Final Drainage Report for

Deer Meadows Section One

City of Franklin, Johnson County, Indiana

Dated: November 12, 2015

JEFFERY K. SMITH
REGISTERED
No.
19419
STATE OF
INDIANA
PROFESSIONAL ENGINEER

Calculations Prepared By:

PROJECTS plus

2555 Fairview Place, Suite A
Greenwood, Indiana 46142

OFFICE (317) 882-5003
FAX (317) 882-1082

LAND PLANNING • ENGINEERING • SURVEYING • PROJECT MANAGEMENT

Certified By:

11/12/15

Jeffery K. Smith, P.E. 19419

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. Storm Sewer Calculations

- 'CN' Calculations and TR55 T/C Worksheets
- Storm Sewer HYDRAFLOW Hydrographs
- HYDRAFLOW Storm Sewer Calculations
- Inlet Spread Calculations
- Gutter Spread Calculations

VI. Watershed Delineation Maps

- Pre-Developed Drainage Map
- Post-Developed Drainage Map
- Storm Sewer Basin Maps

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 a undeveloped tract of 32.03 acres in the City of Franklin, Franklin Township, Johnson County, Indiana. The existing ground cover is comprised of pasture field. The site was once 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 is 32.03 acres, this represents the area of the entire Deer Meadows Subdivision. The pre-developed runoff rates were recomputed for the overall 84.21 acres that is known as Deer Village, Deer Trails and Deer Run. 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:

Onsite Pre-Basin '1'		
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:

Onsite Pre-Basin '2'		
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 will consist of 112 single-family residences. This subdivision will be developed in five phases. Section One will consist of 21 single-family residences. The infrastructure improvements will connect to the existing 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 adjoiners 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} = 26.33 cfs, Q_{100} = 60.50 cfs
Detention Pond Release
Q_2 = 1.92 cfs, Q_{10} = 7.45 cfs, Q_{100} = 17.47 cfs
N.P. 743.55 100 yr. 746.72

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 existing detention pond #2. The detention pond releases will be modified with a proposed water quality control box and then will outlet to the existing 15" RCP storm sewer and continue to release east to detention pond #1 as the current infrastructure is constructed.

A = 15.73 acres CN = 79
Q_2 = 3.42 cfs, Q_{10} = 10.68 cfs, Q_{100} = 24.50 cfs
Total to Pond
Q_2 = 3.45 cfs, Q_{10} = 10.80 cfs, Q_{100} = 24.82 cfs
Detention Pond Release
Q_2 = 0.50 cfs, Q_{10} 2.97 cfs, Q_{100} = 8.26 cfs
N.P. 747.95 100 yr. 750.56

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 proposed detention pond #3. The detention pond releases via a proposed water quality control box and a proposed 12" RCP storm sewer east to existing detention pond #2.

A = 19.73 acres CN = 79
Q_2 = 4.29 cfs, Q_{10} = 13.39 cfs, Q_{100} = 30.73 cfs
Detention Pond Release
Q_2 = 0.50 cfs, Q_{10} = 2.61 cfs, Q_{100} = 5.35 cfs
N.P. 749.00 100 yr. 751.52

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 proposed detention pond #4. The detention pond releases via a proposed water quality control box and a proposed 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 = 6.50 acres	CN = 79
Q_2 = 1.52 cfs, Q_{10} = 4.97 cfs, Q_{100} = 11.43 cfs	
Detention Pond Release	
Q_2 = 0.25 cfs, Q_{10} = 0.46 cfs, Q_{100} = 1.68 cfs	
N.P. 750.00	100 yr. 751.41

Water Quality:

The two proposed wet detention ponds and modification to the existing wet detention pond 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".

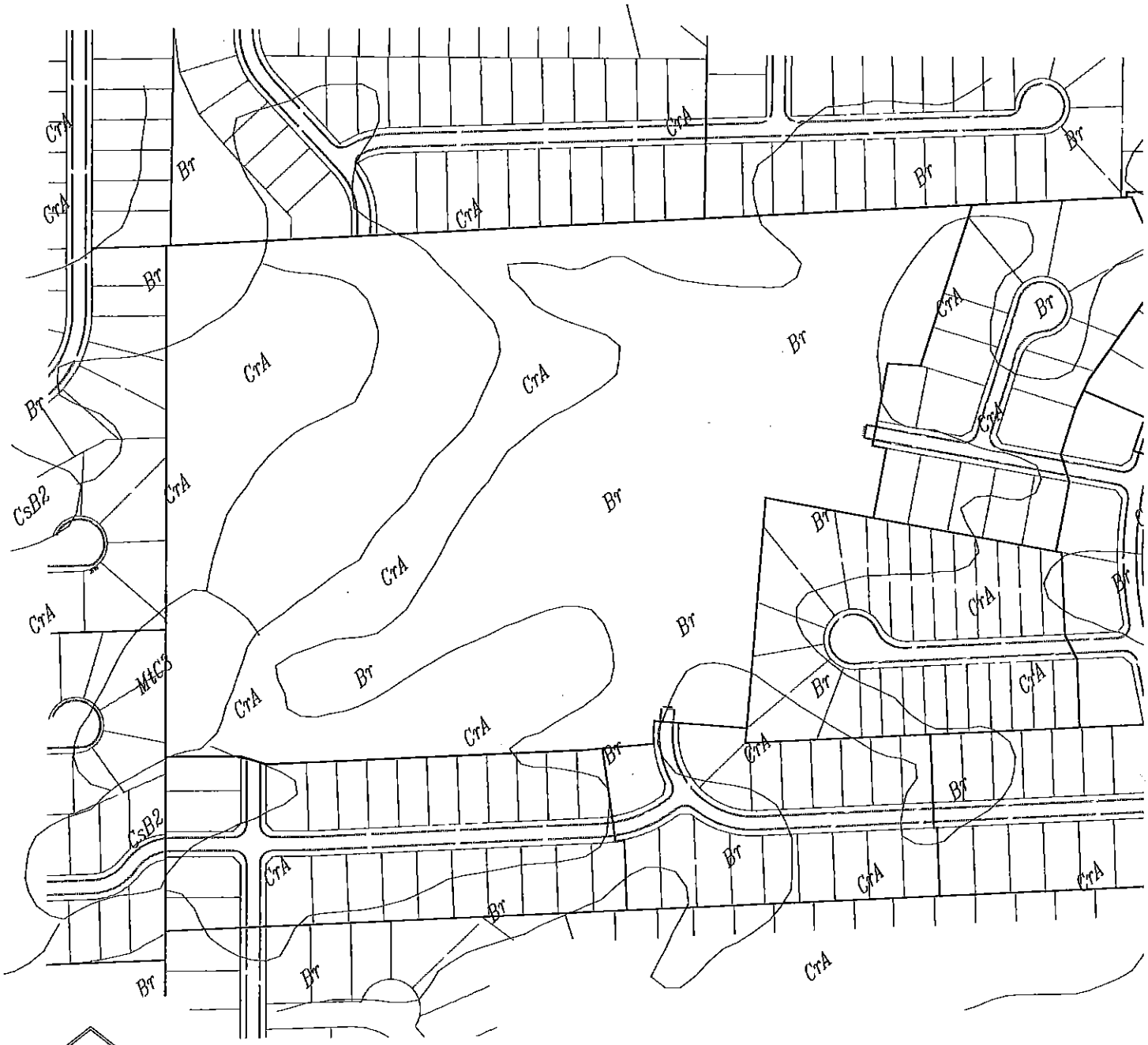
Storm Sewer Methodology:

The storm sewer were designed to meet the requirements are outlined in City of Franklin Subdivision Control Ordinance. The storm sewer systems are designed using the HYDRAFLOW Storm Sewer Module. Discharge rates for each inlet were calculated using the "SCS Curve Number Method" and input into the HYDRAFLOW Storm Sewer Module to calculate the capacity and hydraulic grade line for each pipe. 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



NORTH

SCALE 1" =400'

PROJECTS *plus*

GREENWOOD SURVEYING COMPANY

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

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	9.69
0.17	10	3.63	4.75	5.48	6.40	7.07	7.77
0.25	15	2.97	3.92	4.55	5.34	5.94	6.53
0.5	30	1.98	2.64	3.09	3.65	4.10	4.50
1	60	1.25	1.67	1.96	2.31	2.62	2.88
2	120	0.76	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	0.98	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	1.52	2.04	2.40	2.80	3.18	3.50
3	180	1.68	2.25	2.64	3.09	3.51	3.87
6	360	1.98	2.64	3.12	3.60	4.08	4.50
12	720	2.40	3.12	3.60	4.20	4.68	5.16
24	1440	2.64	3.60	4.08	4.80	5.28	6.00

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

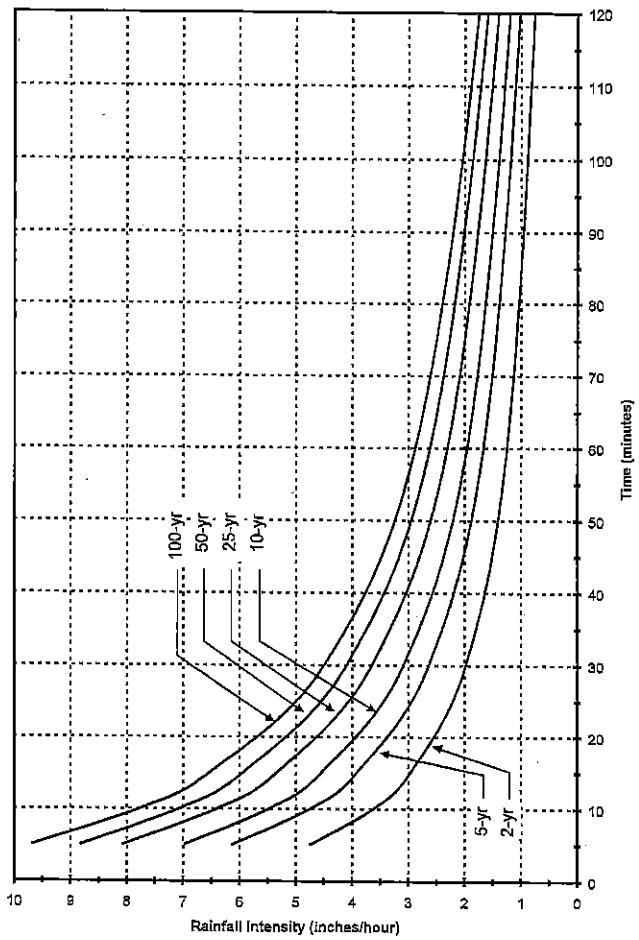


FIGURE 202-01: Indianapolis IDF Curve

Surface Description	n
Smooth surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Fallow (no residue)	0.05
Cultivated Soils:	
Residue cover <= 20%	0.06
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	0.80

TABLE 203-01: Roughness coefficients (Manning's n) for sheet flow

TYPE OF SURFACE	RUNOFF COEFFICIENT ©
Non-Urban Areas	
Bare earth	0.55
Steep grassed areas (slope 2:1)	0.60
Turf meadows	0.25
Forested areas	0.20
Cultivated fields	0.30
Urban Areas	
All watertight roof surfaces	0.90
Pavement	0.85
Gravel	0.85
Impervious soils (heavy)	0.55
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	0.40
Lots > ½ acre	0.35
Park, Cemetery or Unimproved Area	0.30

TABLE 204-01: Runoff Coefficients© for Use in the Rational Method

[Absence of an entry indicates the feature is not a concern. The symbol < means less than; > means greater than]

Soil name and map symbol	Hydrologic group	Flooding			High water table			Potential frost action
		Frequency	Duration	Months	Depth	Kind	Months	
Brookston: Br	B/D	Frequent	Brief	Dec–May	Ft 0–1.0	Apparent	Dec–May	High.
Crosby: CrA	C	None			1.0–2.0	Apparent	Jan–Apr	High.
[1] CsB2:								
Crosby part	C	None			1.0–3.0	Apparent	Jan–Apr	High.
Miami part	B	None			>6.0			Moderate.
Eel: Ee	C	Frequent	Brief	Oct–Jun	1.0–3.0	Apparent	Jan–Apr	High.
Fox: FoA, FeB2, [1] FeC2	B	None			>6.0			Moderate.
Genesee: Ge	B	Frequent	Brief	Oct–Jun	>6.0			Moderate.
Hennepin: HeF	B	None			>6.0			Moderate.
Martinsville: MgA, MgB2	B	None			>6.0			Moderate.
Miami: MmA, MmB2, MmC2, [1] MkD2, MkF2	B	None			>6.0			Moderate.
Ockley: OcA, OcB2	B	None			>6.0			Moderate.
Ragsdale: Rg	B/D	None			0–1.0	Apparent	Dec–May	High.
Shoals: Sh	C	Frequent	Brief	Oct–Jun	1.0–3.0	Apparent	Jan–Apr	High.
Sleeth: Sk	C	None			1.0–3.0	Apparent	Jan–Apr	High.
Sloan: Sn	B/D	Frequent	Long	Oct–Jun	0–0.5	Apparent	Nov–Jun	High.
Urban land:								
[1] UbA:								
Brookston part	B/D	Frequent	Brief	Dec–May	0–1.0	Apparent	Dec–May	High.
[1] UcC:								
Crosby part	C	None			1.0–3.0	Apparent	Jan–Apr	High.
[1] UfA:								
Fox part	D	None			>6.0			Moderate.
[1] UfC:								
Fox part	B	None			>6.0			Moderate.
[1] UgI:								
Genesee part	B	Frequent	Brief	Oct–Jun	>6.0			Moderate.
[1] UmB:								
Miami part	B	None			>6.0			Moderate.
[1] UmC:								
Miami part	B	None			>6.0			Moderate.
[1] Uw:								
Westland part	B/D	Frequent	Brief	Dec–May	0–1.0	Apparent	Dec–May	High.
Westland: We	B/D	Frequent	Brief	Dec–May	0–1.0	Apparent	Dec–May	High.
Whitaker: Wh	C	None			1.0–3.0	Apparent	Jan–Apr	High.

[1] This mapping unit is made up of two or more dominant kinds of soil. See mapping unit description for the composition and behavior of the whole mapping unit.

TABLE 205-01: Soil and Water Features for Marion County, Indiana
(SOURCE: NRCS, Soil Survey of Marion county, Indiana, 1991)

Cover Description	Curve Numbers for Hydrologic Soil Groups				
Cover Type and Hydrologic Condition	Average Percent Impervious Area [2]	A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3]					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
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 (townhouses)	65	77	85	90	92
0.25 acre	38	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	65	77	82
Developing Urban Areas					
Newly graded areas (pervious area only, no vegetation)		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in *Table 205-04*).					

1 *Average runoff condition, and $I_a = 0.2S$*

2 *The average percent impervious area shown was used to develop the composite CNs. Other assumptions are as follows: Impervious areas are directly connected to the drainage system, impervious areas have a CN 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.*

3 *CNs shown are equivalent to those of pasture. Composite CNs may be computed for other combinations of open space cover type.*

TABLE 205-02: Runoff Curve Numbers for Urban Areas
(SOURCE: 210-VI-TR-55, Second Ed., June 1986)

Cover Description	Curve Numbers for Hydrologic Soil Groups			
Cover Type and Hydrologic Condition	A	B	C	D
Cultivated Land (Row Crops)				
With conservation treatment	72	81	88	91
Without conservation treatment	62	71	78	81
Pasture or Range Land				
Poor condition	68	79	86	89
Good condition	39	61	74	80
Meadow				
Good condition	30	58	71	78
Wood or Forest Land				
Thin stand, poor cover, no mulch	45	66	77	83
Good cover	25	55	70	77

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			
Cover Type and Hydrologic Condition	A	B	C	D
Pasture, grassland or range with continuous forage for grazing.				
Poor	68	79	86	89
Fair	49	69	79	84
Good	39	61	74	80
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	56	70	77
Good	30	48	65	73
Woods and grass combination (orchard or tree farm).				
Poor	57	73	82	86
Fair	43	65	76	82
Good	32	58	72	79
Woods				
Poor	45	66	77	83
Fair	36	60	73	79
Good	30	55	70	77
Farmsteads	59	74	82	86

TABLE 205-04: 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 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	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		T.C.=	$\frac{0.01}{2.64^{0.50}}$ x ($\frac{0.17}{0.02^{0.40}}$ x $\frac{100}{}$)$^{0.80}$					=	12 Minutes
Shallow Concentrated	Unpaved:	T.C.=	16.1 x $0.01^{0.5}$ =			1.61	ft/sec		
				=		2750	feet	=	28 Minutes
						1.61	ft/sec		
	Paved:	T.C.=	20.3 x $0.01^{0.5}$ =			2.03	ft/sec		
				=		0	feet	=	0 Minutes
						2.03	ft/sec		
	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

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

CN (weighted) = $\frac{502.1}{7.4}$

CN (weighted) = **67.9**

US CN = **68**

Time of Concentration

Sheet Flow	T.C.= $\frac{0.01 \times (0.17 \times 100)^{0.80}}{2.64^{0.50} \quad 0.03^{0.40}}$ =			10 Minutes
Shallow Concentrated	Unpaved: T.C.= 16.1 x $0.02^{0.5}$ =	2.28 ft/sec = 431 feet 2.28 ft/sec	=	3 Minutes
	Paved: T.C.= 20.3 x $0.01^{0.5}$ =	2.03 ft/sec = 0 feet 2.03 ft/sec	=	0 Minutes
	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.

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 (hrs)	Outflow cfs)	Time (hrs)	Outflow cfs)	Time (hrs)	Outflow 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	Peak discharge	= 0.61 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Drainage area	= 7.40 ac	Curve number	= 68
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 13.0 min
Total precip.	= 2.64 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	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.

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	= 19.08 cfs
Storm frequency	= 10 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.	= 2.40 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 94,700 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow 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	Peak discharge	= 2.17 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Drainage area	= 7.40 ac	Curve number	= 68
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 13.0 min
Total precip.	= 2.40 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 9,268 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow 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.

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 -- (hrs	Outflow 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	Peak discharge	= 6.76 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 7.40 ac	Curve number	= 68
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 13.0 min
Total precip.	= 2.88 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 15,196 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow 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: 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 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.= $\frac{0.01 \times (0.17 \times 80)^{0.80}}{2.64^{0.50} \quad 0.01^{0.40}}$ =			13 Minutes
Shallow Concentrated	Unpaved: T.C.= 16.1 x $0.01^{0.5}$ =	1.61 ft/sec		
	=	276 feet	=	3 Minutes
		1.61 ft/sec		
	Paved: T.C.= 20.3 x $0.0018^{0.5}$ =	0.86 ft/sec		
	=	0 feet	=	0 Minutes
		0.86 ft/sec		
Channel Flow	X-sec 1.77 Mann 'N' 0.013	2.52 ft/sec		
	Wet Per. 4.71 Flow Length	1210 feet	=	8 Minutes
	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: 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'	1/4 ac. Residential Districts	75	8.73	654.8
CrA 'C'	1/4 ac. Residential Districts	83	7.00	581.0
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=	15.73	1235.75

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

CN (weighted) = $\frac{1235.8}{15.7}$

CN (weighted) = **78.6**

US CN = **79**

Time of Concentration

Sheet Flow	T.C.= $\frac{0.01 \times (0.17 \times 80)^{0.80}}{2.64^{0.50} \quad 0.01^{0.40}}$ =				13 Minutes
Shallow Concentrated	Unpaved:	T.C.= 16.1 x $0.01^{0.5}$ =	1.61 ft/sec		
		=	293 feet	=	3 Minutes
			1.61 ft/sec		
	Paved:	T.C.= 20.3 x $0.0018^{0.5}$ =	0.86 ft/sec		
		=	0 feet	=	0 Minutes
			0.86 ft/sec		
Channel Flow	X-sec 1.77	Mann 'N' 0.013	2.52 ft/sec		
	Wet Per. 4.71	Flow Length	722 feet	=	5 Minutes
	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: 8/12/15

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 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, "B'	1/4 ac. Residential Districts	75	11.05	828.8
CrA 'C'	1/4 ac. Residential Districts	83	8.68	720.4
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=	19.73	1549.19

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

CN (weighted) = $\frac{1549.2}{19.7}$

CN (weighted) = **78.5**

US CN = **79**

Time of Concentration

Sheet Flow	T.C.= $\frac{0.01 \times (0.17 \times 80)^{0.80}}{2.64^{0.50} \quad 0.01^{0.40}}$ =				13 Minutes
Shallow Concentrated	Unpaved: T.C.= 16.1 x $0.01^{0.5}$ =	1.61 ft/sec			
	=	180 feet	=		2 Minutes
		1.61 ft/sec			
	Paved: T.C.= 20.3 x $0.0018^{0.5}$ =	0.86 ft/sec			
	=	0 feet	=		0 Minutes
		0.86 ft/sec			
Channel Flow	X-sec 1.77 Mann 'N' 0.013	2.52 ft/sec			
	Wet Per. 4.71 Flow Length	820 feet	=		5 Minutes
	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: 8/12/15

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	3.50	262.5
CrA 'C'	1/4 ac. Residential Districts	83	3.00	249.0
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=	6.50	511.50

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

CN (weighted) = $\frac{511.5}{6.5}$

CN (weighted) = **78.7**

US CN = **79**

Time of Concentration

Sheet Flow	T.C.= $\frac{0.01 \times (0.17 \times 80)^{0.80}}{2.64^{0.50} \quad 0.01^{0.40}}$ =			13 Minutes
Shallow Concentrated	Unpaved: T.C.= 16.1 x $0.013^{0.5}$ =	1.84 ft/sec		
	=	423 feet	=	4 Minutes
		1.84 ft/sec		
	Paved: T.C.= 20.3 x $0.0018^{0.5}$ =	0.86 ft/sec		
	=	0 feet	=	0 Minutes
		0.86 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**

Pond Report

Hydraflow Hydrographs by Intelisolve — 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	= ---	---	---	---
Multi-Stage	= No	No	No	No

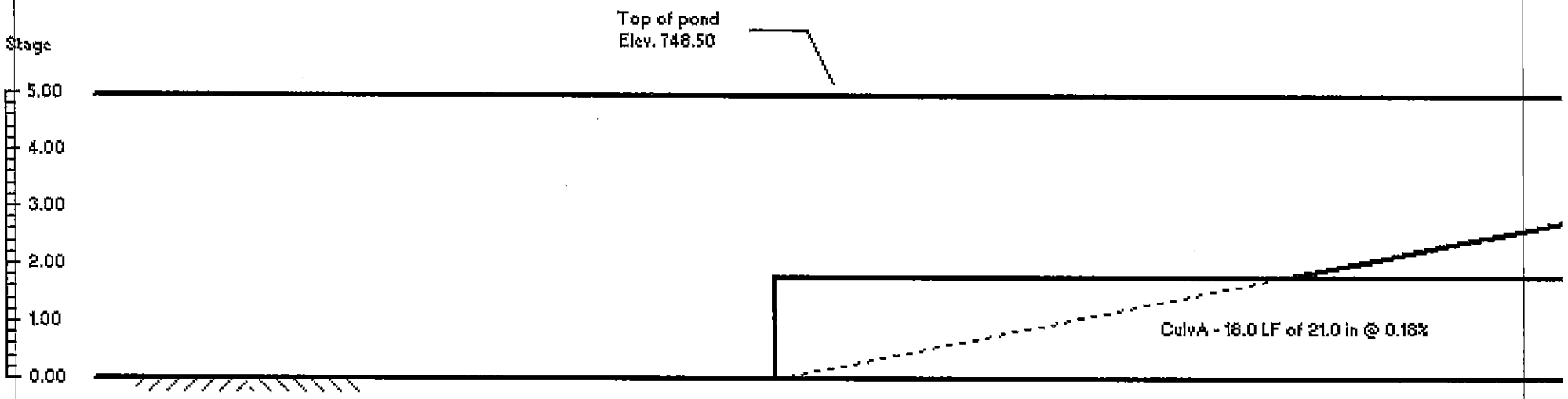
Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

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

Stage / Storage / Discharge Table

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	743.55	0.00	---	---	---	---	---	---	---	---	0.00
1.45	98,922	745.00	2.36	---	---	---	---	---	---	---	---	2.36
2.45	174,026	746.00	12.43	---	---	---	---	---	---	---	---	12.43
3.45	254,818	747.00	18.58	---	---	---	---	---	---	---	---	18.58
4.45	341,355	748.00	21.89	---	---	---	---	---	---	---	---	21.89
4.95	386,793	748.50	23.38	---	---	---	---	---	---	---	---	23.38

Pond 1



Section

NTS

* Side slope estimated average from contours

Schematic only. Not for construction.

