.66
18.45	1.85	4.13	2.57	8.55
18.50	1.84	4.12	2.50	8.45
18.55	1.83	4.10	2.45	8.38
18.60	1.82	4.08	2.43	8.33
18.65	1.82	4.06	2.43	8.31
18.70	1.81	4.04	2.43	8.29

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:30 AM

Hyd. No. 30

Thru Pond 2 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Inflow hyd. No. = 24
Max. Elevation = 750.34 ft

Peak discharge = 7.66 cfs
Time interval = 3 min
Reservoir name = Pond 2
Max. Storage = 130,694 cuft

Storage Indication method used.

Outflow hydrograph volume = 466,709 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16.15	8.85	750.08	5.76	0.33	----	----	5.43	----	----	----	----	5.76
16.20	9.00	750.09	5.95	0.32	----	----	5.64	----	----	----	----	5.95
16.25	9.19	750.10	6.15	0.30	----	----	5.85	----	----	----	----	6.15
16.30	9.37	750.11	6.25	0.29	----	----	5.96	----	----	----	----	6.25
16.35	9.54	750.12	6.32	0.28	----	----	6.04	----	----	----	----	6.32
16.40	9.71	750.12	6.39	0.28	----	----	6.12	----	----	----	----	6.39
16.45	9.86	750.13	6.47	0.27	----	----	6.20	----	----	----	----	6.46
16.50	10.01	750.14	6.54	0.26	----	----	6.28	----	----	----	----	6.54
16.55	10.09	750.15	6.62	0.25	----	----	6.36	----	----	----	----	6.62
16.60	10.14	750.16	6.69	0.24	----	----	6.45	----	----	----	----	6.69
16.65	10.18	750.17	6.77	0.24	----	----	6.53	----	----	----	----	6.77
16.70	10.23	750.18	6.84	0.23	----	----	6.61	----	----	----	----	6.84
16.75	10.28	750.19	6.91	0.22	----	----	6.69	----	----	----	----	6.91
16.80	10.32 <<	750.20	6.98	0.22	----	----	6.77	----	----	----	----	6.98
16.85	10.32	750.21	7.03	0.21	----	----	6.82	----	----	----	----	7.03
16.90	10.25	750.22	7.08	0.21	----	----	6.87	----	----	----	----	7.08
16.95	10.12	750.23	7.12	0.20	----	----	6.92	----	----	----	----	7.12
17.00	9.94	750.24	7.16	0.20	----	----	6.96	----	----	----	----	7.16
17.05	9.69	750.24	7.20	0.20	----	----	7.01	----	----	----	----	7.20
17.10	9.48	750.25	7.24	0.19	----	----	7.04	----	----	----	----	7.24
17.15	9.29	750.26	7.27	0.19	----	----	7.08	----	----	----	----	7.27
17.20	9.13	750.26	7.30	0.19	----	----	7.11	----	----	----	----	7.29
17.25	9.00	750.27	7.32	0.18	----	----	7.13	----	----	----	----	7.32
17.30	8.91	750.27	7.34	0.18	----	----	7.16	----	----	----	----	7.34
17.35	8.84	750.28	7.37	0.18	----	----	7.18	----	----	----	----	7.36
17.40	8.81	750.28	7.39	0.18	----	----	7.21	----	----	----	----	7.39
17.45	8.82	750.28	7.41	0.18	----	----	7.23	----	----	----	----	7.41
17.50	8.82	750.29	7.43	0.18	----	----	7.25	----	----	----	----	7.43
17.55	8.83	750.29	7.45	0.17	----	----	7.27	----	----	----	----	7.45
17.60	8.83	750.30	7.47	0.17	----	----	7.29	----	----	----	----	7.47
17.65	8.83	750.30	7.49	0.17	----	----	7.32	----	----	----	----	7.48
17.70	8.84	750.30	7.50	0.17	----	----	7.33	----	----	----	----	7.50
17.75	8.84	750.31	7.52	0.17	----	----	7.35	----	----	----	----	7.51
17.80	8.85	750.31	7.53	0.17	----	----	7.36	----	----	----	----	7.53
17.85	8.85	750.31	7.55	0.17	----	----	7.38	----	----	----	----	7.54
17.90	8.86	750.32	7.56	0.16	----	----	7.39	----	----	----	----	7.56
17.95	8.86	750.32	7.58	0.16	----	----	7.41	----	----	----	----	7.57
18.00	8.86	750.33	7.59	0.16	----	----	7.42	----	----	----	----	7.59

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
18.05	8.83	750.33	7.60	0.16	----	----	7.44	----	----	----	----	7.60
18.10	8.76	750.33	7.62	0.16	----	----	7.45	----	----	----	----	7.61
18.15	8.65	750.34	7.63	0.16	----	----	7.47	----	----	----	----	7.63
18.20	8.50	750.34	7.64	0.16	----	----	7.48	----	----	----	----	7.64
18.25	8.31	750.34	7.65	0.16	----	----	7.49	----	----	----	----	7.64
18.30	8.13	750.34	7.65	0.16	----	----	7.49	----	----	----	----	7.65
18.35	7.98	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.65
18.40	7.85	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.66
18.45	7.75	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.66
18.50	7.66	750.34 <<	7.66	0.16	----	----	7.50	----	----	----	----	7.66 <<
18.55	7.60	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.66
18.60	7.56	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.66
18.65	7.54	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.66
18.70	7.52	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.66
18.75	7.51	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.65
18.80	7.49	750.34	7.66	0.16	----	----	7.50	----	----	----	----	7.65
18.85	7.47	750.34	7.66	0.16	----	----	7.49	----	----	----	----	7.65
18.90	7.46	750.34	7.65	0.16	----	----	7.49	----	----	----	----	7.65
18.95	7.44	750.34	7.65	0.16	----	----	7.49	----	----	----	----	7.65
19.00	7.43	750.34	7.65	0.16	----	----	7.49	----	----	----	----	7.64
19.05	7.41	750.34	7.65	0.16	----	----	7.48	----	----	----	----	7.64
19.10	7.40	750.34	7.64	0.16	----	----	7.48	----	----	----	----	7.64
19.15	7.38	750.34	7.64	0.16	----	----	7.48	----	----	----	----	7.64
19.20	7.37	750.34	7.64	0.16	----	----	7.48	----	----	----	----	7.63
19.25	7.33	750.34	7.63	0.16	----	----	7.47	----	----	----	----	7.63
19.30	7.28	750.34	7.63	0.16	----	----	7.47	----	----	----	----	7.63
19.35	7.21	750.33	7.63	0.16	----	----	7.46	----	----	----	----	7.62
19.40	7.12	750.33	7.62	0.16	----	----	7.46	----	----	----	----	7.62
19.45	7.01	750.33	7.62	0.16	----	----	7.45	----	----	----	----	7.61
19.50	6.90	750.33	7.61	0.16	----	----	7.44	----	----	----	----	7.60
19.55	6.76	750.33	7.60	0.16	----	----	7.43	----	----	----	----	7.60
19.60	6.63	750.33	7.59	0.16	----	----	7.42	----	----	----	----	7.59
19.65	6.51	750.32	7.58	0.16	----	----	7.41	----	----	----	----	7.57
19.70	6.41	750.32	7.57	0.16	----	----	7.40	----	----	----	----	7.56
19.75	6.32	750.32	7.55	0.16	----	----	7.38	----	----	----	----	7.55
19.80	6.24	750.31	7.54	0.17	----	----	7.37	----	----	----	----	7.54
19.85	6.18	750.31	7.52	0.17	----	----	7.35	----	----	----	----	7.52
19.90	6.12	750.31	7.51	0.17	----	----	7.34	----	----	----	----	7.51
19.95	6.07	750.30	7.49	0.17	----	----	7.32	----	----	----	----	7.49
20.00	6.02	750.30	7.47	0.17	----	----	7.30	----	----	----	----	7.47
20.05	5.97	750.29	7.45	0.17	----	----	7.28	----	----	----	----	7.45
20.10	5.92	750.29	7.43	0.17	----	----	7.25	----	----	----	----	7.43
20.15	5.87	750.28	7.41	0.18	----	----	7.23	----	----	----	----	7.41
20.20	5.83	750.28	7.39	0.18	----	----	7.21	----	----	----	----	7.38
20.25	5.79	750.28	7.36	0.18	----	----	7.18	----	----	----	----	7.36
20.30	5.76	750.27	7.34	0.18	----	----	7.16	----	----	----	----	7.34
20.35	5.72	750.27	7.32	0.18	----	----	7.13	----	----	----	----	7.32
20.40	5.69	750.26	7.30	0.19	----	----	7.11	----	----	----	----	7.29
20.45	5.66	750.26	7.27	0.19	----	----	7.08	----	----	----	----	7.27
20.50	5.63	750.25	7.25	0.19	----	----	7.06	----	----	----	----	7.25
20.55	5.60	750.25	7.23	0.19	----	----	7.03	----	----	----	----	7.22

Continues on next page...

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 31

Onsite 1-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Drainage area = 38.69 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.88 in
Storm duration = 1 hrs

Peak discharge = 60.26 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 24.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 150,833 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.30	30.39
0.35	41.07
0.40	49.91
0.45	56.28
0.50	59.62
0.55	60.26 <<
0.60	58.62
0.65	55.24
0.70	50.06
0.75	44.49
0.80	39.77
0.85	36.14
0.90	33.18
0.95	30.59

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:54 AM

Hyd. No. 36

Onsite 1-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 20.10 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 38.69 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 24.0 min
Total precip.	= 6.00 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 503,866 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.35	10.43	15.05
13.40	11.29	15.10
13.45	12.36	15.15
13.50	13.31	15.20
13.55	14.14	15.25
13.60	14.85	15.30
13.65	15.43	15.35
13.70	15.89	15.40
13.75	16.22	15.45
13.80	16.42	15.50
13.85	16.50	15.55
13.90	16.57	15.60
13.95	16.65	15.65
14.00	16.72	15.70
14.05	16.79	15.75
14.10	16.86	15.80
14.15	16.93	15.85
14.20	16.99	15.90
14.25	17.06	15.95
14.30	17.12	16.00
14.35	17.19	16.05
14.40	17.25	16.10
14.45	17.36	16.15
14.50	17.51	16.20
14.55	17.70	16.25
14.60	17.95	16.30
14.65	18.23	16.35
14.70	18.49	16.40
14.75	18.72	16.45
14.80	18.93	16.50
14.85	19.10	16.55
14.90	19.25	16.60
14.95	19.36	16.65
15.00	19.45	16.70
		16.75
		16.80
		16.85
		16.90
		16.95
		17.00
		17.05
		17.10
		17.15
		17.20
		17.25
		14.44
		14.46
		14.32
		14.04
		13.61
		13.03
		12.30
		11.66
		11.11
		10.65
		10.29
		20.10 <<
		19.95
		19.62
		19.08
		18.35
		17.42
		16.61
		15.92
		15.34
		14.89
		14.55
		14.33
		14.23
		14.25
		14.27
		14.29
		14.31
		14.33
		14.35
		14.36
		14.38
		14.40
		14.42
		...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:33 AM

Hyd. No. 37

Total to Pond1 - 1 hr.