Hydraflow Hydrographs Pond Draw	Project: 15015 Post 1-2-3.gpw	Wednesday, Aug 12 2015, 1:27 PM

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

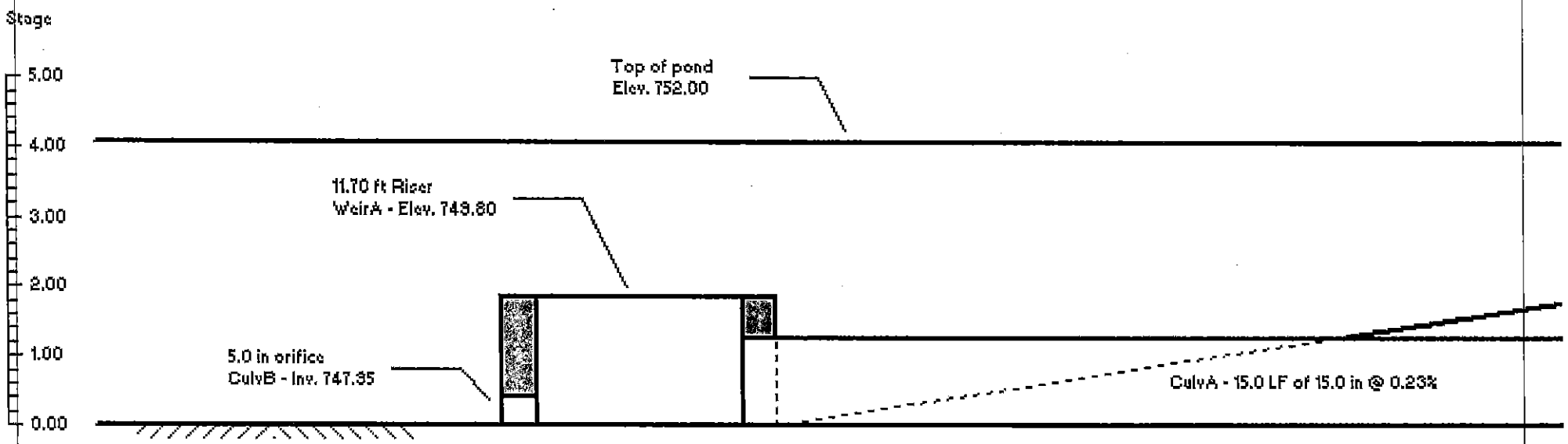
Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

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



Section

NTS

* Side slope estimated average from contours

Schematic only. Not for construction.

Hydraflow Hydrographs Pond Draw	Project: 15015 Post 1-2-3.gpw	Wednesday, Aug 12 2015, 1:27 PM

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

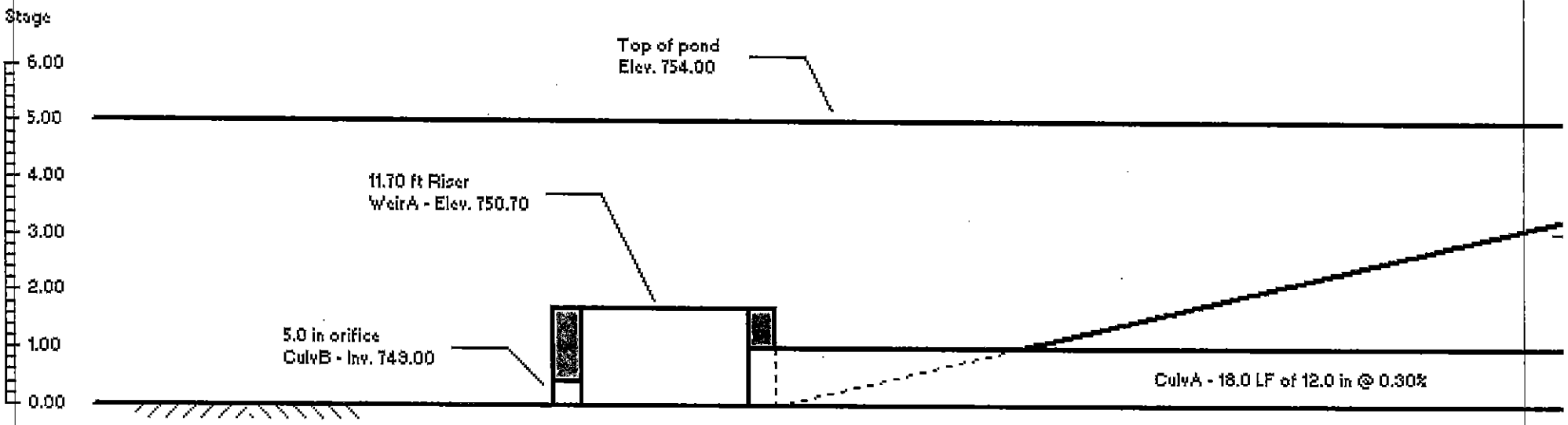
Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

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

* Side slope estimated average from contours

Schematic only. Not for construction.

Hydraflow Hydrographs Pond Draw	Project: 15015 Post 1-2-3.gpw	Wednesday, Aug 12 2015, 1:28 PM

Pond Report

Hydraflow Hydrographs by Intelisolve

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

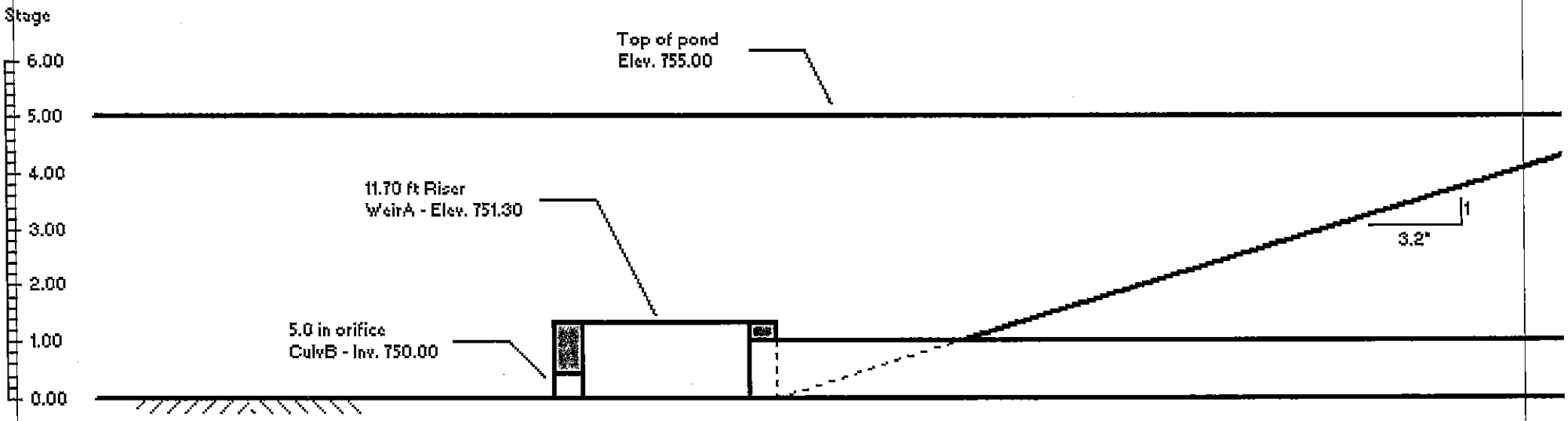
Exfiltration = 0.000 in/hr (Contour) Tailwater Elev. = 0.00 ft

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

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	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	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.

Hydraflow Hydrographs Pond Draw	Project: 15015 Post 4.gpw	Wednesday, Aug 12 2015, 1:20 PM

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	3.93	3	39	10,671	----	------	------	Onsite 3-1 hr.
2	SCS Runoff	4.29	3	54	18,682	----	------	------	Onsite 3-2 hr.
3	SCS Runoff	3.98	3	63	24,178	----	------	------	Onsite 3-3 hr.
4	SCS Runoff	3.24	3	96	35,668	----	------	------	Onsite 3-6 hr.
5	SCS Runoff	3.62	3	327	53,850	----	------	------	Onsite 3-12 hr.
6	SCS Runoff	2.96	3	936	65,121	----	------	------	Onsite 3-24 hr.
7	Reservoir	0.09	3	93	9,841	1	749.23	10,453	Thru Pond 3 - 1 hr.
8	Reservoir	0.21	3	150	17,624	2	749.39	17,832	Thru Pond 3 - 2 hr.
9	Reservoir	0.27	3	207	23,007	3	749.49	22,521	Thru Pond 3 - 3 hr.
10	Reservoir	0.36	3	384	34,283	4	749.68	31,040	Thru Pond 3 - 6 hr.
11	Reservoir	0.46	3	738	52,099	5	749.96	43,900	Thru Pond 3 - 12 hr.
12	Reservoir	0.50	3	1455	62,897	6	750.07	49,175	Thru Pond 3 - 24 hr.
13	SCS Runoff	3.13	3	39	8,508	----	------	------	Onsite 2-1 hr.
14	SCS Runoff	3.42	3	54	14,894	----	------	------	Onsite 2-2 hr.
15	SCS Runoff	3.17	3	63	19,276	----	------	------	Onsite 2-3 hr.
16	SCS Runoff	2.58	3	96	28,437	----	------	------	Onsite 2-6 hr.
17	SCS Runoff	2.88	3	327	42,932	----	------	------	Onsite 2-12 hr.
18	SCS Runoff	2.36	3	936	51,918	----	------	------	Onsite 2-24 hr.
19	Combine	3.15	3	42	18,349	7, 13,	------	------	Total to Pond 2 - 1 hr.
20	Combine	3.45	3	54	32,518	8, 14,	------	------	Total to Pond 2 - 2 hr.
21	Combine	3.20	3	63	42,283	9, 15,	------	------	Total to Pond 2 - 3 hr.
22	Combine	2.63	3	99	62,720	10, 16,	------	------	Total to Pond 2 - 6 hr.
23	Combine	3.04	3	330	95,032	11, 17,	------	------	Total to Pond 2 - 12 hr.
24	Combine	2.67	3	936	114,815	12, 18,	------	------	Total to Pond 2 - 24 hr.
25	Reservoir	0.06	3	591	15,536	19	748.13	9,031	Thru Pond 2 - 1 hr.
26	Reservoir	0.15	3	477	29,109	20	748.27	15,808	Thru Pond 2 - 2 hr.
27	Reservoir	0.22	3	507	38,611	21	748.36	20,292	Thru Pond 2 - 3 hr.
28	Reservoir	0.31	3	603	58,577	22	748.54	29,696	Thru Pond 2 - 6 hr.
29	Reservoir	0.43	3	885	90,154	23	748.84	44,571	Thru Pond 2 - 12 hr.
30	Reservoir	0.50	3	1476	109,111	24	749.02	53,682	Thru Pond 2 - 24 hr.

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	36,461	25, 31,	------	------	Total to Pond1 - 1 hr.
38	Combine	8.42	3	54	65,744	26, 32,	------	------	Total to Pond1 - 2 hr.
39	Combine	7.82	3	63	86,023	27, 33,	------	------	Total to Pond1 - 3 hr.
40	Combine	6.37	3	99	128,521	28, 34,	------	------	Total to Pond1 - 6 hr.
41	Combine	7.19	3	327	195,752	29, 35,	------	------	Total to Pond1 - 12 hr.
42	Combine	6.06	3	936	236,810	30, 36,	------	------	Total to Pond1 - 24 hr.
43	Reservoir	0.26	3	93	33,772	37	743.85	20,433	Thru Pond 1 - 1 hr.
44	Reservoir	0.61	3	147	62,232	38	744.06	34,767	Thru Pond 1 - 2 hr.
45	Reservoir	0.85	3	207	82,111	39	744.19	43,673	Thru Pond 1 - 3 hr.
46	Reservoir	1.27	3	381	123,815	40	744.41	58,457	Thru Pond 1 - 6 hr.
47	Reservoir	1.80	3	732	189,578	41	744.68	76,812	Thru Pond 1 - 12 hr.
48	Reservoir	1.92	3	1311	228,794	42	744.74	81,283	Thru Pond 1 - 1 hr.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:23 PM

Hyd. No. 2

Onsite 3-2 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 4.29 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Drainage area	= 19.73 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20.0 min
Total precip.	= 1.52 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 18,682 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs	Outflow cfs)
0.60	2.65
0.65	3.18
0.70	3.64
0.75	3.95
0.80	4.16
0.85	4.26
0.90	4.29 <<
0.95	4.22
1.00	4.12
1.05	3.97
1.10	3.77
1.15	3.54
1.20	3.29
1.25	3.05
1.30	2.85
1.35	2.70
1.40	2.58
1.45	2.49
1.50	2.44
1.55	2.43
1.60	2.44
1.65	2.47
1.70	2.50
1.75	2.49
1.80	2.43
1.85	2.34
1.90	2.20

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 6

Onsite 3-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 2.96 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Drainage area	= 19.73 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20.0 min
Total precip.	= 2.64 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 65,121 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs	cfs)	Time -- Outflow (hrs	cfs)	Time -- Outflow (hrs	cfs)
13.50	1.55	15.20	2.81	16.90	2.21
13.55	1.65	15.25	2.83	16.95	2.15
13.60	1.75	15.30	2.85	17.00	2.06
13.65	1.83	15.35	2.87	17.05	1.95
13.70	1.90	15.40	2.89	17.10	1.85
13.75	1.95	15.45	2.91	17.15	1.77
13.80	1.99	15.50	2.93	17.20	1.70
13.85	2.01	15.55	2.95	17.25	1.64
13.90	2.04	15.60	2.96 <<	17.30	1.60
13.95	2.06	15.65	2.95	17.35	1.57
14.00	2.09	15.70	2.91	17.40	1.56
14.05	2.11	15.75	2.84	17.45	1.56
14.10	2.13	15.80	2.74	17.50	1.57
14.15	2.15	15.85	2.61	17.55	1.57
14.20	2.18	15.90	2.50	17.60	1.57
14.25	2.20	15.95	2.40	17.65	1.58
14.30	2.22	16.00	2.32	17.70	1.58
14.35	2.24	16.05	2.26	17.75	1.58
14.40	2.26	16.10	2.21	17.80	1.59
14.45	2.29	16.15	2.19	17.85	1.59
14.50	2.32	16.20	2.18	17.90	1.59
14.55	2.36	16.25	2.18	17.95	1.59
14.60	2.41	16.30	2.19	18.00	1.60
14.65	2.46	16.35	2.20	18.05	1.58
14.70	2.51	16.40	2.21	18.10	1.55
14.75	2.55	16.45	2.22	18.15	1.51
14.80	2.59	16.50	2.22		
14.85	2.63	16.55	2.23		
14.90	2.67	16.60	2.24	*...End*	
14.95	2.69	16.65	2.25		
15.00	2.72	16.70	2.26		
15.05	2.74	16.75	2.26		
15.10	2.76	16.80	2.27		
15.15	2.78	16.85	2.25		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 12

Thru Pond 3 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 0.50 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyd. No.	= 6	Reservoir name	= Pond 3
Max. Elevation	= 750.07 ft	Max. Storage	= 49,175 cuft

Storage Indication method used.

Outflow hydrograph volume = 62,897 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
23.65	0.88	750.05	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.70	0.88	750.05	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
23.75	0.88	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
23.80	0.88	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
23.85	0.88	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
23.90	0.88	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
23.95	0.88	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.00	0.88	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.05	0.85	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.10	0.80	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.15	0.72	750.07	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.20	0.61	750.07	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.25	0.47	750.07 <<	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50 <<
24.30	0.36	750.07	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.35	0.25	750.07	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.40	0.17	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.45	0.10	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.50	0.05	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.55	0.02	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.60	0.00	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.65	0.00	750.06	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.70	0.00	750.05	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.75	0.00	750.05	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.80	0.00	750.05	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.85	0.00	750.05	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.90	0.00	750.05	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.95	0.00	750.05	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.00	0.00	750.04	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.05	0.00	750.04	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.10	0.00	750.04	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.15	0.00	750.04	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.20	0.00	750.04	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.25	0.00	750.04	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.30	0.00	750.03	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.35	0.00	750.03	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.40	0.00	750.03	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.45	0.00	750.03	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.50	0.00	750.03	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
25.55	0.00	750.03	0.49	0.49	-----	-----	-----	-----	-----	-----		[illegible]

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 14

Onsite 2-2 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 3.42 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Drainage area	= 15.73 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 21.0 min
Total precip.	= 1.52 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 14,894 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs	Outflow cfs)
0.60	2.11
0.65	2.54
0.70	2.90
0.75	3.15
0.80	3.32
0.85	3.40
0.90	3.42 <<
0.95	3.36
1.00	3.28
1.05	3.17
1.10	3.01
1.15	2.82
1.20	2.63
1.25	2.43
1.30	2.27
1.35	2.15
1.40	2.05
1.45	1.98
1.50	1.94
1.55	1.94
1.60	1.94
1.65	1.97
1.70	1.99
1.75	1.98
1.80	1.94
1.85	1.86
1.90	1.75

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 20

Total to Pond 2 - 2 hr.

Hydrograph type	= Combine	Peak discharge	= 3.45 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyds.	= 8, 14		

Hydrograph Volume = 32,518 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 8 + (cfs)	Hyd. 14 + (cfs)	Outflow (cfs)
0.70	0.01	2.90	2.91
0.75	0.01	3.15	3.16
0.80	0.02	3.32	3.34
0.85	0.02	3.40	3.42
0.90	0.03	3.42 <<	3.45 <<
0.95	0.04	3.36	3.40
1.00	0.04	3.28	3.33
1.05	0.05	3.17	3.22
1.10	0.06	3.01	3.07
1.15	0.07	2.82	2.89
1.20	0.08	2.63	2.70

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 24

Total to Pond 2 - 24 hr.

Hydrograph type	= Combine	Peak discharge	= 2.67 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyds.	= 12, 18		

Hydrograph Volume = 114,815 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 12 + (cfs)	Hyd. 18 + (cfs)	Outflow (cfs)
14.45	0.18	1.83	2.00
14.50	0.18	1.85	2.03
14.55	0.19	1.88	2.07
14.60	0.20	1.92	2.12
14.65	0.20	1.96	2.16
14.70	0.21	2.00	2.21
14.75	0.22	2.04	2.25
14.80	0.22	2.07	2.29
14.85	0.23	2.10	2.33
14.90	0.23	2.12	2.36
14.95	0.24	2.15	2.39
15.00	0.24	2.17	2.41
15.05	0.25	2.19	2.44
15.10	0.25	2.20	2.46
15.15	0.26	2.22	2.48
15.20	0.27	2.24	2.50
15.25	0.27	2.25	2.52
15.30	0.28	2.27	2.55
15.35	0.28	2.29	2.57
15.40	0.29	2.30	2.59
15.45	0.29	2.32	2.61
15.50	0.29	2.33	2.63
15.55	0.30	2.35	2.65
15.60	0.30	2.36 <<	2.67 <<
15.65	0.31	2.36	2.66
15.70	0.31	2.32	2.64
15.75	0.32	2.27	2.59
15.80	0.32	2.19	2.51
15.85	0.33	2.08	2.41
15.90	0.33	1.99	2.32
15.95	0.33	1.92	2.25
16.00	0.34	1.85	2.19
16.05	0.34	1.80	2.14
16.10	0.34	1.77	2.11
16.15	0.35	1.74	2.09
16.20	0.35	1.74	2.09
16.25	0.35	1.74	2.10
16.30	0.36	1.75	2.10

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 30

Thru Pond 2 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 0.50 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyd. No.	= 24	Reservoir name	= Pond 2
Max. Elevation	= 749.02 ft	Max. Storage	= 53,682 cuft

Storage Indication method used.

Outflow hydrograph volume = 109,111 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
[illegible]	[illegible]	[illegible]	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.05	1.06	748.96	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.10	1.09	748.97	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.15	1.12	748.97	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.20	1.14	748.97	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.25	1.16	748.97	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.30	1.17	748.97	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.35	1.18	748.98	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.40	1.19	748.98	0.48	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.45	1.19	748.98	0.49	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.50	1.19	748.98	0.49	0.48	-----	-----	-----	-----	-----	-----	-----	0.48
23.55	1.19	748.99	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.60	1.19	748.99	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.65	1.19	748.99	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.70	1.19	748.99	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.75	1.19	749.00	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.80	1.20	749.00	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.85	1.20	749.00	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.90	1.20	749.00	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
23.95	1.20	749.01	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.00	1.20	749.01	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.05	1.18	749.01	0.49	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.10	1.14	749.01	0.50	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.15	1.07	749.02	0.50	0.49	-----	-----	-----	-----	-----	-----	-----	0.49
24.20	0.99	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.25	0.88	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.30	0.78	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.35	0.70	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.40	0.63	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.45	0.58	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.50	0.54	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.55	0.51	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.60	0.50	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50 <<
24.65	0.50	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.70	0.50	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.75	0.49	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.80	0.49	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.85	0.49	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50
24.90	0.49	749.02	0.50	0.50	-----	-----	-----	-----	-----	-----	-----	0.50

[illegible] page

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 32

Onsite 1-2 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 8.41 cfs
Storm frequency	= 2 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.	= 1.52 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 36,635 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow 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

Wednesday, Aug 12 2015, 1:26 PM

Hyd. No. 36

Onsite 1-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 5.81 cfs
Storm frequency	= 2 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.	= 2.64 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	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

Wednesday, Aug 12 2015, 1:26 PM

Hyd. No. 38

Total to Pond1 - 2 hr.

Hydrograph type	= Combine	Peak discharge	= 8.42 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyds.	= 26, 32		

Hydrograph Volume = 65,744 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	8.18
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	0.03	7.79	7.81
1.10	0.04	7.40	7.43
1.15	0.04	6.94	6.98
1.20	0.05	6.46	6.51

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:27 PM

Hyd. No. 42

Total to Pond1 - 24 hr.

Hydrograph type	= Combine	Peak discharge	= 6.06 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyds.	= 30, 36		

Hydrograph Volume = 236,810 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
14.40	0.11	4.44	4.55
14.45	0.12	4.49	4.61
14.50	0.12	4.56	4.68
14.55	0.13	4.63	4.76
14.60	0.13	4.72	4.85
14.65	0.14	4.82	4.96
14.70	0.14	4.92	5.06
14.75	0.15	5.01	5.16
14.80	0.15	5.09	5.24
14.85	0.16	5.16	5.32
14.90	0.16	5.23	5.39
14.95	0.17	5.28	5.46
15.00	0.18	5.33	5.51
15.05	0.18	5.38	5.56
15.10	0.19	5.42	5.61
15.15	0.19	5.46	5.65
15.20	0.20	5.50	5.70
15.25	0.21	5.54	5.75
15.30	0.21	5.58	5.79
15.35	0.22	5.62	5.84
15.40	0.22	5.66	5.88
15.45	0.23	5.70	5.93
15.50	0.23	5.74	5.97
15.55	0.24	5.78	6.01
15.60	0.24	5.81 <<	6.06 <<
15.65	0.25	5.79	6.04
15.70	0.25	5.71	5.97
15.75	0.26	5.58	5.83
15.80	0.26	5.38	5.64
15.85	0.26	5.12	5.39
15.90	0.27	4.90	5.17
15.95	0.27	4.71	4.98
16.00	0.27	4.55	4.83
16.05	0.28	4.43	4.71
16.10	0.28	4.34	4.62
16.15	0.28	4.29	4.57
16.20	0.29	4.27	4.56
16.25	0.29	4.28	4.58

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:27 PM

Hyd. No. 48

Thru Pond 1 - 1 hr.

Hydrograph type	= Reservoir	Peak discharge	= 1.92 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyd. No.	= 42	Reservoir name	= Pond 1
Max. Elevation	= 744.74 ft	Max. Storage	= 81,283 cuft

Storage Indication method used.

Outflow hydrograph volume = 228,794 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
[illegible]	[illegible]	[illegible]	[illegible]									[illegible]
21.15	2.12	744.74	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
21.20	2.12	744.74	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
21.25	2.12	744.74	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
21.30	2.12	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.35	2.12	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.40	2.13	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.45	2.13	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.50	2.13	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.55	2.13	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.60	2.14	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.65	2.12	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.70	2.09	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.75	2.04	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.80	1.97	744.74 <<	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.85	1.89	744.74 <<	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92 <<
21.90	1.81	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
21.95	1.75	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
22.00	1.70	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
22.05	1.65	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
22.10	1.62	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
22.15	1.60	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
22.20	1.59	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
22.25	1.59	744.74	1.92	-----	-----	-----	-----	-----	-----	-----	-----	1.92
22.30	1.59	744.74	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
22.35	1.60	744.73	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
22.40	1.60	744.73	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
22.45	1.60	744.73	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
22.50	1.60	744.73	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
22.55	1.60	744.73	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
22.60	1.60	744.73	1.91	-----	-----	-----	-----	-----	-----	-----	-----	1.91
22.65	1.60	744.73	1.90	-----	-----	-----	-----	-----	-----	-----	-----	1.90
22.70	1.60	744.73	1.90	-----	-----	-----	-----	-----	-----	-----	-----	1.90
22.75	1.60	744.73	1.90	-----	-----	-----	-----	-----	-----	-----	-----	1.90
22.80	1.61	744.73	1.90	-----	-----	-----	-----	-----	-----	-----	-----	1.90
22.85	1.62	744.73	1.90	-----	-----	-----	-----	-----	-----	-----	-----	1.90
18.50	2.57	744.68	1.82	-----	-----	-----	-----	-----	-----	-----	-----	1.82
18.55	2.54	744.68	1.82	-----	-----	-----	-----	-----	-----	-----	-----	1.82

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	1.46	3	36	3,718	----	------	------	Onsite 4-1 hr.
2	SCS Runoff	1.52	3	48	6,510	----	------	------	Onsite 4-2 hr.
3	SCS Runoff	1.40	3	60	8,425	----	------	------	Onsite 4-3 hr.
4	SCS Runoff	1.14	3	96	12,429	----	------	------	Onsite 4-6 hr.
5	SCS Runoff	1.28	3	327	18,764	----	------	------	Onsite 4-12 hr.
6	SCS Runoff	1.04	3	936	22,692	----	------	------	Onsite 4-24 hr.
7	Reservoir	0.02	3	87	3,506	1	750.10	3,665	Thru Pond 4 - 1 hr.
8	Reservoir	0.06	3	144	6,189	2	750.17	6,284	Thru Pond 4 - 2 hr.
9	Reservoir	0.09	3	204	8,054	3	750.22	7,943	Thru Pond 4 - 3 hr.
10	Reservoir	0.15	3	378	11,979	4	750.30	10,779	Thru Pond 4 - 6 hr.
11	Reservoir	0.23	3	729	18,203	5	750.39	14,288	Thru Pond 4 - 12 hr.
12	Reservoir	0.25	3	1446	21,963	6	750.42	15,208	Thru Pond 4 - 24 hr.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:19 PM

Hyd. No. 2

Onsite 4-2 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 1.52 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Drainage area	= 6.50 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 17.0 min
Total precip.	= 1.52 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 6,510 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.55	0.93
0.60	1.15
0.65	1.32
0.70	1.44
0.75	1.51
0.80	1.52 <<
0.85	1.51
0.90	1.48
0.95	1.44
1.00	1.40
1.05	1.34
1.10	1.24
1.15	1.15
1.20	1.06
1.25	0.98
1.30	0.92
1.35	0.87
1.40	0.85
1.45	0.84
1.50	0.84
1.55	0.85
1.60	0.86
1.65	0.87
1.70	0.88
1.75	0.87
1.80	0.84
1.85	0.78

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:20 PM

Hyd. No. 6

Onsite 4-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 1.04 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Drainage area	= 6.50 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 17.0 min
Total precip.	= 2.64 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 22,692 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)	
13.45	0.54	15.15	0.98	16.85	0.78
13.50	0.58	15.20	0.98	16.90	0.76
13.55	0.62	15.25	0.99	16.95	0.73
13.60	0.65	15.30	1.00	17.00	0.68
13.65	0.67	15.35	1.01	17.05	0.64
13.70	0.69	15.40	1.01	17.10	0.61
13.75	0.69	15.45	1.02	17.15	0.58
13.80	0.70	15.50	1.03	17.20	0.56
13.85	0.71	15.55	1.03	17.25	0.55
13.90	0.72	15.60	1.04 <<	17.30	0.54
13.95	0.73	15.65	1.03	17.35	0.54
14.00	0.73	15.70	1.01	17.40	0.55
14.05	0.74	15.75	0.97	17.45	0.55
14.10	0.75	15.80	0.91	17.50	0.55
14.15	0.76	15.85	0.87	17.55	0.55
14.20	0.77	15.90	0.83	17.60	0.55
14.25	0.77	15.95	0.80	17.65	0.55
14.30	0.78	16.00	0.78	17.70	0.55
14.35	0.79	16.05	0.76	17.75	0.55
14.40	0.80	16.10	0.76	17.80	0.55
14.45	0.81	16.15	0.76	17.85	0.55
14.50	0.82	16.20	0.76	17.90	0.56
14.55	0.84	16.25	0.76	17.95	0.56
14.60	0.86	16.30	0.77	18.00	0.56
14.65	0.88	16.35	0.77	18.05	0.55
14.70	0.89	16.40	0.77	18.10	0.53
14.75	0.91	16.45	0.78		
14.80	0.92	16.50	0.78		
14.85	0.93	16.55	0.78	*...End*	
14.90	0.94	16.60	0.78		
14.95	0.95	16.65	0.79		
15.00	0.96	16.70	0.79		
15.05	0.96	16.75	0.79		
15.10	0.97	16.80	0.79		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:20 PM

Hyd. No. 12

Thru Pond 4 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 0.25 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyd. No.	= 6	Reservoir name	= Pond 4
Max. Elevation	= 750.42 ft	Max. Storage	= 15,208 cuft

Storage Indication method used.

Outflow hydrograph volume = 21,963 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
23.90	0.31	750.42	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25
23.95	0.31	750.42	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25
24.00	0.31	750.42	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25
24.05	0.29	750.42	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25
24.10	0.26	750.42 <<	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25 <<
24.15	0.22	750.42 <<	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25
24.20	0.17	750.42	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25
24.25	0.12	750.42	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25
24.30	0.08	750.41	0.25	0.25	-----	-----	-----	-----	-----	-----	-----	0.25
24.35	0.05	750.41	0.25	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.40	0.02	750.41	0.25	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.45	0.01	750.41	0.25	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.50	0.00	750.41	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.55	0.00	750.41	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.60	0.00	750.41	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.65	0.00	750.41	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.70	0.00	750.41	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.75	0.00	750.40	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.80	0.00	750.40	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.85	0.00	750.40	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.90	0.00	750.40	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
24.95	0.00	750.40	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
25.00	0.00	750.40	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
25.05	0.00	750.40	0.24	0.24	-----	-----	-----	-----	-----	-----	-----	0.24
25.10	0.00	750.40	0.24	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.15	0.00	750.40	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.20	0.00	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.25	0.00	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.30	0.00	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.35	0.00	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.40	0.00	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.45	0.00	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.50	0.00	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.55	0.00	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
25.60	0.00	750.39	0.23	0.22	-----	-----	-----	-----	-----	-----	-----	0.22
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]								0.23
18.70	0.38	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23
18.75	0.38	750.39	0.23	0.23	-----	-----	-----	-----	-----	-----	-----	0.23

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	13.39	3	36	34,528	----	------	------	Onsite 3-1 hr.
2	SCS Runoff	13.25	3	45	53,768	----	------	------	Onsite 3-2 hr.
3	SCS Runoff	11.58	3	54	65,078	----	------	------	Onsite 3-3 hr.
4	SCS Runoff	8.46	3	93	89,140	----	------	------	Onsite 3-6 hr.
5	SCS Runoff	7.62	3	327	114,803	----	------	------	Onsite 3-12 hr.
6	SCS Runoff	6.01	3	936	141,658	----	------	------	Onsite 3-24 hr.
7	Reservoir	0.38	3	90	33,210	1	749.73	33,418	Thru Pond 3 - 1 hr.
8	Reservoir	0.51	3	147	52,173	2	750.10	51,038	Thru Pond 3 - 2 hr.
9	Reservoir	0.57	3	207	63,325	3	750.29	60,644	Thru Pond 3 - 3 hr.
10	Reservoir	0.67	3	384	87,047	4	750.65	78,805	Thru Pond 3 - 6 hr.
11	Reservoir	1.75	3	651	112,427	5	750.80	86,337	Thru Pond 3 - 12 hr.
12	Reservoir	2.61	3	1095	138,785	6	750.84	88,560	Thru Pond 3 - 24 hr.
13	SCS Runoff	10.68	3	36	27,528	----	------	------	Onsite 2-1 hr.
14	SCS Runoff	10.56	3	45	42,868	----	------	------	Onsite 2-2 hr.
15	SCS Runoff	9.23	3	54	51,885	----	------	------	Onsite 2-3 hr.
16	SCS Runoff	6.74	3	93	71,068	----	------	------	Onsite 2-6 hr.
17	SCS Runoff	6.08	3	327	91,528	----	------	------	Onsite 2-12 hr.
18	SCS Runoff	4.79	3	936	112,938	----	------	------	Onsite 2-24 hr.
19	Combine	10.80	3	36	60,738	7, 13,	------	------	Total to Pond 2 - 1 hr.
20	Combine	10.71	3	45	95,040	8, 14,	------	------	Total to Pond 2 - 2 hr.
21	Combine	9.40	3	54	115,210	9, 15,	------	------	Total to Pond 2 - 3 hr.
22	Combine	7.03	3	93	158,115	10, 16,	------	------	Total to Pond 2 - 6 hr.
23	Combine	6.50	3	327	203,955	11, 17,	------	------	Total to Pond 2 - 12 hr.
24	Combine	5.38	3	936	251,723	12, 18,	------	------	Total to Pond 2 - 24 hr.
25	Reservoir	0.30	3	468	56,724	19	748.52	28,683	Thru Pond 2 - 1 hr.
26	Reservoir	0.43	3	540	90,417	20	748.84	44,452	Thru Pond 2 - 2 hr.
27	Reservoir	0.50	3	582	110,254	21	749.02	53,594	Thru Pond 2 - 3 hr.
28	Reservoir	0.60	3	699	152,414	22	749.37	73,263	Thru Pond 2 - 6 hr.
29	Reservoir	1.72	3	744	197,302	23	749.90	102,834	Thru Pond 2 - 12 hr.
30	Reservoir	2.97	3	1239	243,701	24	749.95	106,185	Thru Pond 2 - 24 hr.

15015 Post 1-2-3.gpw	Return Period: 10 Year	Wednesday, Aug 12 2015, 1:21 PM

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	26.33	3	36	124,433	25, 31,	------	------	Total to Pond1 - 1 hr.
38	Combine	26.07	3	45	195,856	26, 32,	------	------	Total to Pond1 - 2 hr.
39	Combine	22.80	3	54	237,872	27, 33,	------	------	Total to Pond1 - 3 hr.
40	Combine	16.80	3	93	327,216	28, 34,	------	------	Total to Pond1 - 6 hr.
41	Combine	15.29	3	327	422,427	29, 35,	------	------	Total to Pond1 - 12 hr.
42	Combine	12.30	3	936	521,488	30, 36,	------	------	Total to Pond1 - 24 hr.
43	Reservoir	1.45	3	87	119,939	37	744.50	64,671	Thru Pond 1 - 1 hr.
44	Reservoir	2.30	3	144	190,184	38	744.97	96,578	Thru Pond 1 - 2 hr.
45	Reservoir	2.57	3	201	231,470	39	745.18	112,522	Thru Pond 1 - 3 hr.
46	Reservoir	5.20	3	321	319,092	40	745.40	128,712	Thru Pond 1 - 6 hr.
47	Reservoir	6.36	3	486	412,659	41	745.46	133,649	Thru Pond 1 - 12 hr.
48	Reservoir	7.45	3	1029	509,928	42	745.53	138,908	Thru Pond 1 - 1 hr.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:23 PM

Hyd. No. 1

Onsite 3-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 13.39 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Drainage area	= 19.73 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 34,528 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.35	7.04
0.40	9.37
0.45	11.30
0.50	12.59
0.55	13.27
0.60	13.39 <<
0.65	13.09
0.70	12.33
0.75	11.27
0.80	10.29
0.85	9.51
0.90	8.83
0.95	8.22
1.00	7.76
1.05	7.15

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 6

Onsite 3-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 6.01 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Drainage area	= 19.73 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20.0 min
Total precip.	= 4.08 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 141,658 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)	Time (hrs)	Outflow (cfs)
13.40	3.09	15.10	5.76	16.80	4.42
13.45	3.39	15.15	5.78	16.85	4.39
13.50	3.66	15.20	5.81	16.90	4.30
13.55	3.89	15.25	5.84	16.95	4.17
13.60	4.10	15.30	5.86	17.00	4.00
13.65	4.27	15.35	5.89	17.05	3.77
13.70	4.41	15.40	5.91	17.10	3.58
13.75	4.51	15.45	5.94	17.15	3.41
13.80	4.58	15.50	5.96	17.20	3.27
13.85	4.61	15.55	5.99	17.25	3.16
13.90	4.64	15.60	6.01 <<	17.30	3.08
13.95	4.68	15.65	5.97	17.35	3.03
14.00	4.71	15.70	5.88		
14.05	4.74	15.75	5.73		
14.10	4.77	15.80	5.51	*...End*	
14.15	4.80	15.85	5.24		
14.20	4.83	15.90	5.00		
14.25	4.86	15.95	4.80		
14.30	4.89	16.00	4.63		
14.35	4.92	16.05	4.50		
14.40	4.94	16.10	4.40		
14.45	4.98	16.15	4.34		
14.50	5.04	16.20	4.31		
14.55	5.11	16.25	4.32		
14.60	5.18	16.30	4.33		
14.65	5.28	16.35	4.34		
14.70	5.36	16.40	4.35		
14.75	5.44	16.45	4.36		
14.80	5.51	16.50	4.37		
14.85	5.57	16.55	4.38		
14.90	5.62	16.60	4.39		
14.95	5.67	16.65	4.40		
15.00	5.70	16.70	4.40		
15.05	5.73	16.75	4.41		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 12

Thru Pond 3 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 2.61 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Inflow hyd. No.	= 6	Reservoir name	= Pond 3
Max. Elevation	= 750.84 ft	Max. Storage	= 88,560 cuft

Storage Indication method used.

Outflow hydrograph volume = 138,785 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
17.55	3.01	750.81	2.01	0.52	-----	-----	1.49	-----	-----	-----	-----	2.01
17.60	3.02	750.82	2.08	0.51	-----	-----	1.57	-----	-----	-----	-----	2.08
17.65	3.02	750.82	2.14	0.50	-----	-----	1.64	-----	-----	-----	-----	2.14
17.70	3.02	750.82	2.21	0.49	-----	-----	1.71	-----	-----	-----	-----	2.20
17.75	3.03	750.82	2.26	0.49	-----	-----	1.78	-----	-----	-----	-----	2.26
17.80	3.03	750.83	2.31	0.48	-----	-----	1.83	-----	-----	-----	-----	2.31
17.85	3.04	750.83	2.36	0.47	-----	-----	1.89	-----	-----	-----	-----	2.36
17.90	3.04	750.83	2.41	0.47	-----	-----	1.94	-----	-----	-----	-----	2.41
17.95	3.04	750.83	2.45	0.46	-----	-----	1.99	-----	-----	-----	-----	2.45
18.00	3.05	750.84	2.49	0.46	-----	-----	2.03	-----	-----	-----	-----	2.49
18.05	3.02	750.84	2.53	0.45	-----	-----	2.08	-----	-----	-----	-----	2.53
18.10	2.96	750.84	2.56	0.45	-----	-----	2.11	-----	-----	-----	-----	2.56
18.15	2.87	750.84	2.59	0.45	-----	-----	2.14	-----	-----	-----	-----	2.59
18.20	2.74	750.84	2.60	0.45	-----	-----	2.16	-----	-----	-----	-----	2.60
18.25	2.59	750.84 <<	2.61	0.45	-----	-----	2.16	-----	-----	-----	-----	2.61 <<
18.30	2.45	750.84	2.60	0.45	-----	-----	2.15	-----	-----	-----	-----	2.60
18.35	2.34	750.84	2.59	0.45	-----	-----	2.14	-----	-----	-----	-----	2.59
18.40	2.24	750.84	2.57	0.45	-----	-----	2.12	-----	-----	-----	-----	2.57
18.45	2.17	750.84	2.54	0.45	-----	-----	2.09	-----	-----	-----	-----	2.54
18.50	2.11	750.84	2.51	0.46	-----	-----	2.06	-----	-----	-----	-----	2.51
18.55	2.07	750.84	2.48	0.46	-----	-----	2.02	-----	-----	-----	-----	2.48
18.60	2.05	750.83	2.45	0.46	-----	-----	1.99	-----	-----	-----	-----	2.45
18.65	2.05	750.83	2.43	0.47	-----	-----	1.96	-----	-----	-----	-----	2.43
18.70	2.05	750.83	2.40	0.47	-----	-----	1.93	-----	-----	-----	-----	2.40
18.75	2.06	750.83	2.38	0.47	-----	-----	1.91	-----	-----	-----	-----	2.38
18.80	2.06	750.83	2.36	0.48	-----	-----	1.88	-----	-----	-----	-----	2.36
18.85	2.06	750.83	2.34	0.48	-----	-----	1.86	-----	-----	-----	-----	2.34
18.90	2.06	750.83	2.32	0.48	-----	-----	1.84	-----	-----	-----	-----	2.32
18.95	2.06	750.83	2.30	0.48	-----	-----	1.82	-----	-----	-----	-----	2.30
19.00	2.06	750.83	2.28	0.48	-----	-----	1.80	-----	-----	-----	-----	2.28
19.05	2.06	750.82	2.27	0.49	-----	-----	1.78	-----	-----	-----	-----	2.27
19.10	2.07	750.82	2.25	0.49	-----	-----	1.77	-----	-----	-----	-----	2.25
19.15	2.07	750.82	2.24	0.49	-----	-----	1.75	-----	-----	-----	-----	2.24
19.20	2.07	750.82	2.23	0.49	-----	-----	1.74	-----	-----	-----	-----	2.23
19.25	2.05	750.82	2.22	0.49	-----	-----	1.73	-----	-----	-----	-----	2.22
19.30	2.02	750.82	2.21	0.49	-----	-----	1.71	-----	-----	-----	-----	2.20
19.35	1.98	750.82	2.19	0.50	-----	-----	1.70	-----	-----	-----	-----	2.19
19.40	1.91	750.82	2.18	0.50	-----	-----	1.68	-----	-----	-----	-----	2.17

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 13

Onsite 2-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 10.68 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Drainage area	= 15.73 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 21.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 27,528 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs	-- Outflow cfs)
0.35	5.61
0.40	7.47
0.45	9.01
0.50	10.04
0.55	10.58
0.60	10.68 <<
0.65	10.44
0.70	9.83
0.75	8.98
0.80	8.20
0.85	7.58
0.90	7.04
0.95	6.55
1.00	6.19
1.05	5.70

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 19

Total to Pond 2 - 1 hr.