Hydrograph type = Combine
Storm frequency = 100 yrs
Inflow hyds. = 25, 31

Peak discharge = 60.48 cfs
Time interval = 3 min

Hydrograph Volume = 286,114 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 25 + (cfs)	Hyd. 31 + (cfs)	Outflow (cfs)
0.40	0.06	49.91	49.97
0.45	0.10	56.28	56.38
0.50	0.16	59.62	59.78
0.55	0.22	60.26 <<	60.48 <<
0.60	0.26	58.62	58.88
0.65	0.30	55.24	55.54
0.70	0.33	50.06	50.39

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:33 AM

Hyd. No. 42

Total to Pond1 - 24 hr.

Hydrograph type = Combine
Storm frequency = 100 yrs
Inflow hyds. = 30, 36

Peak discharge = 23.06 cfs
Time interval = 3 min

Hydrograph Volume = 970,573 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
14.05	0.56	16.79	17.35
14.10	0.56	16.86	17.42
14.15	0.57	16.93	17.50
14.20	0.58	16.99	17.57
14.25	0.58	17.06	17.64
14.30	0.59	17.12	17.71
14.35	0.60	17.19	17.78
14.40	0.60	17.25	17.85
14.45	0.61	17.36	17.97
14.50	0.62	17.51	18.12
14.55	0.62	17.70	18.33
14.60	0.63	17.95	18.57
14.65	0.63	18.23	18.87
14.70	0.64	18.49	19.13
14.75	0.65	18.72	19.37
14.80	0.65	18.93	19.58
14.85	0.66	19.10	19.76
14.90	0.67	19.25	19.91
14.95	0.67	19.36	20.04
15.00	0.68	19.45	20.13
15.05	0.69	19.51	20.20
15.10	0.69	19.57	20.26
15.15	0.70	19.63	20.32
15.20	0.70	19.68	20.39
15.25	0.71	19.74	20.45
15.30	0.72	19.79	20.51
15.35	0.97	19.84	20.81
15.40	1.23	19.90	21.12
15.45	1.48	19.95	21.43
15.50	1.72	20.00	21.72
15.55	2.16	20.05	22.21
15.60	2.62	20.10 <<	22.72
15.65	3.05	19.95	23.00
15.70	3.45	19.62	23.06 <<
15.75	3.82	19.08	22.90
15.80	4.14	18.35	22.49
15.85	4.43	17.42	21.85
15.90	4.69	16.61	21.30

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Total to Pond1 - 24 hr.

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
15.95	4.93	15.92	20.85
16.00	5.15	15.34	20.49
16.05	5.36	14.89	20.25
16.10	5.56	14.55	20.11
16.15	5.76	14.33	20.09
16.20	5.95	14.23	20.18
16.25	6.15	14.25	20.39
16.30	6.25	14.27	20.52
16.35	6.32	14.29	20.61
16.40	6.39	14.31	20.70
16.45	6.46	14.33	20.79
16.50	6.54	14.35	20.89
16.55	6.62	14.36	20.98
16.60	6.69	14.38	21.07
16.65	6.77	14.40	21.17
16.70	6.84	14.42	21.26
16.75	6.91	14.44	21.35
16.80	6.98	14.46	21.44
16.85	7.03	14.32	21.36
16.90	7.08	14.04	21.12
16.95	7.12	13.61	20.73
17.00	7.16	13.03	20.19
17.05	7.20	12.30	19.50
17.10	7.24	11.66	18.89
17.15	7.27	11.11	18.37
17.20	7.29	10.65	17.94
17.25	7.32	10.29	17.60
17.30	7.34	10.01	17.36
17.75	7.51	9.80	17.31
17.80	7.53	9.80	17.33
17.85	7.54	9.81	17.35
17.90	7.56	9.82	17.38
17.95	7.57	9.82	17.40
18.00	7.59	9.83	17.42
18.05	7.60	9.74	17.34

...End

Hydrograph Report

Hydraflow Hydrographs by Intellisolve

Thursday, Nov 16 2017, 9:34 AM

Hyd. No. 48

Thru Pond 1 - 1 hr.

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Inflow hyd. No. = 42
Max. Elevation = 746.58 ft

Peak discharge = 16.63 cfs
Time interval = 3 min
Reservoir name = Pond 1
Max. Storage = 220,812 cuft

Storage Indication method used.

Outflow hydrograph volume = 953,825 cuft

Hydrograph Discharge Table

(Printed values >= 75% of Qp.)

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
15.25	20.45	746.02	12.59	----	----	----	----	----	----	----	----	12.59
15.30	20.51	746.04	12.73	----	----	----	----	----	----	----	----	12.73
15.35	20.81	746.05	12.88	----	----	----	----	----	----	----	----	12.88
15.40	21.12	746.07	13.02	----	----	----	----	----	----	----	----	13.02
15.45	21.43	746.09	13.17	----	----	----	----	----	----	----	----	13.17
15.50	21.72	746.11	13.32	----	----	----	----	----	----	----	----	13.32
15.55	22.21	746.13	13.47	----	----	----	----	----	----	----	----	13.47
15.60	22.72	746.15	13.62	----	----	----	----	----	----	----	----	13.62
15.65	23.00	746.17	13.78	----	----	----	----	----	----	----	----	13.78
15.70	23.06 <<	746.19	13.94	----	----	----	----	----	----	----	----	13.94
15.75	22.90	746.21	14.09	----	----	----	----	----	----	----	----	14.09
15.80	22.49	746.23	14.23	----	----	----	----	----	----	----	----	14.23
15.85	21.85	746.24	14.36	----	----	----	----	----	----	----	----	14.36
15.90	21.30	746.26	14.47	----	----	----	----	----	----	----	----	14.47
15.95	20.85	746.28	14.58	----	----	----	----	----	----	----	----	14.58
16.00	20.49	746.29	14.68	----	----	----	----	----	----	----	----	14.68
16.05	20.25	746.30	14.77	----	----	----	----	----	----	----	----	14.77
16.10	20.11	746.31	14.85	----	----	----	----	----	----	----	----	14.85
16.15	20.09	746.33	14.94	----	----	----	----	----	----	----	----	14.94
16.20	20.18	746.34	15.02	----	----	----	----	----	----	----	----	15.02
16.25	20.39	746.35	15.10	----	----	----	----	----	----	----	----	15.10
16.30	20.52	746.36	15.18	----	----	----	----	----	----	----	----	15.18
16.35	20.61	746.37	15.26	----	----	----	----	----	----	----	----	15.26
16.40	20.70	746.38	15.35	----	----	----	----	----	----	----	----	15.35
16.45	20.79	746.40	15.43	----	----	----	----	----	----	----	----	15.43
16.50	20.89	746.41	15.51	----	----	----	----	----	----	----	----	15.51
16.55	20.98	746.42	15.59	----	----	----	----	----	----	----	----	15.59
16.60	21.07	746.43	15.67	----	----	----	----	----	----	----	----	15.67
16.65	21.17	746.44	15.75	----	----	----	----	----	----	----	----	15.75
16.70	21.26	746.46	15.83	----	----	----	----	----	----	----	----	15.83
16.75	21.35	746.47	15.91	----	----	----	----	----	----	----	----	15.91
16.80	21.44	746.48	15.99	----	----	----	----	----	----	----	----	15.99
16.85	21.36	746.49	16.07	----	----	----	----	----	----	----	----	16.07
16.90	21.12	746.50	16.15	----	----	----	----	----	----	----	----	16.15
16.95	20.73	746.51	16.22	----	----	----	----	----	----	----	----	16.22
17.00	20.19	746.52	16.28	----	----	----	----	----	----	----	----	16.28
17.05	19.50	746.53	16.33	----	----	----	----	----	----	----	----	16.33
17.10	18.89	746.54	16.37	----	----	----	----	----	----	----	----	16.37

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Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
17.15	18.37	746.54	16.40	----	----	----	----	----	----	----	----	16.40
17.20	17.94	746.55	16.43	----	----	----	----	----	----	----	----	16.43
17.25	17.60	746.55	16.45	----	----	----	----	----	----	----	----	16.44
17.30	17.36	746.55	16.46	----	----	----	----	----	----	----	----	16.46
17.35	17.20	746.55	16.47	----	----	----	----	----	----	----	----	16.47
17.40	17.13	746.56	16.48	----	----	----	----	----	----	----	----	16.48
17.45	17.16	746.56	16.49	----	----	----	----	----	----	----	----	16.49
17.50	17.19	746.56	16.50	----	----	----	----	----	----	----	----	16.50
17.55	17.22	746.56	16.51	----	----	----	----	----	----	----	----	16.51
17.60	17.24	746.56	16.52	----	----	----	----	----	----	----	----	16.52
17.65	17.27	746.56	16.53	----	----	----	----	----	----	----	----	16.53
17.70	17.29	746.56	16.54	----	----	----	----	----	----	----	----	16.54
17.75	17.31	746.57	16.55	----	----	----	----	----	----	----	----	16.55
17.80	17.33	746.57	16.56	----	----	----	----	----	----	----	----	16.56
17.85	17.35	746.57	16.57	----	----	----	----	----	----	----	----	16.57
17.90	17.38	746.57	16.59	----	----	----	----	----	----	----	----	16.59
17.95	17.40	746.57	16.60	----	----	----	----	----	----	----	----	16.60
18.00	17.42	746.58	16.61	----	----	----	----	----	----	----	----	16.61
18.05	17.34	746.58	16.62	----	----	----	----	----	----	----	----	16.62
18.10	17.15	746.58	16.63	----	----	----	----	----	----	----	----	16.63
18.15	16.87	746.58	16.63	----	----	----	----	----	----	----	----	16.63
18.20	16.48	746.58 <<	16.63	----	----	----	----	----	----	----	----	16.63 <<
18.25	15.99	746.58	16.63	----	----	----	----	----	----	----	----	16.63
18.30	15.55	746.58	16.62	----	----	----	----	----	----	----	----	16.62
18.35	15.18	746.57	16.60	----	----	----	----	----	----	----	----	16.60
18.40	14.87	746.57	16.58	----	----	----	----	----	----	----	----	16.58
18.45	14.63	746.57	16.55	----	----	----	----	----	----	----	----	16.55
18.50	14.44	746.56	16.52	----	----	----	----	----	----	----	----	16.52
18.55	14.32	746.56	16.49	----	----	----	----	----	----	----	----	16.49
18.60	14.25	746.55	16.46	----	----	----	----	----	----	----	----	16.46
18.65	14.26	746.55	16.43	----	----	----	----	----	----	----	----	16.43
18.70	14.26	746.54	16.40	----	----	----	----	----	----	----	----	16.40
18.75	14.26	746.54	16.37	----	----	----	----	----	----	----	----	16.37
18.80	14.26	746.53	16.34	----	----	----	----	----	----	----	----	16.34
18.85	14.26	746.53	16.31	----	----	----	----	----	----	----	----	16.31
18.90	14.26	746.52	16.28	----	----	----	----	----	----	----	----	16.28
18.95	14.26	746.52	16.25	----	----	----	----	----	----	----	----	16.25
19.00	14.26	746.51	16.22	----	----	----	----	----	----	----	----	16.22
19.05	14.26	746.51	16.19	----	----	----	----	----	----	----	----	16.19
19.10	14.26	746.51	16.17	----	----	----	----	----	----	----	----	16.17
19.15	14.26	746.50	16.14	----	----	----	----	----	----	----	----	16.14
19.20	14.26	746.50	16.11	----	----	----	----	----	----	----	----	16.11
19.25	14.21	746.49	16.09	----	----	----	----	----	----	----	----	16.09
19.30	14.11	746.49	16.06	----	----	----	----	----	----	----	----	16.06
19.35	13.95	746.48	16.03	----	----	----	----	----	----	----	----	16.03
19.40	13.75	746.48	15.99	----	----	----	----	----	----	----	----	15.99
19.45	13.49	746.47	15.96	----	----	----	----	----	----	----	----	15.96
19.50	13.26	746.47	15.92	----	----	----	----	----	----	----	----	15.92
19.55	13.06	746.46	15.88	----	----	----	----	----	----	----	----	15.88
19.60	12.89	746.46	15.84	----	----	----	----	----	----	----	----	15.84
19.65	12.75	746.45	15.79	----	----	----	----	----	----	----	----	15.79