Hydrograph type	= Combine	Peak discharge	= 10.80 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Inflow hyds.	= 7, 13		

Hydrograph Volume = 60,738 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 7 + (cfs)	Hyd. 13 + (cfs)	Outflow (cfs)
0.45	0.03	9.01	9.04
0.50	0.06	10.04	10.09
0.55	0.09	10.58	10.66
0.60	0.12	10.68 <<	10.80 <<
0.65	0.16	10.44	10.60
0.70	0.20	9.83	10.03
0.75	0.23	8.98	9.21
0.80	0.25	8.20	8.46

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 24

Total to Pond 2 - 24 hr.

Hydrograph type	= Combine	Peak discharge	= 5.38 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Inflow hyds.	= 12, 18		

Hydrograph Volume = 251,723 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 12 + (cfs)	Hyd. 18 + (cfs)	Outflow (cfs)
13.85	0.37	3.68	4.05
13.90	0.38	3.70	4.08
13.95	0.39	3.73	4.11
14.00	0.39	3.75	4.15
14.05	0.40	3.78	4.18
14.10	0.41	3.80	4.21
14.15	0.41	3.83	4.24
14.20	0.42	3.85	4.27
14.25	0.43	3.87	4.30
14.30	0.43	3.90	4.33
14.35	0.44	3.92	4.36
14.40	0.45	3.94	4.39
14.45	0.45	3.97	4.43
14.50	0.46	4.02	4.48
14.55	0.47	4.07	4.54
14.60	0.47	4.13	4.61
14.65	0.48	4.21	4.69
14.70	0.48	4.28	4.76
14.75	0.49	4.34	4.83
14.80	0.50	4.39	4.89
14.85	0.50	4.44	4.94
14.90	0.51	4.48	4.99
14.95	0.51	4.52	5.03
15.00	0.52	4.55	5.07
15.05	0.53	4.57	5.10
15.10	0.53	4.59	5.12
15.15	0.54	4.61	5.15
15.20	0.54	4.63	5.18
15.25	0.55	4.65	5.20
15.30	0.55	4.67	5.23
15.35	0.56	4.69	5.25
15.40	0.57	4.71	5.28
15.45	0.57	4.73	5.30
15.50	0.58	4.75	5.33
15.55	0.58	4.77	5.35
15.60	0.59	4.79 <<	5.38 <<
15.65	0.59	4.76	5.36
15.70	0.60	4.69	5.29

Total to Pond 2 - 24 hr.

Hydrograph Discharge Table

Time (hrs)	Hyd. 12 + (cfs)	Hyd. 18 + (cfs)	Outflow (cfs)
15.75	0.60	4.57	5.17
15.80	0.61	4.40	5.00
15.85	0.61	4.18	4.79
15.90	0.62	3.99	4.61
15.95	0.62	3.83	4.45
16.00	0.63	3.69	4.32
16.05	0.63	3.59	4.22
16.10	0.63	3.51	4.14
16.15	0.64	3.46	4.10
16.20	0.64	3.44	4.08
16.25	0.64	3.44	4.09
16.30	0.65	3.45	4.10
16.35	0.65	3.46	4.11
16.40	0.66	3.47	4.12
16.45	0.66	3.48	4.13
16.50	0.66	3.48	4.14
16.55	0.67	3.49	4.16
16.60	0.67	3.50	4.17
16.65	0.67	3.50	4.18
16.70	0.68	3.51	4.19
16.75	0.68	3.52	4.20
16.80	0.70	3.53	4.23
16.85	0.84	3.50	4.34
16.90	0.97	3.43	4.40
16.95	1.10	3.33	4.42
17.00	1.21	3.19	4.40
17.05	1.31	3.01	4.32
17.10	1.40	2.85	4.26
17.15	1.48	2.72	4.20
17.20	1.55	2.61	4.16
17.25	1.62	2.52	4.14
17.30	1.67	2.46	4.13
17.35	1.72	2.41	4.14
17.40	1.77	2.39	4.17
17.45	1.86	2.40	4.26
17.50	1.94	2.40	4.34
17.55	2.01	2.40	4.41
17.60	2.08	2.41	4.49
17.65	2.14	2.41	4.55
17.70	2.20	2.41	4.62
17.75	2.26	2.41	4.68
17.80	2.31	2.42	4.73
17.85	2.36	2.42	4.78
17.90	2.41	2.42	4.83
17.95	2.45	2.43	4.88
18.00	2.49	2.43	4.92
18.05	2.53	2.41	4.94
18.10	2.56	2.36	4.92
18.15	2.59	2.29	4.87
18.20	2.60	2.19	4.79
18.25	2.61 <<	2.06	4.67

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 30

Thru Pond 2 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 2.97 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Inflow hyd. No.	= 24	Reservoir name	= Pond 2
Max. Elevation	= 749.95 ft	Max. Storage	= 106,185 cuft

Storage Indication method used.

Outflow hydrograph volume = 243,701 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
19.35	3.77	749.93	2.32	0.52	-----	-----	1.80	-----	-----	-----	-----	2.32
19.40	3.70	749.93	2.42	0.52	-----	-----	1.90	-----	-----	-----	-----	2.42
19.45	3.62	749.93	2.50	0.52	-----	-----	1.98	-----	-----	-----	-----	2.50
19.50	3.54	749.94	2.57	0.52	-----	-----	2.06	-----	-----	-----	-----	2.57
19.55	3.46	749.94	2.64	0.52	-----	-----	2.12	-----	-----	-----	-----	2.64
19.60	3.40	749.94	2.69	0.51	-----	-----	2.18	-----	-----	-----	-----	2.69
19.65	3.33	749.94	2.74	0.51	-----	-----	2.22	-----	-----	-----	-----	2.74
19.70	3.28	749.95	2.78	0.51	-----	-----	2.26	-----	-----	-----	-----	2.78
19.75	3.24	749.95	2.81	0.51	-----	-----	2.30	-----	-----	-----	-----	2.81
19.80	3.20	749.95	2.84	0.51	-----	-----	2.33	-----	-----	-----	-----	2.84
19.85	3.17	749.95	2.86	0.51	-----	-----	2.35	-----	-----	-----	-----	2.86
19.90	3.15	749.95	2.88	0.51	-----	-----	2.37	-----	-----	-----	-----	2.88
19.95	3.13	749.95	2.90	0.51	-----	-----	2.39	-----	-----	-----	-----	2.90
20.00	3.11	749.95	2.91	0.51	-----	-----	2.40	-----	-----	-----	-----	2.91
20.05	3.09	749.95	2.93	0.51	-----	-----	2.42	-----	-----	-----	-----	2.93
20.10	3.07	749.95	2.94	0.51	-----	-----	2.43	-----	-----	-----	-----	2.94
20.15	3.05	749.95	2.94	0.51	-----	-----	2.44	-----	-----	-----	-----	2.94
20.20	3.04	749.95	2.95	0.51	-----	-----	2.44	-----	-----	-----	-----	2.95
20.25	3.02	749.95	2.96	0.51	-----	-----	2.45	-----	-----	-----	-----	2.96
20.30	3.02	749.95	2.96	0.51	-----	-----	2.45	-----	-----	-----	-----	2.96
20.35	3.01	749.95	2.96	0.51	-----	-----	2.46	-----	-----	-----	-----	2.96
20.40	3.00	749.95	2.97	0.51	-----	-----	2.46	-----	-----	-----	-----	2.97
20.45	3.00	749.95	2.97	0.51	-----	-----	2.46	-----	-----	-----	-----	2.97
20.50	2.99	749.95	2.97	0.51	-----	-----	2.46	-----	-----	-----	-----	2.97
20.55	2.98	749.95 <<	2.97	0.51	-----	-----	2.47	-----	-----	-----	-----	2.97
20.60	2.98	749.95 <<	2.97	0.51	-----	-----	2.47	-----	-----	-----	-----	2.97
20.65	2.97	749.95 <<	2.97	0.51	-----	-----	2.47	-----	-----	-----	-----	2.97 <<
20.70	2.97	749.95 <<	2.97	0.51	-----	-----	2.47	-----	-----	-----	-----	2.97
20.75	2.96	749.95 <<	2.97	0.51	-----	-----	2.47	-----	-----	-----	-----	2.97
20.80	2.96	749.95	2.97	0.51	-----	-----	2.46	-----	-----	-----	-----	2.97
20.85	2.96	749.95	2.97	0.51	-----	-----	2.46	-----	-----	-----	-----	2.97
20.90	2.95	749.95	2.97	0.51	-----	-----	2.46	-----	-----	-----	-----	2.97
20.95	2.95	749.95	2.97	0.51	-----	-----	2.46	-----	-----	-----	-----	2.97
21.00	2.94	749.95	2.97	0.51	-----	-----	2.46	-----	-----	-----	-----	2.97
21.05	2.94	749.95	2.96	0.51	-----	-----	2.46	-----	-----	-----	-----	2.96
21.10	2.94	749.95	2.96	0.51	-----	-----	2.46	-----	-----	-----	-----	2.96
21.15	2.93	749.95	2.96	0.51	-----	-----	2.45	-----	-----	-----	-----	2.96
21.20	2.93	749.95	2.96	0.51	-----	-----	2.45	-----	-----	-----	-----	2.96

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:26 PM

Hyd. No. 31

Onsite 1-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 26.26 cfs
Storm frequency	= 10 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.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 67,708 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow 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

Wednesday, Aug 12 2015, 1:26 PM

Hyd. No. 36

Onsite 1-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 11.78 cfs
Storm frequency	= 10 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.	= 4.08 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	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

Wednesday, Aug 12 2015, 1:27 PM

Hyd. No. 37

Total to Pond1 - 1 hr.

Hydrograph type	= Combine	Peak discharge	= 26.33 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Inflow hyds.	= 25, 31		

Hydrograph Volume = 124,433 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	0.03	24.69	24.72
0.55	0.05	26.01	26.06
0.60	0.07	26.26 <<	26.33 <<
0.65	0.10	25.67	25.77
0.70	0.12	24.18	24.30
0.75	0.15	22.10	22.24
0.80	0.17	20.18	20.35

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:27 PM

Hyd. No. 42

Total to Pond1 - 24 hr.

Hydrograph type	= Combine	Peak discharge	= 12.30 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Inflow hyds.	= 30, 36		

Hydrograph Volume = 521,488 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
13.80	0.31	8.98	9.28
13.85	0.31	9.04	9.35
13.90	0.32	9.11	9.42
13.95	0.32	9.17	9.49
14.00	0.33	9.23	9.56
14.05	0.34	9.29	9.63
14.10	0.34	9.35	9.69
14.15	0.35	9.41	9.76
14.20	0.35	9.47	9.82
14.25	0.36	9.53	9.89
14.30	0.36	9.58	9.95
14.35	0.37	9.64	10.01
14.40	0.38	9.69	10.07
14.45	0.38	9.77	10.16
14.50	0.39	9.88	10.27
14.55	0.39	10.01	10.40
14.60	0.40	10.17	10.57
14.65	0.41	10.35	10.76
14.70	0.41	10.52	10.93
14.75	0.42	10.67	11.09
14.80	0.42	10.80	11.23
14.85	0.43	10.92	11.35
14.90	0.44	11.03	11.46
14.95	0.44	11.11	11.56
15.00	0.45	11.19	11.63
15.05	0.45	11.24	11.69
15.10	0.46	11.29	11.75
15.15	0.47	11.34	11.81
15.20	0.47	11.40	11.87
15.25	0.48	11.45	11.92
15.30	0.48	11.50	11.98
15.35	0.49	11.55	12.04
15.40	0.49	11.59	12.09
15.45	0.50	11.64	12.14
15.50	0.50	11.69	12.19
15.55	0.51	11.74	12.25
15.60	0.51	11.78 <<	12.30 <<
15.65	0.52	11.71	12.23

Contin

Total to Pond1 - 24 hr.

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
15.70	0.52	11.53	12.05
15.75	0.53	11.23	11.76
15.80	0.53	10.81	11.35
15.85	0.54	10.28	10.82
15.90	0.54	9.81	10.35
15.95	0.55	9.41	9.96
16.00	0.55	9.08	9.63
16.05	0.55	8.82	9.37
16.70	0.60	8.64	9.24
16.75	0.60	8.66	9.26
16.80	0.61	8.67	9.28

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:27 PM

Hyd. No. 48

Thru Pond 1 - 1 hr.

Hydrograph type	= Reservoir	Peak discharge	= 7.45 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Inflow hyd. No.	= 42	Reservoir name	= Pond 1
Max. Elevation	= 745.53 ft	Max. Storage	= 138,908 cuft

Storage Indication method used.

Outflow hydrograph volume = 509,928 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	9.19	745.43	5.73	-----	-----	-----	-----	-----	-----	-----	-----	5.73
16.15	9.07	745.43	5.87	-----	-----	-----	-----	-----	-----	-----	-----	5.87
16.20	9.02	745.44	5.99	-----	-----	-----	-----	-----	-----	-----	-----	5.99
16.25	9.04	745.45	6.12	-----	-----	-----	-----	-----	-----	-----	-----	6.12
16.30	9.06	745.46	6.24	-----	-----	-----	-----	-----	-----	-----	-----	6.24
16.35	9.09	745.46	6.35	-----	-----	-----	-----	-----	-----	-----	-----	6.35
16.40	9.11	745.47	6.46	-----	-----	-----	-----	-----	-----	-----	-----	6.46
16.45	9.13	745.47	6.57	-----	-----	-----	-----	-----	-----	-----	-----	6.57
16.50	9.15	745.48	6.67	-----	-----	-----	-----	-----	-----	-----	-----	6.67
16.55	9.17	745.49	6.77	-----	-----	-----	-----	-----	-----	-----	-----	6.77
16.60	9.19	745.49	6.87	-----	-----	-----	-----	-----	-----	-----	-----	6.87
16.65	9.22	745.50	6.96	-----	-----	-----	-----	-----	-----	-----	-----	6.96
16.70	9.24	745.50	7.04	-----	-----	-----	-----	-----	-----	-----	-----	7.04
16.75	9.26	745.51	7.12	-----	-----	-----	-----	-----	-----	-----	-----	7.12
16.80	9.28	745.51	7.19	-----	-----	-----	-----	-----	-----	-----	-----	7.19
16.85	9.21	745.52	7.25	-----	-----	-----	-----	-----	-----	-----	-----	7.25
16.90	9.05	745.52	7.31	-----	-----	-----	-----	-----	-----	-----	-----	7.31
16.95	8.80	745.53	7.36	-----	-----	-----	-----	-----	-----	-----	-----	7.36
17.00	8.46	745.53	7.41	-----	-----	-----	-----	-----	-----	-----	-----	7.41
17.05	8.02	745.53	7.43	-----	-----	-----	-----	-----	-----	-----	-----	7.43
17.10	7.64	745.53	7.45	-----	-----	-----	-----	-----	-----	-----	-----	7.45
17.15	7.32	745.53 <<	7.45	-----	-----	-----	-----	-----	-----	-----	-----	7.45 <<
17.20	7.05	745.53	7.44	-----	-----	-----	-----	-----	-----	-----	-----	7.44
17.25	6.84	745.53	7.42	-----	-----	-----	-----	-----	-----	-----	-----	7.42
17.30	6.68	745.53	7.40	-----	-----	-----	-----	-----	-----	-----	-----	7.40
17.35	6.58	745.53	7.38	-----	-----	-----	-----	-----	-----	-----	-----	7.38
17.40	6.53	745.53	7.35	-----	-----	-----	-----	-----	-----	-----	-----	7.35
17.45	6.54	745.52	7.32	-----	-----	-----	-----	-----	-----	-----	-----	7.32
17.50	6.55	745.52	7.30	-----	-----	-----	-----	-----	-----	-----	-----	7.30
17.55	6.56	745.52	7.27	-----	-----	-----	-----	-----	-----	-----	-----	7.27
17.60	6.57	745.52	7.25	-----	-----	-----	-----	-----	-----	-----	-----	7.25
17.65	6.59	745.52	7.23	-----	-----	-----	-----	-----	-----	-----	-----	7.23
17.70	6.60	745.52	7.21	-----	-----	-----	-----	-----	-----	-----	-----	7.21
17.75	6.61	745.51	7.19	-----	-----	-----	-----	-----	-----	-----	-----	7.19
17.80	6.62	745.51	7.17	-----	-----	-----	-----	-----	-----	-----	-----	7.17
17.85	6.63	745.51	7.15	-----	-----	-----	-----	-----	-----	-----	-----	7.15
17.90	6.64	745.51	7.14	-----	-----	-----	-----	-----	-----	-----	-----	7.14
17.95	6.65	745.51	7.12	-----	-----	-----	-----	-----	-----	-----	-----	7.12

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	4.97	3	33	12,031	----	------	------	Onsite 4-1 hr.
2	SCS Runoff	4.76	3	39	18,736	----	------	------	Onsite 4-2 hr.
3	SCS Runoff	4.11	3	51	22,677	----	------	------	Onsite 4-3 hr.
4	SCS Runoff	2.97	3	90	31,061	----	------	------	Onsite 4-6 hr.
5	SCS Runoff	2.68	3	324	40,004	----	------	------	Onsite 4-12 hr.
6	SCS Runoff	2.10	3	936	49,361	----	------	------	Onsite 4-24 hr.
7	Reservoir	0.17	3	84	11,612	1	750.32	11,624	Thru Pond 4 - 1 hr.
8	Reservoir	0.28	3	141	18,242	2	750.48	17,458	Thru Pond 4 - 2 hr.
9	Reservoir	0.32	3	201	22,145	3	750.56	20,453	Thru Pond 4 - 3 hr.
10	Reservoir	0.38	3	375	30,450	4	750.70	25,523	Thru Pond 4 - 6 hr.
11	Reservoir	0.43	3	729	39,272	5	750.82	29,984	Thru Pond 4 - 12 hr.
12	Reservoir	0.46	3	1446	48,396	6	750.90	32,980	Thru Pond 4 - 24 hr.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:20 PM

Hyd. No. 1

Onsite 4-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 4.97 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Drainage area	= 6.50 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 17.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 12,031 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.35	3.36
0.40	4.15
0.45	4.68
0.50	4.96
0.55	4.97 <<
0.60	4.77
0.65	4.34
0.70	3.86
0.75	3.48
0.80	3.21
0.85	3.03
0.90	2.86
0.95	2.67
1.00	2.55

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:20 PM

Hyd. No. 6

Onsite 4-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 2.10 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Drainage area	= 6.50 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 17.0 min
Total precip.	= 4.08 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 49,361 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)	
13.35	1.05	15.05	2.01	16.75	1.54
13.40	1.18	15.10	2.02	16.80	1.54
13.45	1.28	15.15	2.03	16.85	1.52
13.50	1.37	15.20	2.03	16.90	1.48
13.55	1.45	15.25	2.04	16.95	1.41
13.60	1.51	15.30	2.05	17.00	1.32
13.65	1.56	15.35	2.06	17.05	1.24
13.70	1.58	15.40	2.07	17.10	1.17
13.75	1.60	15.45	2.08	17.15	1.12
13.80	1.61	15.50	2.09	17.20	1.08
13.85	1.62	15.55	2.09	17.25	1.06
13.90	1.63	15.60	2.10 <<		
13.95	1.64	15.65	2.08		
14.00	1.65	15.70	2.03	...End	
14.05	1.66	15.75	1.94		
14.10	1.67	15.80	1.83		
14.15	1.68	15.85	1.73		
14.20	1.69	15.90	1.65		
14.25	1.70	15.95	1.59		
14.30	1.71	16.00	1.54		
14.35	1.72	16.05	1.51		
14.40	1.73	16.10	1.50		
14.45	1.75	16.15	1.50		
14.50	1.77	16.20	1.51		
14.55	1.80	16.25	1.51		
14.60	1.84	16.30	1.51		
14.65	1.87	16.35	1.52		
14.70	1.90	16.40	1.52		
14.75	1.93	16.45	1.52		
14.80	1.95	16.50	1.53		
14.85	1.96	16.55	1.53		
14.90	1.98	16.60	1.53		
14.95	1.99	16.65	1.53		
15.00	2.00	16.70	1.54		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:20 PM

Hyd. No. 12

Thru Pond 4 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 0.46 cfs
Storm frequency	= 10 yrs	Time interval	= 3 min
Inflow hyd. No.	= 6	Reservoir name	= Pond 4
Max. Elevation	= 750.90 ft	Max. Storage	= 32,980 cuft

Storage Indication method used.