Continues on next page...

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	10.48	3	30	24,576	---	----	-----	Onsite 5-1 hr.
2	SCS Runoff	9.38	3	36	34,932	---	----	-----	Onsite 5-2 hr.
3	SCS Runoff	7.82	3	45	41,402	---	----	-----	Onsite 5-3 hr.
4	SCS Runoff	5.16	3	48	52,998	---	----	-----	Onsite 5-6 hr.
5	SCS Runoff	4.28	3	324	65,591	---	----	-----	Onsite 5-12 hr.
6	SCS Runoff	3.28	3	936	82,096	---	----	-----	Onsite 5-24 hr.
7	Reservoir	0.47	3	81	24,232	1	750.46	23,350	Thru Pond 5 - 1 hr.
8	Reservoir	0.71	3	138	34,544	2	750.62	31,599	Thru Pond 5 - 2 hr.
9	Reservoir	0.82	3	195	40,991	3	750.70	35,631	Thru Pond 5 - 3 hr.
10	Reservoir	0.91	3	372	52,542	4	750.78	39,317	Thru Pond 5 - 6 hr.
11	Reservoir	1.00	3	561	65,054	5	750.86	43,267	Thru Pond 5 - 12 hr.
12	Reservoir	1.05	3	1158	81,365	6	750.94	47,656	Thru Pond 5 - 24 hr.
13	SCS Runoff	26.24	3	33	65,690	---	----	-----	Onsite 3-1 hr.
14	SCS Runoff	24.24	3	42	93,372	---	----	-----	Onsite 3-2 hr.
15	SCS Runoff	24.28	3	48	129,583	---	----	-----	Onsite 3-3 hr.
16	SCS Runoff	13.65	3	57	141,663	---	----	-----	Onsite 3-6 hr.
17	SCS Runoff	11.35	3	324	175,324	---	----	-----	Onsite 3-12 hr.
18	SCS Runoff	8.75	3	936	219,440	---	----	-----	Onsite 3-24 hr.
19	Reservoir	0.48	3	90	61,618	13	749.99	64,142	Thru Pond 3 - 1 hr.
20	Reservoir	0.59	3	150	88,579	14	750.38	89,973	Thru Pond 3 - 2 hr.
21	Reservoir	2.40	3	201	124,071	15	750.83	120,750	Thru Pond 3 - 3 hr.
22	Reservoir	2.56	3	372	135,962	16	750.84	121,276	Thru Pond 3 - 6 hr.
23	Reservoir	3.45	3	546	169,238	17	750.88	124,281	Thru Pond 3 - 12 hr.
24	Reservoir	4.20	3	1083	212,440	18	750.97	130,313	Thru Pond 3 - 24 hr.
15015 Post 3-5.gpw					Return Period: 100 Year			Thursday, Nov 16 2017, 9:24 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 1

Onsite 5-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Drainage area = 5.96 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 2.88 in
Storm duration = 1 hrs

Peak discharge = 10.48 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 18.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 24,576 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.30	6.81
0.35	8.59
0.40	9.80
0.45	10.40
0.50	10.48 <<
0.55	10.04
0.60	9.20
0.65	8.12
0.70	7.06
0.75	6.24
0.80	5.67
0.85	5.30

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 6

Onsite 5-24 hr.

Hydrograph type	=	SCS Runoff	Peak discharge	=	3.28 cfs
Storm frequency	=	100 yrs	Time interval	=	3 min
Drainage area	=	5.96 ac	Curve number	=	79
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	USER	Time of conc. (Tc)	=	18.0 min
Total precip.	=	6.00 in	Distribution	=	Huff-3rd
Storm duration	=	24 hrs	Shape factor	=	484

Hydrograph Volume = 82,096 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.30 1.65	15.00 3.18	16.70 2.35
13.35 1.80	15.05 3.19	16.75 2.36
13.40 2.01	15.10 3.20	16.80 2.36
13.45 2.18	15.15 3.21	16.85 2.33
13.50 2.33	15.20 3.22	16.90 2.26
13.55 2.46	15.25 3.22	16.95 2.15
13.60 2.55	15.30 3.23	17.00 2.01
13.65 2.62	15.35 3.24	17.05 1.89
13.70 2.66	15.40 3.25	17.10 1.79
13.75 2.68	15.45 3.26	17.15 1.71
13.80 2.69	15.50 3.27	17.20 1.65
13.85 2.70	15.55 3.27	
13.90 2.71	15.60 3.28 <<	
13.95 2.72	15.65 3.24	...End
14.00 2.74	15.70 3.16	
14.05 2.75	15.75 3.03	
14.10 2.76	15.80 2.85	
14.15 2.77	15.85 2.69	
14.20 2.78	15.90 2.57	
14.25 2.79	15.95 2.46	
14.30 2.80	16.00 2.39	
14.35 2.81	16.05 2.34	
14.40 2.82	16.10 2.32	
14.45 2.84	16.15 2.32	
14.50 2.87	16.20 2.32	
14.55 2.92	16.25 2.32	
14.60 2.97	16.30 2.33	
14.65 3.02	16.35 2.33	
14.70 3.06	16.40 2.33	
14.75 3.09	16.45 2.34	
14.80 3.12	16.50 2.34	
14.85 3.14	16.55 2.34	
14.90 3.16	16.60 2.35	
14.95 3.17	16.65 2.35	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 9:24 AM

Hyd. No. 12

Thru Pond 5 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Inflow hyd. No. = 6
Max. Elevation = 750.94 ft

Peak discharge = 1.05 cfs
Time interval = 3 min
Reservoir name = Pond 5
Max. Storage = 47,656 cuft

Storage Indication method used.

Outflow hydrograph volume = 81,365 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
15.25	3.22	750.68	0.79	----	----	----	----	----	----	----	----	0.79
15.30	3.23	750.69	0.80	----	----	----	----	----	----	----	----	0.80
15.35	3.24	750.69	0.81	----	----	----	----	----	----	----	----	0.81
15.40	3.25	750.70	0.82	----	----	----	----	----	----	----	----	0.82
15.45	3.26	750.71	0.83	----	----	----	----	----	----	----	----	0.83
15.50	3.27	750.72	0.84	----	----	----	----	----	----	----	----	0.84
15.55	3.27	750.73	0.85	----	----	----	----	----	----	----	----	0.85
15.60	3.28 <<	750.74	0.86	----	----	----	----	----	----	----	----	0.86
15.65	3.24	750.75	0.88	----	----	----	----	----	----	----	----	0.88
15.70	3.16	750.75	0.89	----	----	----	----	----	----	----	----	0.89
15.75	3.03	750.76	0.90	----	----	----	----	----	----	----	----	0.90
15.80	2.85	750.77	0.90	----	----	----	----	----	----	----	----	0.90
15.85	2.69	750.78	0.91	----	----	----	----	----	----	----	----	0.91
15.90	2.57	750.78	0.92	----	----	----	----	----	----	----	----	0.92
15.95	2.46	750.79	0.93	----	----	----	----	----	----	----	----	0.93
16.00	2.39	750.79	0.93	----	----	----	----	----	----	----	----	0.93
16.05	2.34	750.80	0.94	----	----	----	----	----	----	----	----	0.94
16.10	2.32	750.80	0.95	----	----	----	----	----	----	----	----	0.95
16.15	2.32	750.81	0.95	----	----	----	----	----	----	----	----	0.95
16.20	2.32	750.81	0.95	----	----	----	----	----	----	----	----	0.95
16.25	2.32	750.82	0.96	----	----	----	----	----	----	----	----	0.96
16.30	2.33	750.82	0.96	----	----	----	----	----	----	----	----	0.96
16.35	2.33	750.83	0.97	----	----	----	----	----	----	----	----	0.97
16.40	2.33	750.83	0.97	----	----	----	----	----	----	----	----	0.97
16.45	2.34	750.84	0.98	----	----	----	----	----	----	----	----	0.98
16.50	2.34	750.84	0.98	----	----	----	----	----	----	----	----	0.98
16.55	2.34	750.85	0.99	----	----	----	----	----	----	----	----	0.99
16.60	2.35	750.85	0.99	----	----	----	----	----	----	----	----	0.99
16.65	2.35	750.86	1.00	----	----	----	----	----	----	----	----	1.00
16.70	2.35	750.86	1.00	----	----	----	----	----	----	----	----	1.00
16.75	2.36	750.87	1.01	----	----	----	----	----	----	----	----	1.01
16.80	2.36	750.87	1.01	----	----	----	----	----	----	----	----	1.01
16.85	2.33	750.88	1.01	----	----	----	----	----	----	----	----	1.01
16.90	2.26	750.88	1.02	----	----	----	----	----	----	----	----	1.02
16.95	2.15	750.88	1.02	----	----	----	----	----	----	----	----	1.02
17.00	2.01	750.89	1.03	----	----	----	----	----	----	----	----	1.03
17.05	1.89	750.89	1.03	----	----	----	----	----	----	----	----	1.03
17.10	1.79	750.89	1.03	----	----	----	----	----	----	----	----	1.03

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
17.15	1.71	750.90	1.03	----	----	----	----	----	----	----	----	1.03
17.20	1.65	750.90	1.04	----	----	----	----	----	----	----	----	1.04
17.25	1.61	750.90	1.04	----	----	----	----	----	----	----	----	1.04
17.30	1.59	750.90	1.04	----	----	----	----	----	----	----	----	1.04
17.35	1.59	750.91	1.04	----	----	----	----	----	----	----	----	1.04
17.40	1.59	750.91	1.04	----	----	----	----	----	----	----	----	1.04
17.45	1.59	750.91	1.04	----	----	----	----	----	----	----	----	1.04
17.50	1.59	750.91	1.04	----	----	----	----	----	----	----	----	1.04
17.55	1.59	750.91	1.04	----	----	----	----	----	----	----	----	1.04
17.60	1.59	750.92	1.04	----	----	----	----	----	----	----	----	1.04
17.65	1.60	750.92	1.04	----	----	----	----	----	----	----	----	1.04
17.70	1.60	750.92	1.04	----	----	----	----	----	----	----	----	1.04
17.75	1.60	750.92	1.04	----	----	----	----	----	----	----	----	1.04
17.80	1.60	750.92	1.04	----	----	----	----	----	----	----	----	1.04
17.85	1.60	750.93	1.04	----	----	----	----	----	----	----	----	1.04
17.90	1.60	750.93	1.04	----	----	----	----	----	----	----	----	1.04
17.95	1.60	750.93	1.04	----	----	----	----	----	----	----	----	1.04
18.00	1.60	750.93	1.04	----	----	----	----	----	----	----	----	1.04
18.05	1.58	750.93	1.04	----	----	----	----	----	----	----	----	1.04
18.10	1.53	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.15	1.46	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.20	1.36	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.25	1.28	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.30	1.21	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.35	1.16	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.40	1.12	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.45	1.09	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.50	1.07	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.55	1.07	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.60	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.65	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.70	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.75	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.80	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.85	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.90	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
18.95	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.00	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.05	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.10	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.15	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.20	1.08	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.25	1.07	750.94 <<	1.05	----	----	----	----	----	----	----	----	1.05
19.30	1.04	750.94 <<	1.05	----	----	----	----	----	----	----	----	1.05 <<
19.35	1.01	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.40	0.96	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.45	0.92	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.50	0.88	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.55	0.85	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.60	0.83	750.94	1.05	----	----	----	----	----	----	----	----	1.05
19.65	0.82	750.94	1.05	----	----	----	----	----	----	----	----	1.05

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Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:57 AM

Hyd. No. 13

Onsite 3-1 hr.

Hydrograph type = SCS Runoff
Storm frequency = 100 yrs
Drainage area = 16.85 ac
Basin Slope = 0.0 %
Tc method = USER
Total precip. = 3.87 in
Storm duration = 1 hrs

Peak discharge = 26.24 cfs
Time interval = 3 min
Curve number = 79
Hydraulic length = 0 ft
Time of conc. (Tc) = 20.0 min
Distribution = Huff-1st
Shape factor = 484

Hydrograph Volume = 65,690 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.30	13.24
0.35	17.89
0.40	21.73
0.45	24.51
0.50	25.97
0.55	26.24 <<
0.60	25.53
0.65	24.06
0.70	21.80
0.75	19.38
0.80	17.32
0.85	15.74
0.90	14.45
0.95	13.32

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:57 AM

Hyd. No. 18

Onsite 3-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 8.75 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 16.85 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20.0 min
Total precip.	= 6.00 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 219,440 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)	Time -- Outflow (hrs cfs)
13.35 4.54	15.05 8.50	16.75 6.29
13.40 4.92	15.10 8.52	16.80 6.30
13.45 5.38	15.15 8.55	16.85 6.24
13.50 5.80	15.20 8.57	16.90 6.12
13.55 6.16	15.25 8.60	16.95 5.93
13.60 6.47	15.30 8.62	17.00 5.67
13.65 6.72	15.35 8.64	17.05 5.36
13.70 6.92	15.40 8.67	17.10 5.08
13.75 7.06	15.45 8.69	17.15 4.84
13.80 7.15	15.50 8.71	17.20 4.64
13.85 7.19	15.55 8.73	17.25 4.48
13.90 7.22	15.60 8.75 <<	
13.95 7.25	15.65 8.69	
14.00 7.28	15.70 8.54	...End
14.05 7.31	15.75 8.31	
14.10 7.34	15.80 7.99	
14.15 7.37	15.85 7.59	
14.20 7.40	15.90 7.24	
14.25 7.43	15.95 6.93	
14.30 7.46	16.00 6.68	
14.35 7.49	16.05 6.48	
14.40 7.51	16.10 6.34	
14.45 7.56	16.15 6.24	
14.50 7.63	16.20 6.20	
14.55 7.71	16.25 6.21	
14.60 7.82	16.30 6.21	
14.65 7.94	16.35 6.22	
14.70 8.05	16.40 6.23	
14.75 8.15	16.45 6.24	
14.80 8.24	16.50 6.25	
14.85 8.32	16.55 6.26	
14.90 8.38	16.60 6.26	
14.95 8.43	16.65 6.27	
15.00 8.47	16.70 6.28	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:57 AM

Hyd. No. 24

Thru Pond 3 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Inflow hyd. No. = 18
Max. Elevation = 750.97 ft

Peak discharge = 4.20 cfs
Time interval = 3 min
Reservoir name = Pond 3
Max. Storage = 130,313 cuft

Storage Indication method used.

Outflow hydrograph volume = 212,440 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
16.30	6.21	750.87	3.15	0.38	----	----	2.77	----	----	----	----	3.15
16.35	6.22	750.88	3.31	0.36	----	----	2.95	----	----	----	----	3.31
16.40	6.23	750.88	3.46	0.34	----	----	3.12	----	----	----	----	3.46
16.45	6.24	750.89	3.61	0.32	----	----	3.28	----	----	----	----	3.61
16.50	6.25	750.90	3.74	0.31	----	----	3.44	----	----	----	----	3.74
16.55	6.26	750.90	3.81	0.30	----	----	3.51	----	----	----	----	3.81
16.60	6.26	750.91	3.85	0.29	----	----	3.56	----	----	----	----	3.85
16.65	6.27	750.92	3.88	0.28	----	----	3.60	----	----	----	----	3.88
16.70	6.28	750.92	3.92	0.27	----	----	3.65	----	----	----	----	3.92
16.75	6.29	750.93	3.96	0.26	----	----	3.69	----	----	----	----	3.96
16.80	6.30	750.94	3.99	0.26	----	----	3.73	----	----	----	----	3.99
16.85	6.24	750.94	4.03	0.25	----	----	3.78	----	----	----	----	4.03
16.90	6.12	750.95	4.06	0.24	----	----	3.82	----	----	----	----	4.06
16.95	5.93	750.95	4.09	0.23	----	----	3.85	----	----	----	----	4.09
17.00	5.67	750.96	4.11	0.23	----	----	3.89	----	----	----	----	4.11
17.05	5.36	750.96	4.14	0.22	----	----	3.91	----	----	----	----	4.13
17.10	5.08	750.96	4.15	0.22	----	----	3.93	----	----	----	----	4.15
17.15	4.84	750.97	4.16	0.22	----	----	3.95	----	----	----	----	4.16
17.20	4.64	750.97	4.17	0.22	----	----	3.96	----	----	----	----	4.17
17.25	4.48	750.97	4.18	0.21	----	----	3.96	----	----	----	----	4.18
17.30	4.36	750.97	4.18	0.21	----	----	3.97	----	----	----	----	4.18
17.35	4.28	750.97	4.18	0.21	----	----	3.97	----	----	----	----	4.18
17.40	4.25	750.97	4.19	0.21	----	----	3.97	----	----	----	----	4.19
17.45	4.25	750.97	4.19	0.21	----	----	3.97	----	----	----	----	4.19
17.50	4.25	750.97	4.19	0.21	----	----	3.97	----	----	----	----	4.19
17.55	4.25	750.97	4.19	0.21	----	----	3.98	----	----	----	----	4.19
17.60	4.26	750.97	4.19	0.21	----	----	3.98	----	----	----	----	4.19
17.65	4.26	750.97	4.19	0.21	----	----	3.98	----	----	----	----	4.19
17.70	4.26	750.97	4.19	0.21	----	----	3.98	----	----	----	----	4.19
17.75	4.27	750.97	4.19	0.21	----	----	3.98	----	----	----	----	4.19
17.80	4.27	750.97	4.19	0.21	----	----	3.98	----	----	----	----	4.19
17.85	4.27	750.97	4.20	0.21	----	----	3.98	----	----	----	----	4.19
17.90	4.28	750.97	4.20	0.21	----	----	3.99	----	----	----	----	4.20
17.95	4.28	750.97	4.20	0.21	----	----	3.99	----	----	----	----	4.20
18.00	4.28	750.97	4.20	0.21	----	----	3.99	----	----	----	----	4.20
18.05	4.24	750.97 <<	4.20	0.21	----	----	3.99	----	----	----	----	4.20 <<
18.10	4.15	750.97 <<	4.20	0.21	----	----	3.99	----	----	----	----	4.20
18.15	4.03	750.97	4.20	0.21	----	----	3.99	----	----	----	----	4.20

Continues on next page...