Outflow hydrograph volume = 48,396 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
22.70	0.37	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
22.75	0.37	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
22.80	0.37	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
22.85	0.38	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
22.90	0.40	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
22.95	0.42	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.00	0.46	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.05	0.49	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.10	0.51	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.15	0.53	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.20	0.54	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.25	0.55	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.30	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.35	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.40	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.45	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.50	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.55	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.60	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.65	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.70	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.75	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.80	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.85	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.90	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
23.95	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.00	0.56	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.05	0.54	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.10	0.49	750.90 <<	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46 <<
24.15	0.41	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.20	0.31	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.25	0.22	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.30	0.15	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.35	0.09	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.40	0.04	750.90	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.45	0.01	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.50	0.00	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.55	0.00	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
24.60	0.00	750.89	0.47	0.46	-----	-----	-----	-----	-----	-----	-----	0.46
									-----	-----	-----	0.46

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	30.73	3	33	76,917	----	------	------	Onsite 3-1 hr.
2	SCS Runoff	28.38	3	42	109,331	----	------	------	Onsite 3-2 hr.
3	SCS Runoff	24.28	3	48	129,583	----	------	------	Onsite 3-3 hr.
4	SCS Runoff	15.99	3	57	165,876	----	------	------	Onsite 3-6 hr.
5	SCS Runoff	13.29	3	324	205,290	----	------	------	Onsite 3-12 hr.
6	SCS Runoff	10.25	3	936	256,947	----	------	------	Onsite 3-24 hr.
7	Reservoir	0.65	3	90	75,034	1	750.57	74,724	Thru Pond 3 - 1 hr.
8	Reservoir	4.33	3	135	107,268	2	751.00	96,420	Thru Pond 3 - 2 hr.
9	Reservoir	4.66	3	189	127,476	3	751.11	102,422	Thru Pond 3 - 3 hr.
10	Reservoir	4.67	3	309	163,677	4	751.11	102,651	Thru Pond 3 - 6 hr.
11	Reservoir	5.08	3	480	202,890	5	751.32	113,959	Thru Pond 3 - 12 hr.
12	Reservoir	5.35	3	1032	254,051	6	751.52	124,455	Thru Pond 3 - 24 hr.
13	SCS Runoff	24.50	3	33	61,323	----	------	------	Onsite 2-1 hr.
14	SCS Runoff	22.63	3	42	87,165	----	------	------	Onsite 2-2 hr.
15	SCS Runoff	19.36	3	48	103,311	----	------	------	Onsite 2-3 hr.
16	SCS Runoff	12.75	3	57	132,247	----	------	------	Onsite 2-6 hr.
17	SCS Runoff	10.59	3	324	163,670	----	------	------	Onsite 2-12 hr.
18	SCS Runoff	8.17	3	936	204,854	----	------	------	Onsite 2-24 hr.
19	Combine	24.82	3	33	136,358	7, 13,	------	------	Total to Pond 2 - 1 hr.
20	Combine	22.99	3	42	194,434	8, 14,	------	------	Total to Pond 2 - 2 hr.
21	Combine	19.70	3	48	230,788	9, 15,	------	------	Total to Pond 2 - 3 hr.
22	Combine	13.16	3	84	295,923	10, 16,	------	------	Total to Pond 2 - 6 hr.
23	Combine	12.58	3	363	366,560	11, 17,	------	------	Total to Pond 2 - 12 hr.
24	Combine	13.15	3	936	458,905	12, 18,	------	------	Total to Pond 2 - 24 hr.
25	Reservoir	0.55	3	576	131,115	19	749.19	63,212	Thru Pond 2 - 1 hr.
26	Reservoir	1.65	3	201	188,509	20	749.89	102,481	Thru Pond 2 - 2 hr.
27	Reservoir	5.90	3	204	224,764	21	750.09	114,234	Thru Pond 2 - 3 hr.
28	Reservoir	7.14	3	327	289,690	22	750.23	123,546	Thru Pond 2 - 6 hr.
29	Reservoir	7.71	3	558	359,845	23	750.36	131,508	Thru Pond 2 - 12 hr.
30	Reservoir	8.26	3	1104	450,812	24	750.56	144,358	Thru Pond 2 - 24 hr.

15015 Post 1-2-3.gpw	Return Period: 100 Year	Wednesday, Aug 12 2015, 1:21 PM

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	60.50	3	33	281,947	25, 31,	------	------	Total to Pond1 - 1 hr.
38	Combine	55.93	3	42	402,903	26, 32,	------	------	Total to Pond1 - 2 hr.
39	Combine	47.87	3	48	478,871	27, 33,	------	------	Total to Pond1 - 3 hr.
40	Combine	31.61	3	81	614,967	28, 34,	------	------	Total to Pond1 - 6 hr.
41	Combine	26.61	3	324	762,412	29, 35,	------	------	Total to Pond1 - 12 hr.
42	Combine	26.78	3	936	954,679	30, 36,	------	------	Total to Pond1 - 24 hr.
43	Reservoir	7.33	3	81	274,849	37	745.52	138,287	Thru Pond 1 - 1 hr.
44	Reservoir	11.83	3	132	394,258	38	745.93	168,859	Thru Pond 1 - 2 hr.
45	Reservoir	13.01	3	195	470,055	39	746.07	179,719	Thru Pond 1 - 3 hr.
46	Reservoir	14.18	3	321	605,810	40	746.22	191,826	Thru Pond 1 - 6 hr.
47	Reservoir	15.82	3	546	752,561	41	746.45	210,684	Thru Pond 1 - 12 hr.
48	Reservoir	17.47	3	1089	943,022	42	746.72	231,998	Thru Pond 1 - 1 hr.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:23 PM

Hyd. No. 1

Onsite 3-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 30.73 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 19.73 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20.0 min
Total precip.	= 2.88 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 76,917 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.30	15.50
0.35	20.95
0.40	25.45
0.45	28.70
0.50	30.40
0.55	30.73 <<
0.60	29.89
0.65	28.17
0.70	25.53
0.75	22.69
0.80	20.28
0.85	18.43
0.90	16.92
0.95	15.60

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 6

Onsite 3-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 10.25 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 19.73 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 = 256,947 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)	
13.35	5.32	15.05	9.95	16.75	7.36
13.40	5.76	15.10	9.98	16.80	7.37
13.45	6.30	15.15	10.01	16.85	7.30
13.50	6.79	15.20	10.04	16.90	7.16
13.55	7.21	15.25	10.06	16.95	6.94
13.60	7.57	15.30	10.09	17.00	6.64
13.65	7.87	15.35	10.12	17.05	6.27
13.70	8.10	15.40	10.15	17.10	5.94
13.75	8.27	15.45	10.17	17.15	5.66
13.80	8.37	15.50	10.20	17.20	5.43
13.85	8.41	15.55	10.22	17.25	5.24
13.90	8.45	15.60	10.25 <<		
13.95	8.49	15.65	10.18		
14.00	8.53	15.70	10.00	*...End*	
14.05	8.56	15.75	9.73		
14.10	8.60	15.80	9.36		
14.15	8.63	15.85	8.89		
14.20	8.67	15.90	8.47		
14.25	8.70	15.95	8.12		
14.30	8.73	16.00	7.83		
14.35	8.76	16.05	7.59		
14.40	8.80	16.10	7.42		
14.45	8.85	16.15	7.31		
14.50	8.93	16.20	7.26		
14.55	9.03	16.25	7.27		
14.60	9.15	16.30	7.28		
14.65	9.30	16.35	7.29		
14.70	9.43	16.40	7.30		
14.75	9.55	16.45	7.31		
14.80	9.65	16.50	7.32		
14.85	9.74	16.55	7.33		
14.90	9.81	16.60	7.33		
14.95	9.87	16.65	7.34		
15.00	9.92	16.70	7.35		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 12

Thru Pond 3 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 5.35 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Inflow hyd. No.	= 6	Reservoir name	= Pond 3
Max. Elevation	= 751.52 ft	Max. Storage	= 124,455 cuft

Storage Indication method used.

Outflow hydrograph volume = 254,051 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
16.65	7.34	751.46	5.29	0.06	-----	-----	5.22	-----	-----	-----	-----	5.28
16.70	7.35	751.47	5.30	0.06	-----	-----	5.23	-----	-----	-----	-----	5.29
16.75	7.36	751.48	5.31	0.06	-----	-----	5.24	-----	-----	-----	-----	5.30
16.80	7.37	751.48	5.32	0.06	-----	-----	5.25	-----	-----	-----	-----	5.31
16.85	7.30	751.49	5.33	0.06	-----	-----	5.26	-----	-----	-----	-----	5.32
16.90	7.16	751.50	5.33	0.06	-----	-----	5.27	-----	-----	-----	-----	5.33
16.95	6.94	751.50	5.34	0.06	-----	-----	5.28	-----	-----	-----	-----	5.34
17.00	6.64	751.51	5.35	0.05	-----	-----	5.29	-----	-----	-----	-----	5.34
17.05	6.27	751.51	5.35	0.05	-----	-----	5.29	-----	-----	-----	-----	5.35
17.10	5.94	751.51	5.36	0.05	-----	-----	5.30	-----	-----	-----	-----	5.35
17.15	5.66	751.52	5.36	0.05	-----	-----	5.30	-----	-----	-----	-----	5.35
17.20	5.43	751.52 <<	5.36	0.05	-----	-----	5.30	-----	-----	-----	-----	5.35 <<
17.25	5.24	751.52	5.36	0.05	-----	-----	5.30	-----	-----	-----	-----	5.35
17.30	5.11	751.52	5.36	0.05	-----	-----	5.30	-----	-----	-----	-----	5.35
17.35	5.02	751.51	5.36	0.05	-----	-----	5.30	-----	-----	-----	-----	5.35
17.40	4.97	751.51	5.36	0.05	-----	-----	5.30	-----	-----	-----	-----	5.35
17.45	4.97	751.51	5.35	0.05	-----	-----	5.30	-----	-----	-----	-----	5.35
17.50	4.98	751.51	5.35	0.05	-----	-----	5.29	-----	-----	-----	-----	5.35
17.55	4.98	751.51	5.35	0.05	-----	-----	5.29	-----	-----	-----	-----	5.35
17.60	4.99	751.51	5.35	0.05	-----	-----	5.29	-----	-----	-----	-----	5.35
17.65	4.99	751.51	5.35	0.05	-----	-----	5.29	-----	-----	-----	-----	5.34
17.70	4.99	751.51	5.35	0.05	-----	-----	5.29	-----	-----	-----	-----	5.34
17.75	5.00	751.50	5.34	0.05	-----	-----	5.29	-----	-----	-----	-----	5.34
17.80	5.00	751.50	5.34	0.05	-----	-----	5.28	-----	-----	-----	-----	5.34
17.85	5.00	751.50	5.34	0.06	-----	-----	5.28	-----	-----	-----	-----	5.34
17.90	5.01	751.50	5.34	0.06	-----	-----	5.28	-----	-----	-----	-----	5.33
17.95	5.01	751.50	5.34	0.06	-----	-----	5.28	-----	-----	-----	-----	5.33
18.00	5.01	751.50	5.34	0.06	-----	-----	5.28	-----	-----	-----	-----	5.33
18.05	4.97	751.50	5.34	0.06	-----	-----	5.28	-----	-----	-----	-----	5.33
18.10	4.87	751.50	5.33	0.06	-----	-----	5.27	-----	-----	-----	-----	5.33
18.15	4.71	751.50	5.33	0.06	-----	-----	5.27	-----	-----	-----	-----	5.33
18.20	4.51	751.49	5.33	0.06	-----	-----	5.27	-----	-----	-----	-----	5.33
18.25	4.25	751.49	5.32	0.06	-----	-----	5.27	-----	-----	-----	-----	5.32
18.30	4.03	751.49	5.32	0.06	-----	-----	5.26	-----	-----	-----	-----	5.32
18.35	3.84	751.48	5.31	0.06	-----	-----	5.26	-----	-----	-----	-----	5.31
18.40	3.68	751.48	5.30	0.06	-----	-----	5.25	-----	-----	-----	-----	5.31
18.45	3.55	751.47	5.30	0.06	-----	-----	5.24	-----	-----	-----	-----	5.30
18.50	3.46	751.46	5.29	0.06	-----	-----	5.23	-----	-----	-----	-----	5.29
18.55	3.39	751.46	5.28	0.06	-----	-----	5.22	-----	-----	-----	-----	5.28
18.60	3.36	751.45	5.27	0.06	-----	-----	5.21	-----	-----	-----	-----	5.27
18.65	3.37	751.45	5.26	0.06	-----	-----	5.20	-----	-----	-----	-----	5.26
18.70	3.37	751.44	5.25	0.06	-----	-----	5.19	-----	-----	-----	-----	5.25
18.75	3.37	751.43	5.24	0.06	-----	-----	5.18	-----	-----	-----	-----	5.25
18.80	3.37	751.43	5.24	0.06	-----	-----	5.18	-----	-----	-----	-----	5.24
18.85	3.37	751.42	5.23	0.06	-----	-----	5.17	-----	-----	-----	-----	5.23
							5.16					5.22
							5.15					5.21

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:24 PM

Hyd. No. 13

Onsite 2-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 24.50 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 15.73 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 21.0 min
Total precip.	= 2.88 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 61,323 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.30	12.36
0.35	16.70
0.40	20.29
0.45	22.88
0.50	24.24
0.55	24.50 <<
0.60	23.83
0.65	22.46
0.70	20.35
0.75	18.09
0.80	16.17
0.85	14.69
0.90	13.49
0.95	12.44

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 19

Total to Pond 2 - 1 hr.

Hydrograph type	= Combine	Peak discharge	= 24.82 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Inflow hyds.	= 7, 13		

Hydrograph Volume = 136,358 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 7 + (cfs)	Hyd. 13 + (cfs)	Outflow (cfs)
0.40	0.12	20.29	20.41
0.45	0.20	22.88	23.08
0.50	0.27	24.24	24.51
0.55	0.32	24.50 <<	24.82 <<
0.60	0.37	23.83	24.21
0.65	0.42	22.46	22.88
0.70	0.46	20.35	20.81

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 24

Total to Pond 2 - 24 hr.

Hydrograph type	= Combine	Peak discharge	= 13.15 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Inflow hyds.	= 12, 18		

Hydrograph Volume = 458,905 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 12 + (cfs)	Hyd. 18 + (cfs)	Outflow (cfs)
14.50	2.87	7.12	9.98
14.55	3.28	7.20	10.48
14.60	3.68	7.30	10.98
14.65	3.86	7.41	11.28
14.70	3.98	7.52	11.49
14.75	4.09	7.61	11.70
14.80	4.20	7.69	11.89
14.85	4.31	7.77	12.07
14.90	4.39	7.82	12.21
14.95	4.44	7.87	12.31
15.00	4.49	7.91	12.40
15.05	4.54	7.93	12.47
15.10	4.59	7.96	12.55
15.15	4.65	7.98	12.63
15.20	4.69	8.00	12.69
15.25	4.73	8.02	12.75
15.30	4.77	8.05	12.81
15.35	4.81	8.07	12.88
15.40	4.85	8.09	12.94
15.45	4.89	8.11	13.00
15.50	4.92	8.13	13.05
15.55	4.95	8.15	13.10
15.60	4.98	8.17 <<	13.15 <<
15.65	5.01	8.11	13.12
15.70	5.04	7.97	13.01
15.75	5.06	7.76	12.82
15.80	5.08	7.46	12.54
15.85	5.10	7.08	12.19
15.90	5.12	6.75	11.87
15.95	5.13	6.47	11.61
16.00	5.15	6.24	11.39
16.05	5.16	6.05	11.21
16.10	5.17	5.92	11.09
16.15	5.18	5.83	11.01
16.20	5.19	5.79	10.98
16.25	5.20	5.79	10.99
16.30	5.21	5.80	11.01
16.35	5.22	5.81	11.03

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:25 PM

Hyd. No. 30

Thru Pond 2 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 8.26 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Inflow hyd. No.	= 24	Reservoir name	= Pond 2
Max. Elevation	= 750.56 ft	Max. Storage	= 144,358 cuft

Storage Indication method used.

Outflow hydrograph volume = 450,812 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
17.95	9.33	750.54	8.23	0.11	-----	-----	8.11	-----	-----	-----	-----	8.22
18.00	9.33	750.54	8.23	0.11	-----	-----	8.12	-----	-----	-----	-----	8.23
18.05	9.29	750.55	8.24	0.11	-----	-----	8.12	-----	-----	-----	-----	8.23
18.10	9.21	750.55	8.25	0.11	-----	-----	8.13	-----	-----	-----	-----	8.24
18.15	9.08	750.55	8.25	0.11	-----	-----	8.14	-----	-----	-----	-----	8.25
18.20	8.92	750.56	8.26	0.11	-----	-----	8.14	-----	-----	-----	-----	8.25
18.25	8.71	750.56	8.26	0.11	-----	-----	8.15	-----	-----	-----	-----	8.25
18.30	8.53	750.56	8.26	0.11	-----	-----	8.15	-----	-----	-----	-----	8.26
18.35	8.37	750.56	8.26	0.11	-----	-----	8.15	-----	-----	-----	-----	8.26
18.40	8.23	750.56	8.26	0.11	-----	-----	8.15	-----	-----	-----	-----	8.26 <<
18.45	8.12	750.56	8.26	0.11	-----	-----	8.15	-----	-----	-----	-----	8.26
18.50	8.04	750.56	8.26	0.11	-----	-----	8.15	-----	-----	-----	-----	8.26
18.55	7.98	750.56	8.26	0.11	-----	-----	8.15	-----	-----	-----	-----	8.25
18.60	7.95	750.56	8.26	0.11	-----	-----	8.15	-----	-----	-----	-----	8.25
18.65	7.94	750.56	8.26	0.11	-----	-----	8.14	-----	-----	-----	-----	8.25
18.70	7.93	750.55	8.26	0.11	-----	-----	8.14	-----	-----	-----	-----	8.25
18.75	7.92	750.55	8.25	0.11	-----	-----	8.14	-----	-----	-----	-----	8.25
18.80	7.91	750.55	8.25	0.11	-----	-----	8.14	-----	-----	-----	-----	8.24
18.85	7.91	750.55	8.25	0.11	-----	-----	8.13	-----	-----	-----	-----	8.24
18.90	7.90	750.55	8.25	0.11	-----	-----	8.13	-----	-----	-----	-----	8.24
18.95	7.89	750.55	8.24	0.11	-----	-----	8.13	-----	-----	-----	-----	8.24
19.00	7.88	750.55	8.24	0.11	-----	-----	8.13	-----	-----	-----	-----	8.24
19.05	7.88	750.55	8.24	0.11	-----	-----	8.13	-----	-----	-----	-----	8.23
19.10	7.87	750.55	8.24	0.11	-----	-----	8.12	-----	-----	-----	-----	8.23
19.15	7.86	750.55	8.24	0.11	-----	-----	8.12	-----	-----	-----	-----	8.23
19.20	7.85	750.54	8.23	0.11	-----	-----	8.12	-----	-----	-----	-----	8.23
19.25	7.83	750.54	8.23	0.11	-----	-----	8.11	-----	-----	-----	-----	8.22
19.30	7.78	750.54	8.23	0.11	-----	-----	8.11	-----	-----	-----	-----	8.22
19.35	7.71	750.54	8.22	0.11	-----	-----	8.11	-----	-----	-----	-----	8.22
19.40	7.61	750.54	8.22	0.11	-----	-----	8.10	-----	-----	-----	-----	8.21
19.45	7.50	750.54	8.22	0.11	-----	-----	8.10	-----	-----	-----	-----	8.21
19.50	7.40	750.54	8.21	0.11	-----	-----	8.09	-----	-----	-----	-----	8.20
19.55	7.31	750.53	8.21	0.11	-----	-----	8.09	-----	-----	-----	-----	8.20
19.60	7.24	750.53	8.20	0.11	-----	-----	8.08	-----	-----	-----	-----	8.19
19.65	7.18	750.53	8.19	0.11	-----	-----	8.07	-----	-----	-----	-----	8.19
19.70	7.13	750.53	8.19	0.11	-----	-----	8.07	-----	-----	-----	-----	8.18
19.75	7.09	750.52	8.18	0.11	-----	-----	8.06	-----	-----	-----	-----	8.17
19.80	7.06	750.52	8.17	0.11	-----	-----	8.05	-----	-----	-----	-----	8.16
19.85	7.05	750.52	8.17	0.11	-----	-----	8.04	-----	-----	-----	-----	8.16

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:26 PM

Hyd. No. 31

Onsite 1-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 60.26 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.	= 2.88 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 150,833 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Outflow (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

Wednesday, Aug 12 2015, 1:26 PM

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	19.51	16.75	14.44
13.40	11.29	15.10	19.57	16.80	14.46
13.45	12.36	15.15	19.63	16.85	14.32
13.50	13.31	15.20	19.68	16.90	14.04
13.55	14.14	15.25	19.74	16.95	13.61
13.60	14.85	15.30	19.79	17.00	13.03
13.65	15.43	15.35	19.84	17.05	12.30
13.70	15.89	15.40	19.90	17.10	11.66
13.75	16.22	15.45	19.95	17.15	11.11
13.80	16.42	15.50	20.00	17.20	10.65
13.85	16.50	15.55	20.05	17.25	10.29
13.90	16.57	15.60	20.10 <<		
13.95	16.65	15.65	19.95		
14.00	16.72	15.70	19.62	*...End*	
14.05	16.79	15.75	19.08		
14.10	16.86	15.80	18.35		
14.15	16.93	15.85	17.42		
14.20	16.99	15.90	16.61		
14.25	17.06	15.95	15.92		
14.30	17.12	16.00	15.34		
14.35	17.19	16.05	14.89		
14.40	17.25	16.10	14.55		
14.45	17.36	16.15	14.33		
14.50	17.51	16.20	14.23		
14.55	17.70	16.25	14.25		
14.60	17.95	16.30	14.27		
14.65	18.23	16.35	14.29		
14.70	18.49	16.40	14.31		
14.75	18.72	16.45	14.33		
14.80	18.93	16.50	14.35		
14.85	19.10	16.55	14.36		
14.90	19.25	16.60	14.38		
14.95	19.36	16.65	14.40		
15.00	19.45	16.70	14.42		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:27 PM

Hyd. No. 37

Total to Pond1 - 1 hr.

Hydrograph type	= Combine	Peak discharge	= 60.50 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Inflow hyds.	= 25, 31		

Hydrograph Volume = 281,947 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 25 + (cfs)	Hyd. 31 + (cfs)	Outflow (cfs)
0.40	0.07	49.91	49.98
0.45	0.12	56.28	56.40
0.50	0.18	59.62	59.80
0.55	0.24	60.26 <<	60.50 <<
0.60	0.29	58.62	58.91
0.65	0.32	55.24	55.56
0.70	0.36	50.06	50.41

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:27 PM

Hyd. No. 42

Total to Pond1 - 24 hr.

Hydrograph type	= Combine	Peak discharge	= 26.78 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Inflow hyds.	= 30, 36		

Hydrograph Volume = 954,679 cuft

(Printed values >= 75% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 30 + (cfs)	Hyd. 36 + (cfs)	Outflow (cfs)
14.95	1.07	19.36	20.43
15.00	1.44	19.45	20.89
15.05	1.84	19.51	21.35
15.10	2.57	19.57	22.14
15.15	3.25	19.63	22.88
15.20	3.89	19.68	23.57
15.25	4.44	19.74	24.17
15.30	4.95	19.79	24.74
15.35	5.43	19.84	25.28
15.40	5.89	19.90	25.79
15.45	6.25	19.95	26.20
15.50	6.39	20.00	26.39
15.55	6.54	20.05	26.59
15.60	6.68	20.10 <<	26.78 <<
15.65	6.82	19.95	26.77
15.70	6.95	19.62	26.57
15.75	7.05	19.08	26.13
15.80	7.13	18.35	25.48
15.85	7.20	17.42	24.63
15.90	7.27	16.61	23.88
15.95	7.33	15.92	23.25
16.00	7.39	15.34	22.74
16.05	7.45	14.89	22.34
16.10	7.50	14.55	22.05
16.15	7.54	14.33	21.87
16.20	7.57	14.23	21.80
16.25	7.61	14.25	21.86
16.30	7.65	14.27	21.92
16.35	7.69	14.29	21.97
16.40	7.72	14.31	22.03
16.45	7.76	14.33	22.09
16.50	7.80	14.35	22.14
16.55	7.83	14.36	22.20
16.60	7.87	14.38	22.25
16.65	7.89	14.40	22.30
16.70	7.92	14.42	22.34
16.75	7.94	14.44	22.38
16.80	7.96	14.46	22.42

...63 on next page...

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:27 PM

Hyd. No. 48

Thru Pond 1 - 1 hr.

Hydrograph type	= Reservoir	Peak discharge	= 17.47 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Inflow hyd. No.	= 42	Reservoir name	= Pond 1
Max. Elevation	= 746.72 ft	Max. Storage	= 231,998 cuft

Storage Indication method used.

Outflow hydrograph volume = 943,022 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
17.25	18.39	746.70	17.36	-----	-----	-----	-----	-----	-----	-----	-----	17.36
17.30	18.13	746.70	17.37	-----	-----	-----	-----	-----	-----	-----	-----	17.37
17.35	17.96	746.70	17.38	-----	-----	-----	-----	-----	-----	-----	-----	17.38
17.40	17.88	746.70	17.39	-----	-----	-----	-----	-----	-----	-----	-----	17.39
17.45	17.90	746.70	17.39	-----	-----	-----	-----	-----	-----	-----	-----	17.39
17.50	17.91	746.70	17.40	-----	-----	-----	-----	-----	-----	-----	-----	17.40
17.55	17.93	746.70	17.40	-----	-----	-----	-----	-----	-----	-----	-----	17.40
17.60	17.94	746.70	17.41	-----	-----	-----	-----	-----	-----	-----	-----	17.41
17.65	17.96	746.71	17.41	-----	-----	-----	-----	-----	-----	-----	-----	17.41
17.70	17.97	746.71	17.42	-----	-----	-----	-----	-----	-----	-----	-----	17.42
17.75	17.99	746.71	17.43	-----	-----	-----	-----	-----	-----	-----	-----	17.43
17.80	18.00	746.71	17.43	-----	-----	-----	-----	-----	-----	-----	-----	17.43
17.85	18.01	746.71	17.44	-----	-----	-----	-----	-----	-----	-----	-----	17.44
17.90	18.03	746.71	17.44	-----	-----	-----	-----	-----	-----	-----	-----	17.44
17.95	18.04	746.71	17.45	-----	-----	-----	-----	-----	-----	-----	-----	17.45
18.00	18.06	746.71	17.45	-----	-----	-----	-----	-----	-----	-----	-----	17.45
18.05	17.97	746.72	17.46	-----	-----	-----	-----	-----	-----	-----	-----	17.46
18.10	17.78	746.72	17.46	-----	-----	-----	-----	-----	-----	-----	-----	17.46
18.15	17.49	746.72	17.47	-----	-----	-----	-----	-----	-----	-----	-----	17.47 <<
18.20	17.09	746.72	17.46	-----	-----	-----	-----	-----	-----	-----	-----	17.46
18.25	16.60	746.72	17.46	-----	-----	-----	-----	-----	-----	-----	-----	17.46
18.30	16.16	746.71	17.45	-----	-----	-----	-----	-----	-----	-----	-----	17.45
18.35	15.79	746.71	17.43	-----	-----	-----	-----	-----	-----	-----	-----	17.43
18.40	15.47	746.71	17.41	-----	-----	-----	-----	-----	-----	-----	-----	17.41
18.45	15.22	746.70	17.39	-----	-----	-----	-----	-----	-----	-----	-----	17.39
18.50	15.04	746.70	17.36	-----	-----	-----	-----	-----	-----	-----	-----	17.36
18.55	14.91	746.69	17.33	-----	-----	-----	-----	-----	-----	-----	-----	17.33
18.60	14.85	746.69	17.30	-----	-----	-----	-----	-----	-----	-----	-----	17.30
18.65	14.85	746.68	17.26	-----	-----	-----	-----	-----	-----	-----	-----	17.26
18.70	14.85	746.67	17.23	-----	-----	-----	-----	-----	-----	-----	-----	17.23
18.75	14.85	746.67	17.20	-----	-----	-----	-----	-----	-----	-----	-----	17.20
18.80	14.85	746.66	17.17	-----	-----	-----	-----	-----	-----	-----	-----	17.17
18.85	14.85	746.66	17.14	-----	-----	-----	-----	-----	-----	-----	-----	17.14
17.00	21.07	746.67	17.20	-----	-----	-----	-----	-----	-----	-----	-----	17.20
17.05	20.36	746.68	17.25	-----	-----	-----	-----	-----	-----	-----	-----	17.25
17.10	19.73	746.68	17.29	-----	-----	-----	-----	-----	-----	-----	-----	17.29
17.15	19.19	746.69	17.32	-----	-----	-----	-----	-----	-----	-----	-----	17.32
17.20	18.75	746.69	17.34	-----	-----	-----	-----	-----	-----	-----	-----	17.34

C

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	11.43	3	30	26,802	----	------	------	Onsite 4-1 hr.
2	SCS Runoff	10.23	3	36	38,097	----	------	------	Onsite 4-2 hr.
3	SCS Runoff	8.52	3	45	45,154	----	------	------	Onsite 4-3 hr.
4	SCS Runoff	5.62	3	48	57,800	----	------	------	Onsite 4-6 hr.
5	SCS Runoff	4.66	3	324	71,534	----	------	------	Onsite 4-12 hr.
6	SCS Runoff	3.58	3	936	89,534	----	------	------	Onsite 4-24 hr.
7	Reservoir	0.38	3	84	26,246	1	750.70	25,674	Thru Pond 4 - 1 hr.
8	Reservoir	0.49	3	141	37,455	2	750.97	35,477	Thru Pond 4 - 2 hr.
9	Reservoir	0.54	3	201	44,459	3	751.11	40,909	Thru Pond 4 - 3 hr.
10	Reservoir	0.60	3	375	57,008	4	751.30	48,315	Thru Pond 4 - 6 hr.
11	Reservoir	1.23	3	552	70,635	5	751.36	50,726	Thru Pond 4 - 12 hr.
12	Reservoir	1.68	3	1086	88,393	6	751.41	52,422	Thru Pond 4 - 24 hr.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:20 PM

Hyd. No. 1

Onsite 4-1 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 11.43 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 6.50 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 = 26,802 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs	-- Outflow cfs)
0.30	7.43
0.35	9.37
0.40	10.68
0.45	11.34
0.50	11.43 <<
0.55	10.95
0.60	10.03
0.65	8.85
0.70	7.70
0.75	6.80
0.80	6.19
0.85	5.78

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:20 PM

Hyd. No. 6

Onsite 4-24 hr.

Hydrograph type	= SCS Runoff	Peak discharge	= 3.58 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Drainage area	= 6.50 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 17.0 min
Total precip.	= 6.00 in	Distribution	= Huff-3rd
Storm duration	= 24 hrs	Shape factor	= 484

Hydrograph Volume = 89,534 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)		Time -- Outflow (hrs cfs)	
13.30	1.80	15.00	3.47	16.70	2.57
13.35	1.96	15.05	3.48	16.75	2.57
13.40	2.19	15.10	3.49	16.80	2.57
13.45	2.38	15.15	3.50	16.85	2.54
13.50	2.55	15.20	3.51	16.90	2.46
13.55	2.68	15.25	3.52	16.95	2.35
13.60	2.79	15.30	3.53	17.00	2.19
13.65	2.86	15.35	3.54	17.05	2.06
13.70	2.90	15.40	3.54	17.10	1.95
13.75	2.92	15.45	3.55	17.15	1.86
13.80	2.93	15.50	3.56	17.20	1.80
13.85	2.95	15.55	3.57		
13.90	2.96	15.60	3.58 <<		
13.95	2.97	15.65	3.54	*...End*	
14.00	2.98	15.70	3.44		
14.05	3.00	15.75	3.30		
14.10	3.01	15.80	3.10		
14.15	3.02	15.85	2.94		
14.20	3.03	15.90	2.80		
14.25	3.04	15.95	2.69		
14.30	3.05	16.00	2.60		
14.35	3.07	16.05	2.55		
14.40	3.08	16.10	2.52		
14.45	3.10	16.15	2.53		
14.50	3.13	16.20	2.53		
14.55	3.18	16.25	2.54		
14.60	3.24	16.30	2.54		
14.65	3.29	16.35	2.54		
14.70	3.33	16.40	2.55		
14.75	3.37	16.45	2.55		
14.80	3.40	16.50	2.55		
14.85	3.43	16.55	2.56		
14.90	3.45	16.60	2.56		
14.95	3.46	16.65	2.56		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:20 PM

Hyd. No. 12

Thru Pond 4 - 24 hr.

Hydrograph type	= Reservoir	Peak discharge	= 1.68 cfs
Storm frequency	= 100 yrs	Time interval	= 3 min
Inflow hyd. No.	= 6	Reservoir name	= Pond 4
Max. Elevation	= 751.41 ft	Max. Storage	= 52,422 cuft

Storage Indication method used.

Outflow hydrograph volume = 88,393 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
16.80	2.57	751.37	1.31	0.44	-----	-----	0.87	-----	-----	-----	-----	1.31
16.85	2.54	751.38	1.37	0.43	-----	-----	0.94	-----	-----	-----	-----	1.37
16.90	2.46	751.38	1.42	0.42	-----	-----	1.00	-----	-----	-----	-----	1.42
16.95	2.35	751.39	1.46	0.41	-----	-----	1.05	-----	-----	-----	-----	1.46
17.00	2.19	751.39	1.50	0.40	-----	-----	1.10	-----	-----	-----	-----	1.50
17.05	2.06	751.39	1.53	0.40	-----	-----	1.13	-----	-----	-----	-----	1.53
17.10	1.95	751.39	1.55	0.39	-----	-----	1.16	-----	-----	-----	-----	1.55
17.15	1.86	751.40	1.57	0.39	-----	-----	1.18	-----	-----	-----	-----	1.57
17.20	1.80	751.40	1.58	0.39	-----	-----	1.19	-----	-----	-----	-----	1.58
17.25	1.75	751.40	1.59	0.38	-----	-----	1.20	-----	-----	-----	-----	1.59
17.30	1.73	751.40	1.59	0.38	-----	-----	1.21	-----	-----	-----	-----	1.59
17.35	1.73	751.40	1.60	0.38	-----	-----	1.22	-----	-----	-----	-----	1.60
17.40	1.73	751.40	1.61	0.38	-----	-----	1.23	-----	-----	-----	-----	1.61
17.45	1.73	751.40	1.61	0.38	-----	-----	1.23	-----	-----	-----	-----	1.61
17.50	1.74	751.40	1.62	0.38	-----	-----	1.24	-----	-----	-----	-----	1.62
17.55	1.74	751.40	1.63	0.38	-----	-----	1.25	-----	-----	-----	-----	1.63
17.60	1.74	751.40	1.63	0.38	-----	-----	1.26	-----	-----	-----	-----	1.63
17.65	1.74	751.40	1.64	0.38	-----	-----	1.26	-----	-----	-----	-----	1.64
17.70	1.74	751.40	1.64	0.37	-----	-----	1.27	-----	-----	-----	-----	1.64
17.75	1.74	751.40	1.65	0.37	-----	-----	1.28	-----	-----	-----	-----	1.65
17.80	1.74	751.40	1.66	0.37	-----	-----	1.28	-----	-----	-----	-----	1.65
17.85	1.74	751.40	1.66	0.37	-----	-----	1.29	-----	-----	-----	-----	1.66
17.90	1.75	751.40	1.66	0.37	-----	-----	1.29	-----	-----	-----	-----	1.66
17.95	1.75	751.40	1.67	0.37	-----	-----	1.30	-----	-----	-----	-----	1.67
18.00	1.75	751.41	1.67	0.37	-----	-----	1.30	-----	-----	-----	-----	1.67
18.05	1.72	751.41	1.68	0.37	-----	-----	1.31	-----	-----	-----	-----	1.68
18.10	1.67	751.41 <<	1.68	0.37	-----	-----	1.31	-----	-----	-----	-----	1.68 <<
18.15	1.59	751.41	1.68	0.37	-----	-----	1.31	-----	-----	-----	-----	1.68
18.20	1.49	751.40	1.67	0.37	-----	-----	1.30	-----	-----	-----	-----	1.67
18.25	1.40	751.40	1.66	0.37	-----	-----	1.28	-----	-----	-----	-----	1.66
18.30	1.32	751.40	1.64	0.38	-----	-----	1.26	-----	-----	-----	-----	1.64
18.35	1.26	751.40	1.62	0.38	-----	-----	1.24	-----	-----	-----	-----	1.62
18.40	1.22	751.40	1.60	0.38	-----	-----	1.22	-----	-----	-----	-----	1.60
18.45	1.19	751.40	1.58	0.39	-----	-----	1.20	-----	-----	-----	-----	1.58
18.50	1.17	751.40	1.56	0.39	-----	-----	1.17	-----	-----	-----	-----	1.56
18.55	1.17	751.39	1.55	0.39	-----	-----	1.15	-----	-----	-----	-----	1.55
18.60	1.17	751.39	1.53	0.40	-----	-----	1.13	-----	-----	-----	-----	1.53
18.65	1.17	751.39	1.51	0.40	-----	-----	1.11	-----	-----	-----	-----	1.51

PROJECT NAME: Deer Meadows
Emergency spillway calculation Pond #3

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

1.25 x 30.73 c.f.s. = 38.4

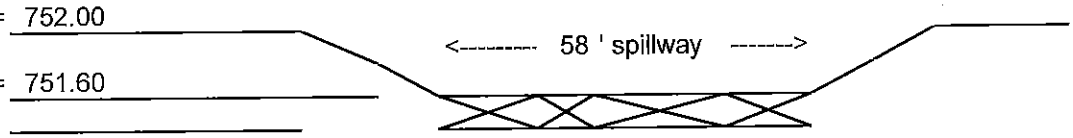
Weir Equation: Q = C L H(3/2)

Where Q = outflow
L = length of weir
C = discharge coefficient
H = hydraulic head over weir

38.413 c.f.s. = 2.6 (L) 0.25
L = 58.4 '

Top of Bank 754.00
Depth of Water= 752.00

Top of Spill Elev. = 751.60



PROJECT NAME: Deer Meadows
Emergency spillway calculation Pond #4

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

1.25 x 11.43 c.f.s. = 14.3

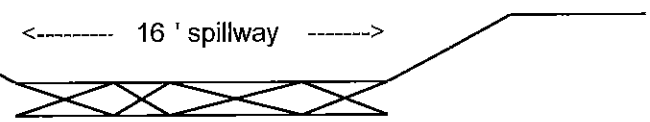
Weir Equation: Q = C L H(3/2)

Where Q = outflow
L = length of weir
C = discharge coefficient
H = hydraulic head over weir

14.288 c.f.s. = 2.6 (L) 0.35
L = 15.54 '

Top of Bank 754.50
Depth of Water= 752.50

Top of Spill Elev. = 752.00



Water Quality Calculations

Project Name: Deer Meadows **Project # 15015**

Water Quality - Pond #2

Option #1

20% of Runoff from a 1.25" storm event

Volume= 8,508 c.f. X 0.20 = 1,702 c.f.

Option #2

20% of a 0.50" direct runoff

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

= 49,334,314 c.in = 28,550 c.f.

= 28,550 c.f. X 0.20 = 5,710 c.f. <== 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 hrs + 12.0 hrs = 36.20 hrs

Pond Elevation at 36.20 hrs = 748.20 n.p. 747.95

Pond Storage Volume at 36.20 hrs = 12,495 c.f. > 5,710 c.f.

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

24.20 hrs + 18.0 hrs = 42.20 hrs

Pond Elevation at 42.20 hrs = 748.16 n.p. 747.95

Pond Storage Volume at 42.20 hrs = 10,496 c.f. > 5,710 c.f.

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

24.20 hrs + 24.0 hrs = 48.20 hrs

Pond Elevation at 48.20 hrs = 748.13 n.p. 747.95

Pond Storage Volume at 48.20 hrs = 8,997 c.f. > 5,710 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.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:50 PM

Hyd. No. 3

Thru Pond 2 - 1 hr.

Hydrograph type	= Reservoir	Peak discharge	= 0.20 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyd. No.	= 2	Reservoir name	= Pond 2
Max. Elevation	= 748.33 ft	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	-----	-----	-----	-----	-----	-----	-----	0.07
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

Continues on next page...

Thru Pond 2 - 1 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
34.00	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.05	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.10	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.15	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.20	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.25	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.30	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.35	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.40	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.45	0.00	748.22	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.50	0.00	748.21	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.55	0.00	748.21	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.60	0.00	748.21	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.65	0.00	748.21	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.70	0.00	748.21	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
34.75	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
34.80	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
34.85	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
34.90	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
34.95	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.00	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.05	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.10	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.15	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.20	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.25	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.30	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.35	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.40	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.45	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.50	0.00	748.21	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.55	0.00	748.21	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.60	0.00	748.21	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.65	0.00	748.21	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.70	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.75	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.80	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.85	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.90	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
35.95	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.00	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.05	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.10	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.15	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.20	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.25	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.30	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.35	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.40	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.45	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
36.50	0.00	748.20	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11

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
41.65	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
41.70	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
41.75	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
41.80	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
41.85	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
41.90	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
41.95	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.00	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.05	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.10	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.15	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.20	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.25	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.30	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.35	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.40	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.45	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.50	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.55	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.60	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.65	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.70	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.75	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.80	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.85	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.90	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
42.95	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
43.00	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
43.05	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
43.10	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
43.15	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
43.20	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
43.25	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
43.30	0.00	748.16	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
43.35	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.40	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.45	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.50	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.55	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.60	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.65	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.70	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.75	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.80	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.85	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.90	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
43.95	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
44.00	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
44.05	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
44.10	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
44.15	0.00	748.15	0.08	0.07	-----	-----	-----	-----	-----	-----	-----	0.07

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
46.75	0.00	748.14	0.07	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
46.80	0.00	748.14	0.07	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
46.85	0.00	748.14	0.07	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
46.90	0.00	748.14	0.07	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
46.95	0.00	748.14	0.07	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
47.00	0.00	748.14	0.07	0.07	-----	-----	-----	-----	-----	-----	-----	0.07
47.05	0.00	748.14	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.10	0.00	748.14	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.15	0.00	748.14	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.20	0.00	748.14	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.25	0.00	748.14	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.30	0.00	748.14	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.35	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.40	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.45	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.50	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.55	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.60	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.65	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.70	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.75	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.80	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.85	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.90	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
47.95	0.00	748.13	0.07	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.00	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.05	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.10	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.15	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.20	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.25	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.30	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.35	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.40	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.45	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.50	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.55	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.60	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.65	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.70	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.75	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.80	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.85	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.90	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
48.95	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
49.00	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
49.05	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
49.10	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
49.15	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
49.20	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06
49.25	0.00	748.13	0.06	0.06	-----	-----	-----	-----	-----	-----	-----	0.06

Continues on next page...

Project Name: Deer Meadows **Project # 15015**

Water Quality - Pond #3

Option #1

20% of Runoff from a 1.25" storm event

Volume= 10,672 c.f. X 0.20 = 2,134 c.f.

Option #2

20% of a 0.50" direct runoff

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

= 61,879,594 c.in = 35,810 c.f.

= 35,810 c.f. X 0.20 = 7,162 c.f. <== 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 hrs + 12.0 hrs = 32.70 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 hrs + 18.0 hrs = 38.70 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 hrs + 24.0 hrs = 44.70 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.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:51 PM

Hyd. No. 3

Thru Pond 3 - 1 hr.

Hydrograph type	= Reservoir	Peak discharge	= 0.26 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyd. No.	= 2	Reservoir name	= Pond 3
Max. Elevation	= 749.48 ft	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

Continues on next page...

Thru Pond 3 - 1 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
31.00	0.00	749.36	0.19	0.19	-----	-----	-----	-----	-----	-----	-----	0.19
31.05	0.00	749.36	0.19	0.19	-----	-----	-----	-----	-----	-----	-----	0.19
31.10	0.00	749.36	0.19	0.19	-----	-----	-----	-----	-----	-----	-----	0.19
31.15	0.00	749.35	0.19	0.19	-----	-----	-----	-----	-----	-----	-----	0.19
31.20	0.00	749.35	0.19	0.19	-----	-----	-----	-----	-----	-----	-----	0.19
31.25	0.00	749.35	0.19	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.30	0.00	749.35	0.19	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.35	0.00	749.35	0.19	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.40	0.00	749.35	0.19	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.45	0.00	749.35	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.50	0.00	749.35	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.55	0.00	749.35	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.60	0.00	749.35	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.65	0.00	749.35	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.70	0.00	749.35	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.75	0.00	749.35	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.80	0.00	749.35	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.85	0.00	749.34	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.90	0.00	749.34	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
31.95	0.00	749.34	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
32.00	0.00	749.34	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
32.05	0.00	749.34	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
32.10	0.00	749.34	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
32.15	0.00	749.34	0.18	0.18	-----	-----	-----	-----	-----	-----	-----	0.18
32.20	0.00	749.34	0.18	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.25	0.00	749.34	0.18	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.30	0.00	749.34	0.18	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.35	0.00	749.34	0.18	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.40	0.00	749.34	0.18	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.45	0.00	749.34	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.50	0.00	749.34	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.55	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.60	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.65	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.70	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.75	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.80	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.85	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.90	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
32.95	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
33.00	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
33.05	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
33.10	0.00	749.33	0.17	0.17	-----	-----	-----	-----	-----	-----	-----	0.17
33.15	0.00	749.33	0.17	0.16	-----	-----	-----	-----	-----	-----	-----	0.16
33.20	0.00	749.33	0.17	0.16	-----	-----	-----	-----	-----	-----	-----	0.16
33.25	0.00	749.33	0.17	0.16	-----	-----	-----	-----	-----	-----	-----	0.16
33.30	0.00	749.33	0.17	0.16	-----	-----	-----	-----	-----	-----	-----	0.16
33.35	0.00	749.32	0.17	0.16	-----	-----	-----	-----	-----	-----	-----	0.16
33.40	0.00	749.32	0.17	0.16	-----	-----	-----	-----	-----	-----	-----	0.16
33.45	0.00	749.32	0.17	0.16	-----	-----	-----	-----	-----	-----	-----	0.16
33.50	0.00	749.32	0.16	0.16	-----	-----	-----	-----	-----	-----	-----	0.16

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
38.65	0.00	749.27	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
38.70	0.00	749.27	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
38.75	0.00	749.27	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
38.80	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
38.85	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
38.90	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
38.95	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.00	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.05	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.10	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.15	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.20	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.25	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.30	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.35	0.00	749.26	0.12	0.12	-----	-----	-----	-----	-----	-----	-----	0.12
39.40	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.45	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.50	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.55	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.60	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.65	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.70	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.75	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.80	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.85	0.00	749.26	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.90	0.00	749.25	0.12	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
39.95	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.00	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.05	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.10	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.15	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.20	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.25	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.30	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.35	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.40	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.45	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.50	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.55	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.60	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.65	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.70	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.75	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.80	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.85	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.90	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
40.95	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
41.00	0.00	749.25	0.11	0.11	-----	-----	-----	-----	-----	-----	-----	0.11
41.05	0.00	749.24	0.11	0.10	-----	-----	-----	-----	-----	-----	-----	0.10
41.10	0.00	749.24	0.11	0.10	-----	-----	-----	-----	-----	-----	-----	0.10
41.15	0.00	749.24	0.11	0.10	-----	-----	-----	-----	-----	-----	-----	0.10

Continues on next page...