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
18.20	3.85	750.97	4.19	0.21	----	----	3.98	----	----	----	----	4.19
18.25	3.63	750.97	4.19	0.21	----	----	3.97	----	----	----	----	4.19
18.30	3.44	750.97	4.18	0.21	----	----	3.96	----	----	----	----	4.18
18.35	3.28	750.97	4.16	0.22	----	----	3.95	----	----	----	----	4.16
18.40	3.14	750.96	4.15	0.22	----	----	3.93	----	----	----	----	4.15
18.45	3.03	750.96	4.13	0.22	----	----	3.91	----	----	----	----	4.13
18.50	2.95	750.96	4.12	0.23	----	----	3.89	----	----	----	----	4.12
18.55	2.90	750.96	4.10	0.23	----	----	3.87	----	----	----	----	4.10
18.60	2.87	750.95	4.08	0.24	----	----	3.84	----	----	----	----	4.08
18.65	2.87	750.95	4.06	0.24	----	----	3.82	----	----	----	----	4.06
18.70	2.88	750.95	4.04	0.24	----	----	3.80	----	----	----	----	4.04
18.75	2.88	750.94	4.03	0.25	----	----	3.78	----	----	----	----	4.03
18.80	2.88	750.94	4.01	0.25	----	----	3.76	----	----	----	----	4.01
18.85	2.88	750.94	3.99	0.26	----	----	3.74	----	----	----	----	3.99
18.90	2.88	750.93	3.98	0.26	----	----	3.72	----	----	----	----	3.97
18.95	2.88	750.93	3.96	0.26	----	----	3.69	----	----	----	----	3.96
19.00	2.88	750.93	3.94	0.27	----	----	3.67	----	----	----	----	3.94
19.05	2.88	750.92	3.93	0.27	----	----	3.66	----	----	----	----	3.93
19.10	2.88	750.92	3.91	0.27	----	----	3.64	----	----	----	----	3.91
19.15	2.89	750.92	3.89	0.28	----	----	3.62	----	----	----	----	3.89
19.20	2.89	750.92	3.88	0.28	----	----	3.60	----	----	----	----	3.88
19.25	2.87	750.91	3.86	0.28	----	----	3.58	----	----	----	----	3.86
19.30	2.82	750.91	3.85	0.29	----	----	3.56	----	----	----	----	3.85
19.35	2.76	750.91	3.83	0.29	----	----	3.54	----	----	----	----	3.83
19.40	2.67	750.91	3.82	0.30	----	----	3.52	----	----	----	----	3.82
19.45	2.56	750.90	3.80	0.30	----	----	3.50	----	----	----	----	3.80
19.50	2.46	750.90	3.77	0.30	----	----	3.46	----	----	----	----	3.77
19.55	2.38	750.90	3.70	0.31	----	----	3.38	----	----	----	----	3.70
19.60	2.31	750.89	3.63	0.32	----	----	3.31	----	----	----	----	3.63
19.65	2.26	750.89	3.56	0.33	----	----	3.23	----	----	----	----	3.56
19.70	2.21	750.89	3.49	0.34	----	----	3.15	----	----	----	----	3.49
19.75	2.19	750.88	3.42	0.35	----	----	3.07	----	----	----	----	3.42
19.80	2.17	750.88	3.36	0.35	----	----	3.00	----	----	----	----	3.36
19.85	2.17	750.88	3.30	0.36	----	----	2.93	----	----	----	----	3.30
19.90	2.18	750.87	3.24	0.37	----	----	2.87	----	----	----	----	3.24
19.95	2.18	750.87	3.18	0.38	----	----	2.81	----	----	----	----	3.18

...End

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	10.76	3	30	25,235	---	----	-----	Onsite 4-1 hr.
2	SCS Runoff	9.63	3	36	35,870	---	----	-----	Onsite 4-2 hr.
3	SCS Runoff	8.02	3	45	42,514	---	----	-----	Onsite 4-3 hr.
4	SCS Runoff	5.29	3	48	54,421	---	----	-----	Onsite 4-6 hr.
5	SCS Runoff	4.39	3	324	67,352	---	----	-----	Onsite 4-12 hr.
6	SCS Runoff	3.37	3	936	84,300	---	----	-----	Onsite 4-24 hr.
7	Reservoir	0.37	3	84	24,692	1	750.66	24,168	Thru Pond 4 - 1 hr.
8	Reservoir	0.47	3	141	35,243	2	750.91	33,376	Thru Pond 4 - 2 hr.
9	Reservoir	0.51	3	201	41,837	3	751.05	38,459	Thru Pond 4 - 3 hr.
10	Reservoir	0.57	3	375	53,651	4	751.22	45,342	Thru Pond 4 - 6 hr.
11	Reservoir	0.92	3	651	66,455	5	751.33	49,542	Thru Pond 4 - 12 hr.
12	Reservoir	1.41	3	1092	83,161	6	751.38	51,448	Thru Pond 4 - 24 hr.
15015 Post 4.gpw					Return Period: 100 Year			Thursday, Nov 16 2017, 8:58 AM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 1

Onsite 4-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 10.76 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 6.12 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 17.0 min
Total precip.	= 2.88 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 25,235 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow
(hrs cfs)

0.30	6.99
0.35	8.82
0.40	10.06
0.45	10.68
0.50	10.76 <<
0.55	10.31
0.60	9.45
0.65	8.33
0.70	7.25
0.75	6.41
0.80	5.83
0.85	5.44

...End

Hydrograph Report

Hydraflow Hydrographs by Intellisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 6

Onsite 4-24 hr.

Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Drainage area = 6.12 ac
 Basin Slope = 0.0 %
 Tc method = USER
 Total precip. = 6.00 in
 Storm duration = 24 hrs

Peak discharge = 3.37 cfs
 Time interval = 3 min
 Curve number = 79
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 17.0 min
 Distribution = Huff-3rd
 Shape factor = 484

Hydrograph Volume = 84,300 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow		Time -- Outflow		Time -- Outflow	
(hrs	cfs)	(hrs	cfs)	(hrs	cfs)
13.30	1.69	15.00	3.26	16.70	2.42
13.35	1.85	15.05	3.27	16.75	2.42
13.40	2.06	15.10	3.28	16.80	2.42
13.45	2.24	15.15	3.29	16.85	2.39
13.50	2.40	15.20	3.30	16.90	2.32
13.55	2.52	15.25	3.31	16.95	2.21
13.60	2.62	15.30	3.32	17.00	2.06
13.65	2.69	15.35	3.33	17.05	1.94
13.70	2.73	15.40	3.34	17.10	1.84
13.75	2.75	15.45	3.35	17.15	1.75
13.80	2.76	15.50	3.35	17.20	1.69
13.85	2.77	15.55	3.36		
13.90	2.79	15.60	3.37 <<		
13.95	2.80	15.65	3.33	...End	
14.00	2.81	15.70	3.24		
14.05	2.82	15.75	3.11		
14.10	2.83	15.80	2.92		
14.15	2.84	15.85	2.77		
14.20	2.85	15.90	2.63		
14.25	2.87	15.95	2.53		
14.30	2.88	16.00	2.45		
14.35	2.89	16.05	2.40		
14.40	2.90	16.10	2.38		
14.45	2.92	16.15	2.38		
14.50	2.95	16.20	2.38		
14.55	2.99	16.25	2.39		
14.60	3.05	16.30	2.39		
14.65	3.10	16.35	2.39		
14.70	3.14	16.40	2.40		
14.75	3.18	16.45	2.40		
14.80	3.20	16.50	2.40		
14.85	3.23	16.55	2.41		
14.90	3.24	16.60	2.41		
14.95	3.25	16.65	2.41		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 16 2017, 8:58 AM

Hyd. No. 12

Thru Pond 4 - 24 hr.

Hydrograph type = Reservoir
Storm frequency = 100 yrs
Inflow hyd. No. = 6
Max. Elevation = 751.38 ft

Peak discharge = 1.41 cfs
Time interval = 3 min
Reservoir name = Pond 4
Max. Storage = 51,448 cuft

Storage Indication method used.

Outflow hydrograph volume = 83,161 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
17.15	1.75	751.35	1.07	0.49	----	----	0.58	----	----	----	----	1.07
17.20	1.69	751.35	1.10	0.49	----	----	0.61	----	----	----	----	1.10
17.25	1.65	751.35	1.13	0.48	----	----	0.65	----	----	----	----	1.13
17.30	1.63	751.35	1.15	0.48	----	----	0.67	----	----	----	----	1.15
17.35	1.63	751.36	1.17	0.47	----	----	0.70	----	----	----	----	1.17
17.40	1.63	751.36	1.19	0.47	----	----	0.73	----	----	----	----	1.19
17.45	1.63	751.36	1.21	0.46	----	----	0.75	----	----	----	----	1.21
17.50	1.63	751.36	1.23	0.46	----	----	0.77	----	----	----	----	1.23
17.55	1.64	751.36	1.25	0.46	----	----	0.80	----	----	----	----	1.25
17.60	1.64	751.37	1.27	0.45	----	----	0.82	----	----	----	----	1.27
17.65	1.64	751.37	1.29	0.45	----	----	0.84	----	----	----	----	1.29
17.70	1.64	751.37	1.30	0.45	----	----	0.86	----	----	----	----	1.30
17.75	1.64	751.37	1.32	0.44	----	----	0.88	----	----	----	----	1.32
17.80	1.64	751.37	1.33	0.44	----	----	0.89	----	----	----	----	1.33
17.85	1.64	751.37	1.35	0.44	----	----	0.91	----	----	----	----	1.35
17.90	1.64	751.38	1.36	0.43	----	----	0.93	----	----	----	----	1.36
17.95	1.64	751.38	1.37	0.43	----	----	0.94	----	----	----	----	1.37
18.00	1.65	751.38	1.38	0.43	----	----	0.96	----	----	----	----	1.38
18.05	1.62	751.38	1.40	0.43	----	----	0.97	----	----	----	----	1.40
18.10	1.57	751.38	1.41	0.42	----	----	0.98	----	----	----	----	1.41
18.15	1.50	751.38	1.41	0.42	----	----	0.99	----	----	----	----	1.41
18.20	1.40	751.38	1.41	0.42	----	----	0.99	----	----	----	----	1.41 <<
18.25	1.31	751.38	1.41	0.42	----	----	0.99	----	----	----	----	1.41
18.30	1.24	751.38	1.40	0.42	----	----	0.98	----	----	----	----	1.40
18.35	1.19	751.38	1.40	0.43	----	----	0.97	----	----	----	----	1.40
18.40	1.15	751.38	1.39	0.43	----	----	0.96	----	----	----	----	1.39
18.45	1.12	751.38	1.37	0.43	----	----	0.94	----	----	----	----	1.37
18.50	1.10	751.38	1.36	0.43	----	----	0.93	----	----	----	----	1.36
18.55	1.10	751.37	1.35	0.43	----	----	0.91	----	----	----	----	1.35
18.60	1.10	751.37	1.34	0.44	----	----	0.90	----	----	----	----	1.34
18.65	1.10	751.37	1.33	0.44	----	----	0.89	----	----	----	----	1.33
18.70	1.10	751.37	1.32	0.44	----	----	0.88	----	----	----	----	1.32
18.75	1.11	751.37	1.31	0.44	----	----	0.86	----	----	----	----	1.31
18.80	1.11	751.37	1.30	0.45	----	----	0.85	----	----	----	----	1.30
18.85	1.11	751.37	1.29	0.45	----	----	0.84	----	----	----	----	1.29
18.90	1.11	751.37	1.28	0.45	----	----	0.83	----	----	----	----	1.28
18.95	1.11	751.37	1.27	0.45	----	----	0.82	----	----	----	----	1.27
19.00	1.11	751.37	1.27	0.45	----	----	0.81	----	----	----	----	1.27

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PROJECT NAME: Deer Meadows

Emergency spillway calculation Pond #3

Peak 100 Yr. Inflow = 30.73 c.f.s.

$$1.25 \times 30.73 \text{ c.f.s.} = 38.4$$

Weir Equation: $Q = C L H^{3/2}$

Where Q = outflow

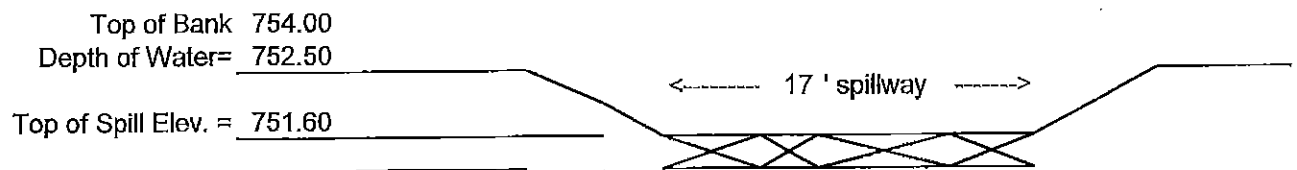
L = length of weir

C = discharge coefficient

H = hydraulic head over weir

$$38.413 \text{ c.f.s.} = 2.6 (L)^{0.85}$$

$$L = 17.3'$$



PROJECT NAME: Deer Meadows

Emergency spillway calculation Pond #4

Peak 100 Yr. Inflow = 11.43 c.f.s.

$$1.25 \times 11.43 \text{ c.f.s.} = 14.3$$

Weir Equation: $Q = C L H^{3/2}$

Where Q = outflow

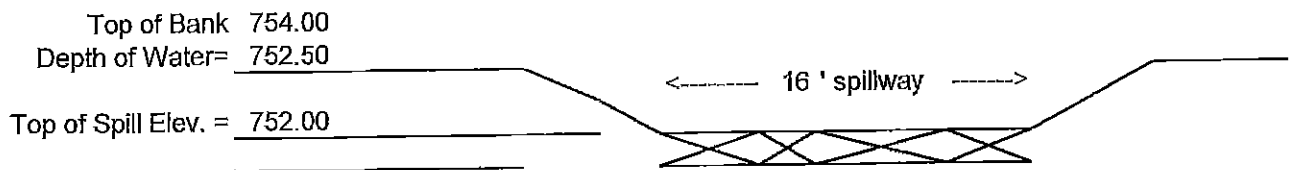
L = length of weir

C = discharge coefficient

H = hydraulic head over weir

$$14.288 \text{ c.f.s.} = 2.6 (L)^{0.35}$$

$$L = 15.54'$$



PROJECT NAME: Deer Meadows

Emergency spillway calculation Pond #5

Peak 100 Yr. Inflow = 13.47 c.f.s.

$$1.25 \times 13.47 \text{ c.f.s.} = 16.8$$

Weir Equation:

$$Q = C L H^{3/2}$$

Where Q = outflow

L = length of weir

C = discharge coefficient

H = hydraulic head over weir

$$16.838 \text{ c.f.s.} = 2.6 (L)^{0.21}$$

$$L = 31.28'$$



Water Quality Calculations

Project Name: Deer Meadows

Project # 15015

Water Quality - Pond #2

Option #1

20% of Runoff from a 1.25" storm event

$$\text{Volume} = 8,508 \text{ c.f.} \times 0.20 = 1,702 \text{ c.f.}$$

Option #2

20% of a 0.50" direct runoff

$$\text{Volume} = 15.73 \text{ ac.} \times \frac{43560 \text{ s.f.}}{1 \text{ ac.}} \times \frac{144 \text{ s.-in.}}{1 \text{ s.f.}} \times 0.50\text{-in}$$

$$= 49,334,314 \text{ c.in} = 28,550 \text{ c.f.}$$

$$= 28,550 \text{ c.f.} \times 0.20 = \boxed{5,710 \text{ c.f.} \leq \text{USE}}$$

Peak storm event happens at 2 inch storm event

Storm event that provides 5,710 c.f. is a 2 inch storm event

Peak occurs at 24.20 hrs for the 2 inch storm event

$$24.20 \text{ hrs} + 12.0 \text{ hrs} = 36.20 \text{ hrs}$$

$$\text{Pond Elevation at } 36.20 \text{ hrs} = 748.20 \text{ n.p. } 747.95$$

$$\text{Pond Storage Volume at } 36.20 \text{ hrs} = 12,495 \text{ c.f.} > 5,710 \text{ c.f.}$$

$$\frac{1.05}{52,480} = \frac{0.25}{12,495}$$

$$24.20 \text{ hrs} + 18.0 \text{ hrs} = 42.20 \text{ hrs}$$

$$\text{Pond Elevation at } 42.20 \text{ hrs} = 748.16 \text{ n.p. } 747.95$$

$$\text{Pond Storage Volume at } 42.20 \text{ hrs} = 10,496 \text{ c.f.} > 5,710 \text{ c.f.}$$

$$\frac{1.05}{52,480} = \frac{0.21}{10,496}$$

$$24.20 \text{ hrs} + 24.0 \text{ hrs} = 48.20 \text{ hrs}$$

$$\text{Pond Elevation at } 48.20 \text{ hrs} = 748.13 \text{ n.p. } 747.95$$

$$\text{Pond Storage Volume at } 48.20 \text{ hrs} = 8,997 \text{ c.f.} > 5,710 \text{ c.f.}$$

$$\frac{1.05}{52,480} = \frac{0.18}{8,997}$$

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	0.17	3	435	8,508	---	-----	-----	WQ 1.25IN EVENT
2	SCS Runoff	0.72	3	360	29,088	---	-----	-----	WQ 0.5IN EVENT
3	Reservoir	0.20	3	1452	27,183	2	748.33	18,816	Thru Pond 2 - 1 hr.
15015 Post 2-wq.gpw					Return Period: 2 Year			Wednesday, Aug 12 2015, 1:47 PM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:50 PM

Hyd. No. 3

Thru Pond 2 - 1 hr.

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 2
Max. Elevation = 748.33 ft

Peak discharge = 0.20 cfs
Time interval = 3 min
Reservoir name = Pond 2
Max. Storage = 18,816 cuft

Storage Indication method used.

Outflow hydrograph volume = 27,183 cuft

(Printed values >= 25% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
6.60	0.58	748.11	0.05	0.05	----	----	----	----	----	----	----	0.05
6.65	0.58	748.11	0.05	0.05	----	----	----	----	----	----	----	0.05
6.70	0.58	748.11	0.05	0.05	----	----	----	----	----	----	----	0.05
6.75	0.59	748.11	0.05	0.05	----	----	----	----	----	----	----	0.05
6.80	0.59	748.12	0.06	0.05	----	----	----	----	----	----	----	0.05
6.85	0.59	748.12	0.06	0.05	----	----	----	----	----	----	----	0.05
6.90	0.60	748.12	0.06	0.06	----	----	----	----	----	----	----	0.06
6.95	0.60	748.12	0.06	0.06	----	----	----	----	----	----	----	0.06
7.00	0.60	748.12	0.06	0.06	----	----	----	----	----	----	----	0.06
7.05	0.60	748.13	0.06	0.06	----	----	----	----	----	----	----	0.06
7.10	0.61	748.13	0.06	0.06	----	----	----	----	----	----	----	0.06
7.15	0.61	748.13	0.06	0.06	----	----	----	----	----	----	----	0.06
7.20	0.61	748.13	0.06	0.06	----	----	----	----	----	----	----	0.06
7.25	0.61	748.13	0.07	0.06	----	----	----	----	----	----	----	0.06
7.30	0.61	748.14	0.07	0.06	----	----	----	----	----	----	----	0.06
7.35	0.60	748.14	0.07	0.07	----	----	----	----	----	----	----	0.07
7.40	0.59	748.14	0.07	0.07	----	----	----	----	----	----	----	0.07
7.45	0.58	748.14	0.07	0.07	----	----	----	----	----	----	----	0.07
7.50	0.56	748.14	0.07	0.07	----	----	----	----	----	----	----	0.07
7.55	0.55	748.14	0.07	0.07	----	----	----	----	----	----	----	0.07
7.60	0.55	748.15	0.07	0.07	----	----	----	----	----	----	----	0.07
7.65	0.54	748.15	0.07	0.07	----	----	----	----	----	----	----	0.07
7.70	0.54	748.15	0.07	0.07	----	----	----	----	----	----	----	0.07
7.75	0.53	748.15	0.08	0.07	----	----	----	----	----	----	----	0.07
7.80	0.53	748.15	0.08	0.07	----	----	----	----	----	----	----	0.07
7.85	0.54	748.15	0.08	0.07	----	----	----	----	----	----	----	0.08
7.90	0.54	748.16	0.08	0.08	----	----	----	----	----	----	----	0.08
7.95	0.54	748.16	0.08	0.08	----	----	----	----	----	----	----	0.08
8.00	0.54	748.16	0.08	0.08	----	----	----	----	----	----	----	0.08
8.05	0.54	748.16	0.08	0.08	----	----	----	----	----	----	----	0.08
8.10	0.54	748.16	0.08	0.08	----	----	----	----	----	----	----	0.08
8.15	0.55	748.16	0.08	0.08	----	----	----	----	----	----	----	0.08
8.20	0.55	748.17	0.08	0.08	----	----	----	----	----	----	----	0.08
8.25	0.55	748.17	0.09	0.08	----	----	----	----	----	----	----	0.08
8.30	0.55	748.17	0.09	0.08	----	----	----	----	----	----	----	0.08
8.35	0.55	748.17	0.09	0.09	----	----	----	----	----	----	----	0.09
8.40	0.56	748.17	0.09	0.09	----	----	----	----	----	----	----	0.09
8.45	0.55	748.17	0.09	0.09	----	----	----	----	----	----	----	0.09

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Thru Pond 2 - 1 hr.

Hydrograph Discharge Table

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Thru Pond 2 - 1 hr.

Hydrograph Discharge Table

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Thru Pond 2 - 1 hr.