Thru Pond 3 - 1 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
43.75	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
43.80	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
43.85	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
43.90	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
43.95	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.00	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.05	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.10	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.15	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.20	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.25	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.30	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.35	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.40	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.45	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.50	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.55	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.60	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.65	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.70	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.75	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.80	0.00	749.22	0.09	0.09	-----	-----	-----	-----	-----	-----	-----	0.09
44.85	0.00	749.22	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
44.90	0.00	749.22	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
44.95	0.00	749.22	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.00	0.00	749.22	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.05	0.00	749.22	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.10	0.00	749.22	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.15	0.00	749.21	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.20	0.00	749.21	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.25	0.00	749.21	0.09	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.30	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.35	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.40	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.45	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.50	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.55	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.60	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.65	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.70	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.75	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.80	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.85	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.90	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
45.95	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
46.00	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
46.05	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
46.10	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
46.15	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
46.20	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08
46.25	0.00	749.21	0.08	0.08	-----	-----	-----	-----	-----	-----	-----	0.08

Continues on next page...

Project Name: Deer Meadows **Project # 15015**

Water Quality - Pond #4

Option #1

20% of Runoff from a 1.25" storm event

Volume= 3,718 c.f. X 0.20 = 744 c.f.

Option #2

20% of a 0.50" direct runoff

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

= 20,386,080 c.in = 11,798 c.f.

= 11,798 c.f. X 0.20 = 2,360 c.f. <== 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 hrs + 12.0 hrs = 32.65 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 hrs + 18.0 hrs = 38.65 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 hrs + 24.0 hrs = 44.65 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.

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Wednesday, Aug 12 2015, 1:51 PM

Hyd. No. 3

Thru Pond 4 - 1 hr.

Hydrograph type	= Reservoir	Peak discharge	= 0.09 cfs
Storm frequency	= 2 yrs	Time interval	= 3 min
Inflow hyd. No.	= 2	Reservoir name	= Pond 4
Max. Elevation	= 750.21 ft	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

Continues on next page...

Thru Pond 4 - 1 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
32.10	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.15	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.20	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.25	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.30	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.35	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.40	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.45	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.50	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.55	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.60	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.65	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.70	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.75	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.80	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.85	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.90	0.00	750.16	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
32.95	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.00	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.05	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.10	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.15	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.20	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.25	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.30	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.35	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.40	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.45	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.50	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.55	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.60	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.65	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.70	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.75	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.80	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.85	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.90	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
33.95	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.00	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.05	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.10	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.15	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.20	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.25	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.30	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.35	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.40	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.45	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.50	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.55	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05
34.60	0.00	750.15	0.05	0.05	-----	-----	-----	-----	-----	-----	-----	0.05

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
37.20	0.00	750.14	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.25	0.00	750.14	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.30	0.00	750.14	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.35	0.00	750.14	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.40	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.45	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.50	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.55	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.60	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.65	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.70	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.75	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.80	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.85	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.90	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
37.95	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.00	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.05	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.10	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.15	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.20	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.25	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.30	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.35	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.40	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.45	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.50	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.55	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.60	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.65	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.70	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.75	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.80	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.85	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.90	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
38.95	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.00	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.05	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.10	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.15	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.20	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.25	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.30	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.35	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.40	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.45	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.50	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.55	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.60	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.65	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04
39.70	0.00	750.13	0.04	0.04	-----	-----	-----	-----	-----	-----	-----	0.04

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
42.30	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.35	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.40	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.45	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.50	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.55	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.60	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.65	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.70	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.75	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.80	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.85	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.90	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
42.95	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.00	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.05	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.10	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.15	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.20	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.25	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.30	0.00	750.12	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.35	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.40	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.45	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.50	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.55	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.60	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.65	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.70	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.75	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.80	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.85	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.90	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
43.95	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.00	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.05	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.10	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.15	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.20	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.25	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.30	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.35	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.40	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.45	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.50	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.55	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.60	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.65	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.70	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.75	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03
44.80	0.00	750.11	0.03	0.03	-----	-----	-----	-----	-----	-----	-----	0.03

Continues on next page...

Storm Sewer Calculations

Project: Deer Meadows **By: JPH** **Date: November 13, 2015**
Location: City of Franklin, Indiana **Checked:** **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 601**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.75	56.3
CrA (C)	1/4 ac. Residential Districts	83	0.00	0.0
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
	Total Area (acres)		0.75	56.3

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

$$\frac{56.3}{0.8} = 75.0$$

CN (weighted) = 75

Time of Concentration (T/C) Calculation

1. Sheet Flow $T.C. = \dfrac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}} =$ **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: $T.C. = 16.13 \times 0.100^{0.5} = 5.10$ ft/sec

$= \dfrac{0 \text{ feet}}{5.10 \text{ ft/sec}} =$ **0.0 Minute(s)**

Paved: $T.C. = 20.33 \times 0.006^{0.5} = 1.57$ ft/sec

$= \dfrac{305 \text{ feet}}{1.57 \text{ ft/sec}} =$ **3.2 Minute(s)**

T/C Total= 8 Minute(s)
(Minimum T/C is 5 Minutes)

Weighted Curve Number (CN) Calculation **Storm Structure # 602**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.44	33.0
CrA (C)	1/4 ac. Residential Districts	83	0.00	0.0
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
	Total Area (acres)		0.44	33.0

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

$$\frac{33.0}{0.4} = 75.0$$

CN (weighted) = 75

Time of Concentration (T/C) Calculation

1. Sheet Flow $T.C. = \dfrac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}} =$ **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: $T.C. = 16.13 \times 0.100^{0.5} = 5.10$ ft/sec

$= \dfrac{0 \text{ feet}}{5.10 \text{ ft/sec}} =$ **0.0 Minute(s)**

Paved: $T.C. = 20.33 \times 0.006^{0.5} = 1.57$ ft/sec

$= \dfrac{305 \text{ feet}}{1.57 \text{ ft/sec}} =$ **3.2 Minute(s)**

T/C Total= 8 Minute(s)
(Minimum T/C is 5 Minutes)

Project: Deer Meadows | **By: JPH** | **Date: November 13, 2015**

Location: City of Franklin, Indiana | **Checked:** | **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 603**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.31	23.3
CrA (C)	1/4 ac. Residential Districts	83	0.00	0.0
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
	Total Area (acres)		0.31	23.3

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

$$\frac{23.3}{0.3} = 75.0$$

CN (weighted) = 75

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 28)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **3.9 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.100^{0.5}$ = 5.10 ft/sec

= $\frac{0 \text{ feet}}{5.10 \text{ ft/sec}}$ = **0.0 Minute(s)**

Paved: T.C.= 20.33 x $0.010^{0.5}$ = 2.03 ft/sec

= $\frac{58 \text{ feet}}{2.03 \text{ ft/sec}}$ = **0.5 Minute(s)**

T/C Total= 4 Minute(s)

(Minimum T/C is 5 Minutes)

Project: Deer Meadows | **By: JPH** | **Date: November 13, 2015**
Location: City of Franklin, Indiana | **Checked:** | **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 606**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.19	14.3
CrA (C)	1/4 ac. Residential Districts	83	0.00	0.0
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
		Total Area (acres)	0.19	14.3

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

$\frac{14.3}{0.2} = 75.0$

CN (weighted) = 75

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 36)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **4.8 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.012^{0.5}$ = 1.77 ft/sec

= $\frac{26 \text{ feet}}{1.77 \text{ ft/sec}}$ = **0.2 Minute(s)**

Paved: T.C.= 20.33 x $0.008^{0.5}$ = 1.78 ft/sec

= $\frac{0 \text{ feet}}{1.78 \text{ ft/sec}}$ = **0.0 Minute(s)**

T/C Total= 5 Minute(s)
(Minimum T/C is 5 Minutes)

Weighted Curve Number (CN) Calculation **Storm Structure # 607**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.72	54.0
CrA (C)	1/4 ac. Residential Districts	83	0.00	0.0
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
		Total Area (acres)	0.72	54.0

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

$\frac{54.0}{0.7} = 75.0$

CN (weighted) = 75

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 35)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **4.7 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.012^{0.5}$ = 1.77 ft/sec

= $\frac{145 \text{ feet}}{1.77 \text{ ft/sec}}$ = **1.4 Minute(s)**

Paved: T.C.= 20.33 x $0.008^{0.5}$ = 1.78 ft/sec

= $\frac{0 \text{ feet}}{1.78 \text{ ft/sec}}$ = **0.0 Minute(s)**

T/C Total= 6 Minute(s)
(Minimum T/C is 5 Minutes)

Project: Deer Meadows | **By: JPH** | **Date: November 13, 2015**
Location: City of Franklin, Indiana | **Checked:** | **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 608**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.50	37.5
CrA (C)	1/4 ac. Residential Districts	83	0.00	0.0
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
	Total Area (acres)		0.50	37.5

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

$\frac{37.5}{0.5}$ = 75.0

CN (weighted) = 75

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.015^{0.5}$ = 1.98 ft/sec

= $\frac{0 \text{ feet}}{1.98 \text{ ft/sec}}$ = **0.0 Minute(s)**

Paved: T.C.= 20.33 x $0.006^{0.5}$ = 1.57 ft/sec

= $\frac{285 \text{ feet}}{1.57 \text{ ft/sec}}$ = **3.0 Minute(s)**

T/C Total= 8 Minute(s)
(Minimum T/C is 5 Minutes)

Weighted Curve Number (CN) Calculation **Storm Structure # 609**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.58	43.5
CrA (C)	1/4 ac. Residential Districts	83	0.00	0.0
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
	Total Area (acres)		0.58	43.5

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

$\frac{43.5}{0.6}$ = 75.0

CN (weighted) = 75

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.020^{0.5}$ = 2.28 ft/sec

= $\frac{0 \text{ feet}}{2.28 \text{ ft/sec}}$ = **0.0 Minute(s)**

Paved: T.C.= 20.33 x $0.006^{0.5}$ = 1.57 ft/sec

= $\frac{306 \text{ feet}}{1.57 \text{ ft/sec}}$ = **3.2 Minute(s)**

T/C Total= 8 Minute(s)
(Minimum T/C is 5 Minutes)

Project: Deer Meadows | **By: JPH** | **Date: November 13, 2015**

Location: City of Franklin, Indiana | **Checked:** | **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 611**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.10	7.5
CrA (C)	1/4 ac. Residential Districts	83	0.27	22.4
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
		Total Area (acres)	0.37	29.9

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

$\frac{29.9}{0.4} = 80.8$

CN (weighted) = 81

Time of Concentration (T/C) Calculation

1. Sheet Flow $T.C. = \frac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}} =$ **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: $T.C. = 16.13 \times 0.010^{0.5} = \frac{1.61 \text{ ft/sec}}{109 \text{ feet}} = \frac{109 \text{ feet}}{1.61 \text{ ft/sec}} =$ **1.1 Minute(s)**

Paved: $T.C. = 20.33 \times 0.038^{0.5} = \frac{3.98 \text{ ft/sec}}{0 \text{ feet}} = \frac{0 \text{ feet}}{3.98 \text{ ft/sec}} =$ **0.0 Minute(s)**

T/C Total= 6 Minute(s)

(Minimum T/C is 5 Minutes)

Project: Deer Meadows | **By: JPH** | **Date: November 13, 2015**
Location: City of Franklin, Indiana | **Checked:** | **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 615**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.27	20.3
CrA (C)	1/4 ac. Residential Districts	83	0.20	16.6
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
		Total Area (acres)	0.47	36.9

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

$\frac{36.9}{0.5}$ = 78.4

CN (weighted) = 78

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.100^{0.5}$ = 5.10 ft/sec

= $\frac{0 \text{ feet}}{5.10 \text{ ft/sec}}$ = **0.0 Minute(s)**

Paved: T.C.= 20.33 x $0.006^{0.5}$ = 1.57 ft/sec

= $\frac{195 \text{ feet}}{1.57 \text{ ft/sec}}$ = **2.1 Minute(s)**

T/C Total= 7 Minute(s)
(Minimum T/C is 5 Minutes)

Weighted Curve Number (CN) Calculation **Storm Structure # 616**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.50	37.5
CrA (C)	1/4 ac. Residential Districts	83	0.27	22.4
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
		Total Area (acres)	0.77	59.9

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

$\frac{59.9}{0.8}$ = 77.8

CN (weighted) = 78

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.100^{0.5}$ = 5.10 ft/sec

= $\frac{0 \text{ feet}}{5.10 \text{ ft/sec}}$ = **0.0 Minute(s)**

Paved: T.C.= 20.33 x $0.006^{0.5}$ = 1.57 ft/sec

= $\frac{339 \text{ feet}}{1.57 \text{ ft/sec}}$ = **3.6 Minute(s)**

T/C Total= 9 Minute(s)
(Minimum T/C is 5 Minutes)

Project: Deer Meadows | **By: JPH** | **Date: November 13, 2015**
Location: City of Franklin, Indiana | **Checked:** | **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 618**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	1.17	87.8
CrA (C)	1/4 ac. Residential Districts	83	0.30	24.9
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
		Total Area (acres)	1.47	112.7

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

$\frac{112.7}{1.5} = 76.6$

CN (weighted) = 77

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 60)^{0.80}}{2.64^{0.50} \quad 0.010^{0.40}}$ = **9.5 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.012^{0.5}$ = 1.77 ft/sec

= $\frac{383 \text{ feet}}{1.77 \text{ ft/sec}}$ = **3.6 Minute(s)**

Paved: T.C.= 20.33 x $0.007^{0.5}$ = 1.72 ft/sec

= $\frac{0 \text{ feet}}{1.72 \text{ ft/sec}}$ = **0.0 Minute(s)**

T/C Total= 13 Minute(s)
(Minimum T/C is 5 Minutes)

Weighted Curve Number (CN) Calculation **Storm Structure # 619**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.36	27.0
CrA (C)	1/4 ac. Residential Districts	83	0.31	25.7
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
		Total Area (acres)	0.67	52.7

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

$\frac{52.7}{0.7} = 78.7$

CN (weighted) = 79

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 45)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **5.7 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.012^{0.5}$ = 1.77 ft/sec

= $\frac{160 \text{ feet}}{1.77 \text{ ft/sec}}$ = **1.5 Minute(s)**

Paved: T.C.= 20.33 x $0.100^{0.5}$ = 6.43 ft/sec

= $\frac{0 \text{ feet}}{6.43 \text{ ft/sec}}$ = **0.0 Minute(s)**

T/C Total= 7 Minute(s)
(Minimum T/C is 5 Minutes)

Project: Deer Meadows | **By: JPH** | **Date: November 13, 2015**
Location: City of Franklin, Indiana | **Checked:** | **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 620**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.29	21.8
CrA (C)	1/4 ac. Residential Districts	83	0.30	24.9
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
		Total Area (acres)	0.59	46.7

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

$\frac{46.7}{0.6}$ = 79.1

CN (weighted) = 79

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.010^{0.5}$ = 1.61 ft/sec

= $\frac{0 \text{ feet}}{1.61 \text{ ft/sec}}$ = **0.0 Minute(s)**

Paved: T.C.= 20.33 x $0.008^{0.5}$ = 1.76 ft/sec

= $\frac{196 \text{ feet}}{1.76 \text{ ft/sec}}$ = **1.9 Minute(s)**

T/C Total= 7 Minute(s)
(Minimum T/C is 5 Minutes)

Weighted Curve Number (CN) Calculation **Storm Structure # 621**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.37	27.8
CrA (C)	1/4 ac. Residential Districts	83	0.25	20.8
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
		Total Area (acres)	0.62	48.5

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

$\frac{48.5}{0.6}$ = 78.2

CN (weighted) = 78

Time of Concentration (T/C) Calculation

1. Sheet Flow T.C.= $\frac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}}$ = **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: T.C.= 16.13 x $0.100^{0.5}$ = 5.10 ft/sec

= $\frac{0 \text{ feet}}{5.10 \text{ ft/sec}}$ = **0.0 Minute(s)**

Paved: T.C.= 20.33 x $0.008^{0.5}$ = 1.76 ft/sec

= $\frac{196 \text{ feet}}{1.76 \text{ ft/sec}}$ = **1.9 Minute(s)**

T/C Total= 7 Minute(s)
(Minimum T/C is 5 Minutes)

Project: Deer Meadows | **By: JPH** | **Date: November 13, 2015**

Location: City of Franklin, Indiana | **Checked:** | **Date:**

Weighted Curve Number (CN) Calculation **Storm Structure # 623**

Soil Name and Hydrologic Group	Cover Description	CN 1/	Area (in acres)	Product of CN x area
Br, CsB2, MnB2, MnC2, (B)	1/4 ac. Residential Districts	75	0.09	6.8
CrA (C)	1/4 ac. Residential Districts	83	0.44	36.5
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
		Total Area (acres)	0.53	43.3

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

$$\frac{43.3}{0.5} = 81.6$$

CN (weighted) = 82

Time of Concentration (T/C) Calculation

1. Sheet Flow $T.C. = \dfrac{0.007 \times (0.15 \times 40)^{0.80}}{2.64^{0.50} \quad 0.020^{0.40}} =$ **5.2 Minute(s)**

2. Shallow Concentrated

Unpaved: $T.C. = 16.13 \times 0.012^{0.5} = 1.77$ ft/sec

$= \dfrac{145 \text{ feet}}{1.77 \text{ ft/sec}} =$ **1.4 Minute(s)**

Paved: $T.C. = 20.33 \times 0.008^{0.5} = 1.76$ ft/sec

$= \dfrac{0 \text{ feet}}{1.76 \text{ ft/sec}} =$ **0.0 Minute(s)**

T/C Total= 7 Minute(s)

(Minimum T/C is 5 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	Manual	2.61	2	730	92,514	----	------	------	Pond 3 Release
2	SCS Runoff	0.17	2	14	194	----	------	------	Stm Str. 603
3	Combine	2.61	2	730	92,708	1, 2	------	------	Total to Str. 603
4	SCS Runoff	0.23	2	18	294	----	------	------	Stm Str. 602
5	Combine	2.61	2	730	93,003	3, 4	------	------	Total to Str. 602
6	SCS Runoff	0.40	2	18	502	----	------	------	Stm Str. 601
7	Combine	2.61	2	730	93,504	5, 6	------	------	Total to Str. 601

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	2.61	2	730	92,514	----	------	------	Pond 3 Release
2	SCS Runoff	0.19	2	20	381	----	------	------	Stm Str. 603
3	Combine	2.61	2	730	92,895	1, 2	------	------	Total to Str. 603
4	SCS Runoff	0.27	2	22	577	----	------	------	Stm Str. 602
5	Combine	2.61	2	730	93,472	3, 4	------	------	Total to Str. 602
6	SCS Runoff	0.46	2	22	984	----	------	------	Stm Str. 601
7	Combine	2.61	2	730	94,456	5, 6	------	------	Total to Str. 601

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	2.61	2	730	92,514	----	------	------	Pond 3 Release
2	SCS Runoff	0.17	2	30	626	----	------	------	Stm Str. 603
3	Combine	2.61	2	730	93,139	1, 2	------	------	Total to Str. 603
4	SCS Runoff	0.25	2	34	947	----	------	------	Stm Str. 602
5	Combine	2.61	2	730	94,087	3, 4	------	------	Total to Str. 602
6	SCS Runoff	0.43	2	34	1,614	----	------	------	Stm Str. 601
7	Combine	2.61	2	730	95,701	5, 6	------	------	Total to Str. 601

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:40 AM

Hyd. No. 1

Pond 3 Release

Hydrograph type	= Manual	Peak discharge	= 2.61 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min

Hydrograph Volume = 92,514 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Outflow cfs)	Time (hrs)	Outflow cfs)	Time (hrs)	Outflow cfs)	Time (hrs)	Outflow cfs)
11.37	1.31	12.50	2.38	13.63	1.74	14.77	1.53
11.40	1.40	12.53	2.36	13.67	1.74	14.80	1.51
11.43	1.48	12.57	2.34	13.70	1.73	14.83	1.49
11.47	1.55	12.60	2.32	13.73	1.72	14.87	1.48
11.50	1.62	12.63	2.30	13.77	1.72	14.90	1.46
11.53	1.67	12.67	2.28	13.80	1.71	14.93	1.45
11.57	1.72	12.70	2.27	13.83	1.71	14.97	1.43
11.60	1.77	12.73	2.25	13.87	1.70	15.00	1.42
11.63	1.86	12.77	2.24	13.90	1.70	15.03	1.40
11.67	1.94	12.80	2.23	13.93	1.69	15.07	1.39
11.70	2.01	12.83	2.22	13.97	1.69	15.10	1.38
11.73	2.08	12.87	2.20	14.00	1.68	15.13	1.37
11.77	2.14	12.90	2.19	14.03	1.68	15.17	1.36
11.80	2.20	12.93	2.17	14.07	1.68	15.20	1.34
11.83	2.26	12.97	2.15	14.10	1.67	15.23	1.33
11.87	2.31	13.00	2.13	14.13	1.67	15.27	1.33
11.90	2.36	13.03	2.10	14.17	1.67	15.30	1.32
11.93	2.41	13.07	2.07	14.20	1.66	15.33	1.31
11.97	2.45	13.10	2.04	14.23	1.66	15.37	1.31
12.00	2.49	13.13	2.01	14.27	1.66	15.40	1.31
12.03	2.53	13.17	1.98	14.30	1.65	15.43	1.32
12.07	2.56	13.20	1.96	14.33	1.65	15.47	1.32
12.10	2.59	13.23	1.93	14.37	1.65	15.50	1.33
12.13	2.60	13.27	1.90	14.40	1.65	15.53	1.34
12.17	2.61 <<	13.30	1.88	14.43	1.64	15.57	1.35
12.20	2.60	13.33	1.86	14.47	1.64	15.60	1.36
12.23	2.59	13.37	1.84	14.50	1.64	15.63	1.37
12.27	2.57	13.40	1.82	14.53	1.63	15.67	1.38
12.30	2.54	13.43	1.80	14.57	1.62	15.70	1.39
12.33	2.51	13.47	1.79	14.60	1.61	15.73	1.39
12.37	2.48	13.50	1.77	14.63	1.59	15.77	1.40
12.40	2.45	13.53	1.76	14.67	1.58	15.80	1.41
12.43	2.43	13.57	1.76	14.70	1.56	15.83	1.42
12.47	2.40	13.60	1.75	14.73	1.55	15.87	1.42

Continues on next page...