Hydrograph Discharge Table

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Project Name: Deer Meadows

Project # 15015

Water Quality - Pond #3

Option #1

20% of Runoff from a 1.25" storm event

$$\text{Volume} = 10,672 \text{ c.f.} \times 0.20 = 2,134 \text{ c.f.}$$

Option #2

20% of a 0.50" direct runoff

$$\text{Volume} = 19.73 \text{ ac.} \times \frac{43560 \text{ s.f.}}{1 \text{ ac.}} \times \frac{144 \text{ s.-in.}}{1 \text{ s.f.}} \times 0.50\text{-in}$$

$$= 61,879,594 \text{ c.in} = 35,810 \text{ c.f.}$$

$$= 35,810 \text{ c.f.} \times 0.20 = 7,162 \text{ c.f.} \leq \text{USE}$$

Peak storm event happens at 2 inch storm event

Storm event that provides 7,162 c.f. is a 2 inch storm event

Peak occurs at 20.70 hrs for the 2 inch storm event

$$20.70 \text{ hrs} + 12.0 \text{ hrs} = 32.70 \text{ hrs}$$

Pond Elevation at 32.70 hrs = 749.33 n.p. 749.00

Pond Storage Volume at 32.70 hrs = 15,112 c.f. > 7,162 c.f.

$$\frac{1}{45,794} = \frac{0.33}{15,112}$$

$$20.70 \text{ hrs} + 18.0 \text{ hrs} = 38.70 \text{ hrs}$$

Pond Elevation at 38.70 hrs = 749.27 n.p. 749.00

Pond Storage Volume at 38.70 hrs = 12,364 c.f. > 7,162 c.f.

$$\frac{1}{45,794} = \frac{0.27}{12,364}$$

$$20.70 \text{ hrs} + 24.0 \text{ hrs} = 44.70 \text{ hrs}$$

Pond Elevation at 44.70 hrs = 749.22 n.p. 749.00

Pond Storage Volume at 44.70 hrs = 10,075 c.f. > 7,162 c.f.

$$\frac{1}{45,794} = \frac{0.22}{10,075}$$

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	0.22	3	435	10,672	---	-----	-----	WQ 1.25IN EVENT
2	SCS Runoff	0.90	3	360	36,485	---	-----	-----	WQ 0.5IN EVENT
3	Reservoir	0.26	3	1242	34,873	2	749.48	21,935	Thru Pond 3 - 1 hr.
15015 Post 3-wq.gpw					Return Period: 2 Year			Wednesday, Aug 12 2015, 1:51 PM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:51 PM

Hyd. No. 3

Thru Pond 3 - 1 hr.

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 2
Max. Elevation = 749.48 ft

Peak discharge = 0.26 cfs
Time interval = 3 min
Reservoir name = Pond 3
Max. Storage = 21,935 cuft

Storage Indication method used.

Outflow hydrograph volume = 34,873 cuft

(Printed values >= 25% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
6.15	0.87	749.19	0.07	0.07	----	----	----	----	----	----	----	0.07
6.20	0.85	749.19	0.07	0.07	----	----	----	----	----	----	----	0.07
6.25	0.82	749.20	0.07	0.07	----	----	----	----	----	----	----	0.07
6.30	0.79	749.20	0.07	0.07	----	----	----	----	----	----	----	0.07
6.35	0.77	749.20	0.08	0.07	----	----	----	----	----	----	----	0.07
6.40	0.75	749.20	0.08	0.08	----	----	----	----	----	----	----	0.08
6.45	0.74	749.21	0.08	0.08	----	----	----	----	----	----	----	0.08
6.50	0.73	749.21	0.08	0.08	----	----	----	----	----	----	----	0.08
6.55	0.73	749.21	0.08	0.08	----	----	----	----	----	----	----	0.08
6.60	0.72	749.21	0.08	0.08	----	----	----	----	----	----	----	0.08
6.65	0.73	749.22	0.09	0.08	----	----	----	----	----	----	----	0.08
6.70	0.73	749.22	0.09	0.09	----	----	----	----	----	----	----	0.09
6.75	0.74	749.22	0.09	0.09	----	----	----	----	----	----	----	0.09
6.80	0.74	749.22	0.09	0.09	----	----	----	----	----	----	----	0.09
6.85	0.74	749.23	0.09	0.09	----	----	----	----	----	----	----	0.09
6.90	0.75	749.23	0.10	0.09	----	----	----	----	----	----	----	0.09
6.95	0.75	749.23	0.10	0.10	----	----	----	----	----	----	----	0.10
7.00	0.75	749.23	0.10	0.10	----	----	----	----	----	----	----	0.10
7.05	0.76	749.24	0.10	0.10	----	----	----	----	----	----	----	0.10
7.10	0.76	749.24	0.10	0.10	----	----	----	----	----	----	----	0.10
7.15	0.76	749.24	0.11	0.10	----	----	----	----	----	----	----	0.10
7.20	0.77	749.24	0.11	0.10	----	----	----	----	----	----	----	0.10
7.25	0.77	749.25	0.11	0.11	----	----	----	----	----	----	----	0.11
7.30	0.76	749.25	0.11	0.11	----	----	----	----	----	----	----	0.11
7.35	0.75	749.25	0.11	0.11	----	----	----	----	----	----	----	0.11
7.40	0.74	749.25	0.12	0.11	----	----	----	----	----	----	----	0.11
7.45	0.72	749.26	0.12	0.11	----	----	----	----	----	----	----	0.11
7.50	0.71	749.26	0.12	0.12	----	----	----	----	----	----	----	0.12
7.55	0.70	749.26	0.12	0.12	----	----	----	----	----	----	----	0.12
7.60	0.69	749.26	0.12	0.12	----	----	----	----	----	----	----	0.12
7.65	0.68	749.27	0.12	0.12	----	----	----	----	----	----	----	0.12
7.70	0.67	749.27	0.13	0.12	----	----	----	----	----	----	----	0.12
7.75	0.67	749.27	0.13	0.12	----	----	----	----	----	----	----	0.12
7.80	0.67	749.27	0.13	0.12	----	----	----	----	----	----	----	0.12
7.85	0.67	749.28	0.13	0.13	----	----	----	----	----	----	----	0.13
7.90	0.67	749.28	0.13	0.13	----	----	----	----	----	----	----	0.13
7.95	0.68	749.28	0.13	0.13	----	----	----	----	----	----	----	0.13
8.00	0.68	749.28	0.13	0.13	----	----	----	----	----	----	----	0.13

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Thru Pond 3 - 1 hr.

Hydrograph Discharge Table

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Thru Pond 3 - 1 hr.

Hydrograph Discharge Table

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Thru Pond 3 - 1 hr.

Hydrograph Discharge Table

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Project Name: Deer Meadows

Project # 15015

Water Quality - Pond #4

Option #1

20% of Runoff from a 1.25" storm event

$$\text{Volume} = 3,718 \text{ c.f.} \times 0.20 = 744 \text{ c.f.}$$

Option #2

20% of a 0.50" direct runoff

$$\text{Volume} = 6.5 \text{ ac.} \times \frac{43560 \text{ s.f.}}{1 \text{ ac.}} \times \frac{144 \text{ s.-in.}}{1 \text{ s.f.}} \times 0.50\text{-in}$$

$$= 20,386,080 \text{ c.in} = 11,798 \text{ c.f.}$$

$$= 11,798 \text{ c.f.} \times 0.20 = \boxed{2,360 \text{ c.f.} \leq \text{USE}}$$

Peak storm event happens at 2.4 inch storm event

Storm event that provides 2,360 c.f. is a 1.9 inch storm event

Peak occurs at 20.65 hrs for the 1.9 inch storm event

$$20.65 \text{ hrs} + 12.0 \text{ hrs} = 32.65 \text{ hrs}$$

Pond Elevation at 32.65 hrs = 750.16 n.p. 750.00

Pond Storage Volume at 32.65 hrs = 5,816 c.f. > 2,360 c.f.

$$\frac{1}{36,350} = \frac{0.16}{5,816}$$

$$20.65 \text{ hrs} + 18.0 \text{ hrs} = 38.65 \text{ hrs}$$

Pond Elevation at 38.65 hrs = 750.13 n.p. 750.00

Pond Storage Volume at 38.65 hrs = 4,725 c.f. > 2,360 c.f.

$$\frac{1}{36,350} = \frac{0.13}{4,725}$$

$$20.65 \text{ hrs} + 24.0 \text{ hrs} = 44.65 \text{ hrs}$$

Pond Elevation at 44.65 hrs = 750.11 n.p. 750.00

Pond Storage Volume at 44.65 hrs = 3,999 c.f. > 2,360 c.f.

$$\frac{1}{36,350} = \frac{0.11}{3,999}$$

Hydrograph Summary Report

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Maximum storage (cuft)	Hydrograph description
1	SCS Runoff	0.08	3	435	3,719	---	---	---	WQ 1.25IN EVENT
2	SCS Runoff	0.30	3	360	12,008	---	---	---	WQ 0.5IN EVENT
3	Reservoir	0.09	3	1239	11,454	2	750.21	7,713	Thru Pond 4 - 1 hr.
15015 Post 4-wq.gpw					Return Period: 2 Year			Wednesday, Aug 12 2015, 1:51 PM	

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:51 PM

Hyd. No. 3

Thru Pond 4 - 1 hr.

Hydrograph type = Reservoir
Storm frequency = 2 yrs
Inflow hyd. No. = 2
Max. Elevation = 750.21 ft

Peak discharge = 0.09 cfs
Time interval = 3 min
Reservoir name = Pond 4
Max. Storage = 7,713 cuft

Storage Indication method used.

Outflow hydrograph volume = 11,454 cuft

(Printed values >= 25% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Inflow cfs	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	Clv D cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	Outflow cfs
7.25	0.25	750.10	0.02	0.02	----	----	----	----	----	----	----	0.02
7.30	0.25	750.10	0.02	0.02	----	----	----	----	----	----	----	0.02
7.35	0.25	750.10	0.02	0.02	----	----	----	----	----	----	----	0.02
7.40	0.24	750.11	0.03	0.02	----	----	----	----	----	----	----	0.02
7.45	0.23	750.11	0.03	0.02	----	----	----	----	----	----	----	0.02
7.50	0.23	750.11	0.03	0.02	----	----	----	----	----	----	----	0.02
7.55	0.22	750.11	0.03	0.03	----	----	----	----	----	----	----	0.03
7.60	0.22	750.11	0.03	0.03	----	----	----	----	----	----	----	0.03
7.65	0.22	750.11	0.03	0.03	----	----	----	----	----	----	----	0.03
7.70	0.22	750.11	0.03	0.03	----	----	----	----	----	----	----	0.03
7.75	0.22	750.11	0.03	0.03	----	----	----	----	----	----	----	0.03
7.80	0.22	750.11	0.03	0.03	----	----	----	----	----	----	----	0.03
7.85	0.22	750.11	0.03	0.03	----	----	----	----	----	----	----	0.03
7.90	0.22	750.12	0.03	0.03	----	----	----	----	----	----	----	0.03
7.95	0.22	750.12	0.03	0.03	----	----	----	----	----	----	----	0.03
8.00	0.23	750.12	0.03	0.03	----	----	----	----	----	----	----	0.03
8.05	0.23	750.12	0.03	0.03	----	----	----	----	----	----	----	0.03
8.10	0.23	750.12	0.03	0.03	----	----	----	----	----	----	----	0.03
8.15	0.23	750.12	0.03	0.03	----	----	----	----	----	----	----	0.03
8.20	0.23	750.12	0.03	0.03	----	----	----	----	----	----	----	0.03
8.25	0.23	750.12	0.03	0.03	----	----	----	----	----	----	----	0.03
8.30	0.23	750.12	0.04	0.03	----	----	----	----	----	----	----	0.03
8.35	0.23	750.12	0.04	0.03	----	----	----	----	----	----	----	0.03
8.40	0.23	750.13	0.04	0.03	----	----	----	----	----	----	----	0.03
8.45	0.23	750.13	0.04	0.03	----	----	----	----	----	----	----	0.03
8.50	0.23	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.55	0.22	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.60	0.21	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.65	0.21	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.70	0.20	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.75	0.20	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.80	0.19	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.85	0.19	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.90	0.19	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
8.95	0.19	750.13	0.04	0.04	----	----	----	----	----	----	----	0.04
9.00	0.19	750.14	0.04	0.04	----	----	----	----	----	----	----	0.04
9.05	0.19	750.14	0.04	0.04	----	----	----	----	----	----	----	0.04
9.10	0.19	750.14	0.04	0.04	----	----	----	----	----	----	----	0.04

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Thru Pond 4 - 1 hr.

Hydrograph Discharge Table

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Thru Pond 4 - 1 hr.

Hydrograph Discharge Table

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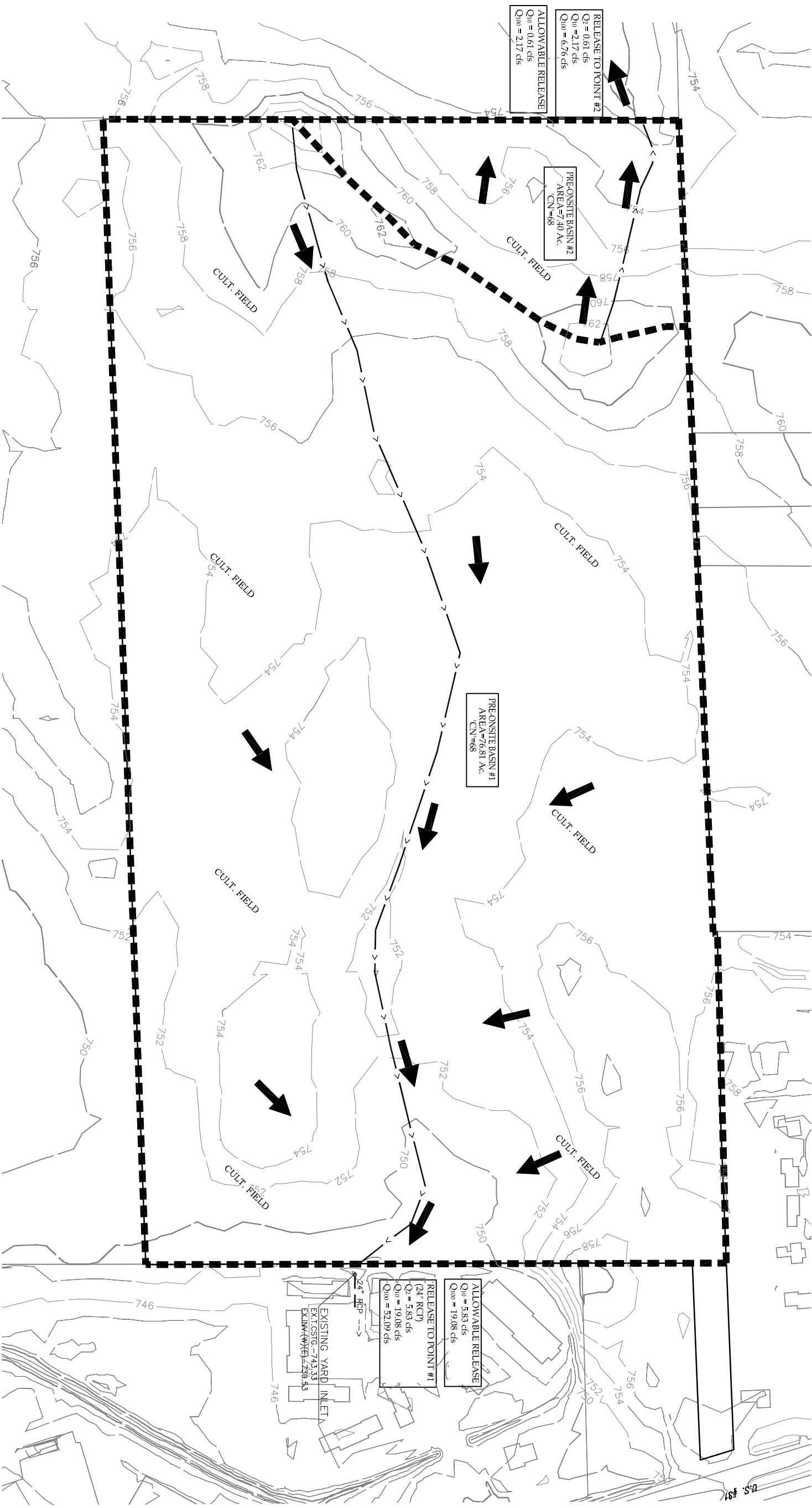
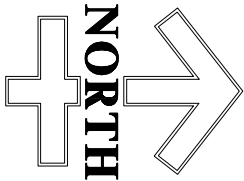
Thru Pond 4 - 1 hr.

Hydrograph Discharge Table

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Watershed Basin Maps



DATE

REVISION

SYMBOL

SCALE
1"=200'
DRAWN
JPH
CHECKED
JKS
CERTIFIED
JKS

PROJECT
DEER MEADOWS – SECTIONS 1–5
CITY OF FRANKLIN, JOHNSON COUNTY, INDIANA
TITLE
PRE–DEVELOPED DRAINAGE
BASINS

PROJECTS *plus*

GREENWOOD SURVEYING COMPANY

CIVIL ENGINEERING – LAND SURVEYING
LAND PLANNING CONSTRUCTION MANAGEMENT
2555 Fairview Place Suite A • Greenwood, Indiana 46142
(317)–882–5003

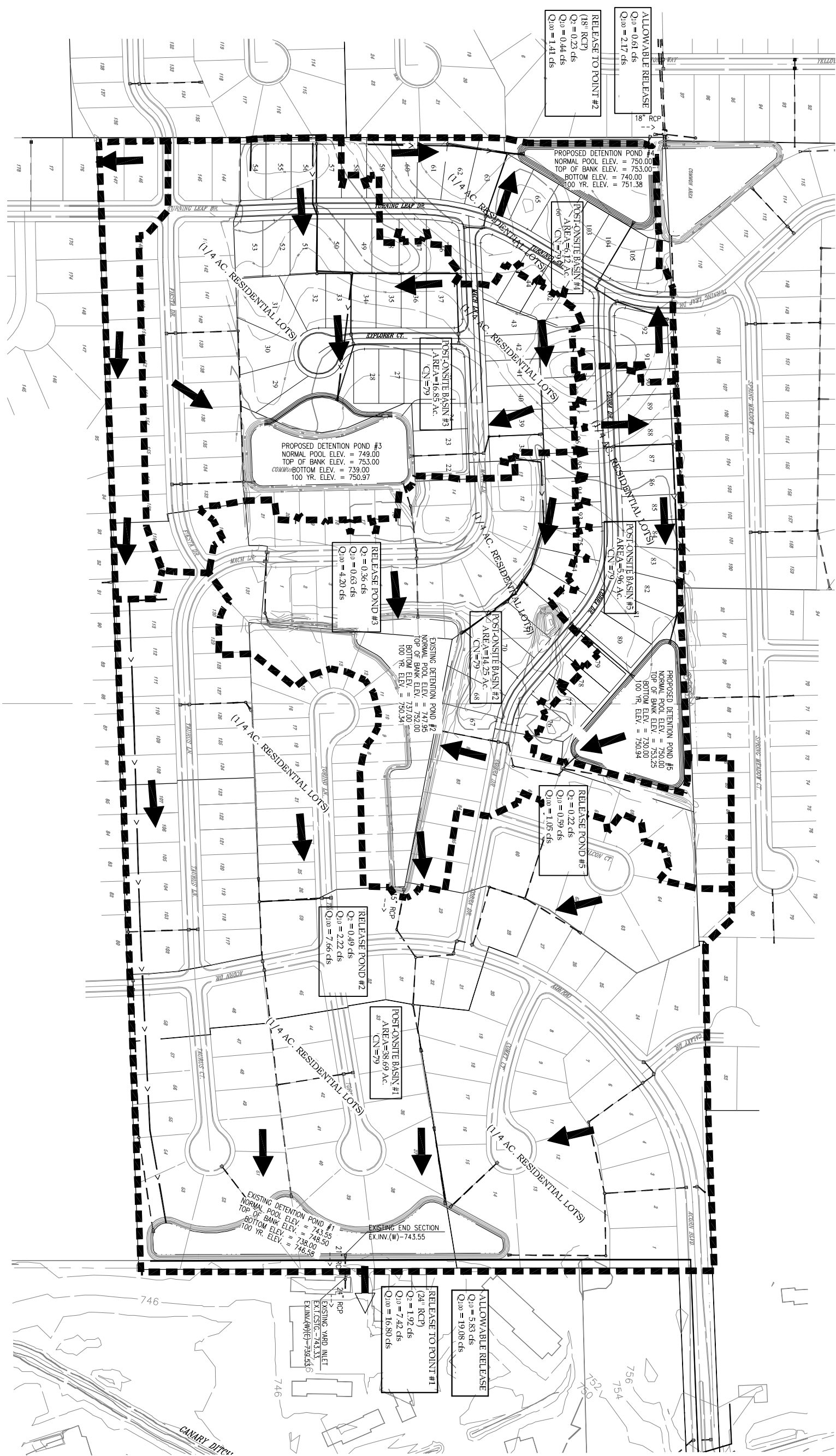
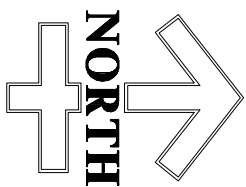
SEAL

JOB NUMBER
15015
SHEET

1

OF 1 SHEETS

AUGUST 12, 2015



PROJECTS *plus*

GREENWOOD SURVEYING COMPANY

CIVIL ENGINEERING - LAND SURVEYING
LAND PLANNING - CONSTRUCTION MANAGEMENT
2650 Fairview Place Suite W - Greenwood, Indiana 46142
(317)-882-5003

PROJECT
DEER MEADOWS
CITY OF FRANKLIN, JOHNSON COUNTY, INDIANA
TITLE
POST-DEVELOPED DRAINAGE BASINS

SCALE 1"=250'	SYMBOL	REVISION	DATE
DRAWN JPH			
CHECKED JKS			
CERTIFIED JKS			

JOB NUMBER
15015

SHEET

1
SHEETS

NOVEMBER 16, 2017