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:40 AM

Hyd. No. 2

Stm Str. 603

Hydrograph type	= SCS Runoff	Peak discharge	= 0.19 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.31 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 5.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 381 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.23	0.13
0.27	0.17
0.30	0.19
0.33	0.19 <<
0.37	0.18
0.40	0.17
0.43	0.16
0.47	0.16
0.50	0.15
0.53	0.13
0.57	0.11
0.60	0.10

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:40 AM

Hyd. No. 3

Total to Str. 603

Hydrograph type	= Combine	Peak discharge	= 2.61 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 1, 2		

Hydrograph Volume = 92,895 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 2 = (cfs)	Outflow (cfs)
11.37	1.31	0.00	1.31
11.40	1.40	0.00	1.40
11.43	1.48	0.00	1.48
11.47	1.55	0.00	1.55
11.50	1.62	0.00	1.62
11.53	1.67	0.00	1.67
11.57	1.72	0.00	1.72
11.60	1.77	0.00	1.77
11.63	1.86	0.00	1.86
11.67	1.94	0.00	1.94
11.70	2.01	0.00	2.01
11.73	2.08	0.00	2.08
11.77	2.14	0.00	2.14
11.80	2.20	0.00	2.20
11.83	2.26	0.00	2.26
11.87	2.31	0.00	2.31
11.90	2.36	0.00	2.36
11.93	2.41	0.00	2.41
11.97	2.45	0.00	2.45
12.00	2.49	0.00	2.49
12.03	2.53	0.00	2.53
12.07	2.56	0.00	2.56
12.10	2.59	0.00	2.59
12.13	2.60	0.00	2.60
12.17	2.61 <<	0.00	2.61 <<
12.20	2.60	0.00	2.60
12.23	2.59	0.00	2.59
12.27	2.57	0.00	2.57
12.30	2.54	0.00	2.54
12.33	2.51	0.00	2.51
12.37	2.48	0.00	2.48
12.40	2.45	0.00	2.45
12.43	2.43	0.00	2.43
12.47	2.40	0.00	2.40
12.50	2.38	0.00	2.38
12.53	2.36	0.00	2.36
12.57	2.34	0.00	2.34
12.60	2.32	0.00	2.32

Continues on next page...

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:40 AM

Hyd. No. 4

Stm Str. 602

Hydrograph type	= SCS Runoff	Peak discharge	= 0.27 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.44 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 8.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 577 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.27	0.17
0.30	0.22
0.33	0.26
0.37	0.27 <<
0.40	0.27
0.43	0.26
0.47	0.25
0.50	0.24
0.53	0.23
0.57	0.20
0.60	0.18
0.63	0.16
0.67	0.15
0.70	0.15
0.73	0.15
0.77	0.15
0.80	0.15
0.83	0.15
0.87	0.15
0.90	0.14

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:40 AM

Hyd. No. 5

Total to Str. 602

Hydrograph type	= Combine	Peak discharge	= 2.61 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 3, 4		

Hydrograph Volume = 93,472 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 3 + (cfs)	Hyd. 4 = (cfs)	Outflow (cfs)
11.37	1.31	0.00	1.31
11.40	1.40	0.00	1.40
11.43	1.48	0.00	1.48
11.47	1.55	0.00	1.55
11.50	1.62	0.00	1.62
11.53	1.67	0.00	1.67
11.57	1.72	0.00	1.72
11.60	1.77	0.00	1.77
11.63	1.86	0.00	1.86
11.67	1.94	0.00	1.94
11.70	2.01	0.00	2.01
11.73	2.08	0.00	2.08
11.77	2.14	0.00	2.14
11.80	2.20	0.00	2.20
11.83	2.26	0.00	2.26
11.87	2.31	0.00	2.31
11.90	2.36	0.00	2.36
11.93	2.41	0.00	2.41
11.97	2.45	0.00	2.45
12.00	2.49	0.00	2.49
12.03	2.53	0.00	2.53
12.07	2.56	0.00	2.56
12.10	2.59	0.00	2.59
12.13	2.60	0.00	2.60
12.17	2.61 <<	0.00	2.61 <<
12.20	2.60	0.00	2.60
12.23	2.59	0.00	2.59
12.27	2.57	0.00	2.57
12.30	2.54	0.00	2.54
12.33	2.51	0.00	2.51
12.37	2.48	0.00	2.48
12.40	2.45	0.00	2.45
12.43	2.43	0.00	2.43
12.47	2.40	0.00	2.40
12.50	2.38	0.00	2.38
12.53	2.36	0.00	2.36
12.57	2.34	0.00	2.34
12.60	2.32	0.00	2.32

Continues on next page...

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:40 AM

Hyd. No. 6

Stm Str. 601

Hydrograph type	= SCS Runoff	Peak discharge	= 0.46 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.75 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 8.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 984 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.27	0.29
0.30	0.38
0.33	0.44
0.37	0.46 <<
0.40	0.46
0.43	0.45
0.47	0.43
0.50	0.42
0.53	0.39
0.57	0.35
0.60	0.31
0.63	0.28
0.67	0.26
0.70	0.25
0.73	0.25
0.77	0.25
0.80	0.26
0.83	0.26
0.87	0.26
0.90	0.25

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:40 AM

Hyd. No. 7

Total to Str. 601

Hydrograph type	= Combine	Peak discharge	= 2.61 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 5, 6		

Hydrograph Volume = 94,456 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
11.37	1.31	0.00	1.31
11.40	1.40	0.00	1.40
11.43	1.48	0.00	1.48
11.47	1.55	0.00	1.55
11.50	1.62	0.00	1.62
11.53	1.67	0.00	1.67
11.57	1.72	0.00	1.72
11.60	1.77	0.00	1.77
11.63	1.86	0.00	1.86
11.67	1.94	0.00	1.94
11.70	2.01	0.00	2.01
11.73	2.08	0.00	2.08
11.77	2.14	0.00	2.14
11.80	2.20	0.00	2.20
11.83	2.26	0.00	2.26
11.87	2.31	0.00	2.31
11.90	2.36	0.00	2.36
11.93	2.41	0.00	2.41
11.97	2.45	0.00	2.45
12.00	2.49	0.00	2.49
12.03	2.53	0.00	2.53
12.07	2.56	0.00	2.56
12.10	2.59	0.00	2.59
12.13	2.60	0.00	2.60
12.17	2.61 <<	0.00	2.61 <<
12.20	2.60	0.00	2.60
12.23	2.59	0.00	2.59
12.27	2.57	0.00	2.57
12.30	2.54	0.00	2.54
12.33	2.51	0.00	2.51
12.37	2.48	0.00	2.48
12.40	2.45	0.00	2.45
12.43	2.43	0.00	2.43
12.47	2.40	0.00	2.40
12.50	2.38	0.00	2.38
12.53	2.36	0.00	2.36
12.57	2.34	0.00	2.34
12.60	2.32	0.00	2.32

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	0.40	2	12	420	----	------	------	Stm Str. 611
2	SCS Runoff	0.31	2	18	388	----	------	------	Stm Str. 609
3	Combine	0.63	2	14	808	1, 2	------	------	Total to Str. 609
4	SCS Runoff	0.27	2	18	334	----	------	------	Stm Str. 608
5	Combine	0.88	2	16	1,142	3, 4	------	------	Total to Str. 608
6	SCS Runoff	0.40	2	14	451	----	------	------	Stm Str. 607
7	Combine	1.27	2	16	1,593	5, 6	------	------	Total to Str. 607
8	SCS Runoff	0.11	2	14	119	----	------	------	Stm Str. 606
9	Combine	1.37	2	16	1,713	7, 8	------	------	Total to Str. 606

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	0.39	2	18	728	----	------	------	Stm Str. 611
2	SCS Runoff	0.36	2	22	761	----	------	------	Stm Str. 609
3	Combine	0.70	2	20	1,489	1, 2	------	------	Total to Str. 609
4	SCS Runoff	0.31	2	22	656	----	------	------	Stm Str. 608
5	Combine	1.00	2	22	2,145	3, 4	------	------	Total to Str. 608
6	SCS Runoff	0.44	2	20	886	----	------	------	Stm Str. 607
7	Combine	1.43	2	20	3,031	5, 6	------	------	Total to Str. 607
8	SCS Runoff	0.12	2	20	234	----	------	------	Stm Str. 606
9	Combine	1.55	2	20	3,265	7, 8	------	------	Total to Str. 606

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	0.31	2	30	1,096	----	------	------	Stm Str. 611
2	SCS Runoff	0.33	2	34	1,248	----	------	------	Stm Str. 609
3	Combine	0.64	2	32	2,345	1, 2	------	------	Total to Str. 609
4	SCS Runoff	0.29	2	34	1,076	----	------	------	Stm Str. 608
5	Combine	0.92	2	32	3,421	3, 4	------	------	Total to Str. 608
6	SCS Runoff	0.40	2	30	1,453	----	------	------	Stm Str. 607
7	Combine	1.32	2	32	4,874	5, 6	------	------	Total to Str. 607
8	SCS Runoff	0.11	2	30	383	----	------	------	Stm Str. 606
9	Combine	1.42	2	32	5,257	7, 8	------	------	Total to Str. 606

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 1

Stm Str. 611

Hydrograph type	= SCS Runoff	Peak discharge	= 0.39 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.37 ac	Curve number	= 81
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 728 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.17	0.20
0.20	0.29
0.23	0.36
0.27	0.39
0.30	0.39 <<
0.33	0.37
0.37	0.34
0.40	0.31
0.43	0.29
0.47	0.28
0.50	0.26
0.53	0.22

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 2

Stm Str. 609

Hydrograph type	= SCS Runoff	Peak discharge	= 0.36 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.58 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 8.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 761 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.27	0.23
0.30	0.29
0.33	0.34
0.37	0.36 <<
0.40	0.36
0.43	0.35
0.47	0.34
0.50	0.32
0.53	0.30
0.57	0.27
0.60	0.24
0.63	0.22
0.67	0.20
0.70	0.19
0.73	0.19
0.77	0.20
0.80	0.20
0.83	0.20
0.87	0.20
0.90	0.19

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 3

Total to Str. 609

Hydrograph type	= Combine	Peak discharge	= 0.70 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 1, 2		

Hydrograph Volume = 1,489 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 2 = (cfs)	Outflow (cfs)
0.20	0.29	0.08	0.37
0.23	0.36	0.15	0.51
0.27	0.39	0.23	0.61
0.30	0.39 <<	0.29	0.68
0.33	0.37	0.34	0.70 <<
0.37	0.34	0.36 <<	0.69
0.40	0.31	0.36	0.66
0.43	0.29	0.35	0.64
0.47	0.28	0.34	0.61
0.50	0.26	0.32	0.58
0.53	0.22	0.30	0.52
0.57	0.18	0.27	0.45
0.60	0.16	0.24	0.40
0.63	0.15	0.22	0.37
0.67	0.16	0.20	0.36
0.77	0.16	0.20	0.36
0.80	0.16	0.20	0.36
0.83	0.16	0.20	0.37
0.87	0.16	0.20	0.36

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 4

Stm Str. 608

Hydrograph type	= SCS Runoff	Peak discharge	= 0.29 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.50 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 8.0 min
Total precip.	= 2.40 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 1,076 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (min cfs)		Time -- Outflow (min cfs)	
12	0.01	80	0.12
14	0.02	82	0.12
16	0.05	84	0.12
18	0.09	86	0.12
20	0.13	88	0.13
22	0.16	90	0.13
24	0.20	92	0.13
26	0.23	94	0.13
28	0.25	96	0.13
30	0.27	98	0.13
32	0.28	100	0.13
34	0.29 <<	102	0.13
36	0.28	104	0.13
38	0.27	106	0.12
40	0.27	108	0.10
42	0.26	110	0.09
44	0.25	112	0.08
46	0.24	114	0.07
48	0.23	116	0.07
50	0.22	118	0.08
52	0.22	120	0.10
54	0.22	122	0.10
56	0.21	124	0.09
58	0.21	126	0.06
60	0.20	128	0.04
62	0.18	130	0.02
64	0.17	132	0.01
66	0.15		
68	0.13		
70	0.13	*...End*	
72	0.12		
74	0.12		
76	0.12		
78	0.12		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 5

Total to Str. 608

Hydrograph type	= Combine	Peak discharge	= 0.92 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 3, 4		

Hydrograph Volume = 3,421 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time (min)	Hyd. 3 + (cfs)	Hyd. 4 = (cfs)	Outflow (cfs)
10	0.03	0.00	0.03
12	0.11	0.01	0.12
14	0.21	0.02	0.23
16	0.28	0.05	0.33
18	0.34	0.09	0.43
20	0.41	0.13	0.53
22	0.47	0.16	0.63
24	0.53	0.20	0.73
26	0.57	0.23	0.80
28	0.60	0.25	0.86
30	0.63	0.27	0.91
32	0.64 <<	0.28	0.92 <<
34	0.62	0.29 <<	0.90
36	0.60	0.28	0.88
38	0.58	0.27	0.85
40	0.55	0.27	0.82
42	0.54	0.26	0.79
44	0.51	0.25	0.76
46	0.49	0.24	0.73
48	0.46	0.23	0.69
50	0.45	0.22	0.67
52	0.45	0.22	0.67
54	0.45	0.22	0.67
56	0.44	0.21	0.65
58	0.41	0.21	0.62
60	0.39	0.20	0.59
62	0.36	0.18	0.54
64	0.32	0.17	0.49
66	0.28	0.15	0.43
68	0.26	0.13	0.40
70	0.25	0.13	0.38
72	0.25	0.12	0.37
74	0.25	0.12	0.37
76	0.25	0.12	0.37
78	0.25	0.12	0.37
80	0.25	0.12	0.37
82	0.25	0.12	0.38
84	0.25	0.12	0.38

Continues on next page...

Total to Str. 608

Hydrograph Discharge Table

Time (min)	Hyd. 3 + (cfs)	Hyd. 4 = (cfs)	Outflow (cfs)
86	0.26	0.12	0.38
88	0.26	0.13	0.38
90	0.26	0.13	0.38
92	0.26	0.13	0.39
94	0.26	0.13	0.39
96	0.26	0.13	0.39
98	0.26	0.13	0.39
100	0.26	0.13	0.40
102	0.27	0.13	0.40
104	0.25	0.13	0.38
106	0.21	0.12	0.33
108	0.18	0.10	0.28
110	0.16	0.09	0.24
112	0.15	0.08	0.22
114	0.14	0.07	0.21
116	0.15	0.07	0.23
118	0.19	0.08	0.28
120	0.23	0.10	0.33
122	0.21	0.10	0.32
124	0.15	0.09	0.25
126	0.09	0.06	0.16
128	0.05	0.04	0.09
130	0.02	0.02	0.04
132	0.01	0.01	0.01

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 6

Stm Str. 607

Hydrograph type	= SCS Runoff	Peak discharge	= 0.40 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.72 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 6.0 min
Total precip.	= 2.40 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 1,453 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time -- (min	Outflow cfs)	Time -- (min	Outflow cfs)
12	0.02	80	0.17
14	0.07	82	0.17
16	0.13	84	0.17
18	0.19	86	0.17
20	0.25	88	0.17
22	0.29	90	0.17
24	0.33	92	0.17
26	0.36	94	0.17
28	0.38	96	0.18
30	0.40 <<	98	0.18
32	0.40	100	0.18
34	0.38	102	0.18
36	0.37	104	0.16
38	0.35	106	0.13
40	0.34	108	0.10
42	0.33	110	0.09
44	0.32	112	0.09
46	0.30	114	0.09
48	0.29	116	0.11
50	0.29	118	0.15
52	0.29	120	0.17
54	0.30	122	0.15
56	0.29	124	0.07
58	0.26	126	0.02
60	0.24		
62	0.22		
64	0.19	*...End*	
66	0.17		
68	0.16		
70	0.16		
72	0.16		
74	0.16		
76	0.16		
78	0.17		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 7

Total to Str. 607

Hydrograph type	= Combine	Peak discharge	= 1.32 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 5, 6		

Hydrograph Volume = 4,874 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time (min)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
10	0.03	0.00	0.03
12	0.12	0.02	0.14
14	0.23	0.07	0.30
16	0.33	0.13	0.46
18	0.43	0.19	0.62
20	0.53	0.25	0.78
22	0.63	0.29	0.92
24	0.73	0.33	1.06
26	0.80	0.36	1.16
28	0.86	0.38	1.24
30	0.91	0.40 <<	1.30
32	0.92 <<	0.40	1.32 <<
34	0.90	0.38	1.28
36	0.88	0.37	1.24
38	0.85	0.35	1.20
40	0.82	0.34	1.16
42	0.79	0.33	1.12
44	0.76	0.32	1.08
46	0.73	0.30	1.03
48	0.69	0.29	0.98
50	0.67	0.29	0.96
52	0.67	0.29	0.96
54	0.67	0.30	0.96
56	0.65	0.29	0.94
58	0.62	0.26	0.88
60	0.59	0.24	0.83
62	0.54	0.22	0.76
64	0.49	0.19	0.67
66	0.43	0.17	0.60
68	0.40	0.16	0.56
70	0.38	0.16	0.54
72	0.37	0.16	0.53
74	0.37	0.16	0.53
76	0.37	0.16	0.53
78	0.37	0.17	0.54
80	0.37	0.17	0.54
82	0.38	0.17	0.54
84	0.38	0.17	0.55

Continues on next page...

Total to Str. 607

Hydrograph Discharge Table

Time (min)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
86	0.38	0.17	0.55
88	0.38	0.17	0.55
90	0.38	0.17	0.56
92	0.39	0.17	0.56
94	0.39	0.17	0.56
96	0.39	0.18	0.57
98	0.39	0.18	0.57
100	0.40	0.18	0.57
102	0.40	0.18	0.58
104	0.38	0.16	0.54
106	0.33	0.13	0.46
108	0.28	0.10	0.38
110	0.24	0.09	0.34
112	0.22	0.09	0.31
114	0.21	0.09	0.30
116	0.23	0.11	0.34
118	0.28	0.15	0.42
120	0.33	0.17	0.50
122	0.32	0.15	0.47
124	0.25	0.07	0.32
126	0.16	0.02	0.18
128	0.09	0.00	0.09
130	0.04	0.00	0.04
132	0.01	0.00	0.01

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 8

Stm Str. 606

Hydrograph type	= SCS Runoff	Peak discharge	= 0.11 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.19 ac	Curve number	= 75
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 5.0 min
Total precip.	= 2.40 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 383 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (min cfs)		Time -- Outflow (min cfs)	
12	0.00	80	0.04
14	0.02	82	0.04
16	0.03	84	0.04
18	0.05	86	0.04
20	0.07	88	0.05
22	0.08	90	0.05
24	0.09	92	0.05
26	0.09	94	0.05
28	0.10	96	0.05
30	0.11 <<	98	0.05
32	0.11	100	0.05
34	0.10	102	0.05
36	0.10	104	0.04
38	0.09	106	0.03
40	0.09	108	0.03
42	0.09	110	0.02
44	0.08	112	0.02
46	0.08	114	0.02
48	0.08	116	0.03
50	0.08	118	0.04
52	0.08	120	0.05
54	0.08	122	0.04
56	0.08	124	0.02
58	0.07	126	0.01
60	0.06		
62	0.06		
64	0.05	*...End*	
66	0.04		
68	0.04		
70	0.04		
72	0.04		
74	0.04		
76	0.04		
78	0.04		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve | Thursday, Nov 12 2015, 11:56 AM

Hyd. No. 9

Total to Str. 606

Hydrograph type	= Combine	Peak discharge	= 1.42 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 7, 8		

Hydrograph Volume = 5,257 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time (min)	Hyd. 7 + (cfs)	Hyd. 8 = (cfs)	Outflow (cfs)
10	0.03	0.00	0.03
12	0.14	0.00	0.14
14	0.30	0.02	0.31
16	0.46	0.03	0.49
18	0.62	0.05	0.67
20	0.78	0.07	0.84
22	0.92	0.08	1.00
24	1.06	0.09	1.15
26	1.16	0.09	1.26
28	1.24	0.10	1.34
30	1.30	0.11 <<	1.41
32	1.32 <<	0.11	1.42 <<
34	1.28	0.10	1.38
36	1.24	0.10	1.34
38	1.20	0.09	1.29
40	1.16	0.09	1.25
42	1.12	0.09	1.21
44	1.08	0.08	1.16
46	1.03	0.08	1.11
48	0.98	0.08	1.06
50	0.96	0.08	1.03
52	0.96	0.08	1.04
54	0.96	0.08	1.04
56	0.94	0.08	1.01
58	0.88	0.07	0.95
60	0.83	0.06	0.89
62	0.76	0.06	0.82
64	0.67	0.05	0.72
66	0.60	0.04	0.65
68	0.56	0.04	0.60
70	0.54	0.04	0.59
72	0.53	0.04	0.58
74	0.53	0.04	0.57
76	0.53	0.04	0.58
78	0.54	0.04	0.58
80	0.54	0.04	0.58
82	0.54	0.04	0.59
84	0.55	0.04	0.59

Continues on next page...

Total to Str. 606

Hydrograph Discharge Table

Time (min)	Hyd. 7 + (cfs)	Hyd. 8 = (cfs)	Outflow (cfs)
86	0.55	0.04	0.60
88	0.55	0.05	0.60
90	0.56	0.05	0.60
92	0.56	0.05	0.61
94	0.56	0.05	0.61
96	0.57	0.05	0.61
98	0.57	0.05	0.62
100	0.57	0.05	0.62
102	0.58	0.05	0.62
104	0.54	0.04	0.58
106	0.46	0.03	0.49
108	0.38	0.03	0.41
110	0.34	0.02	0.36
112	0.31	0.02	0.34
114	0.30	0.02	0.32
116	0.34	0.03	0.37
118	0.42	0.04	0.46
120	0.50	0.05	0.55
122	0.47	0.04	0.50
124	0.32	0.02	0.34
126	0.18	0.01	0.19
128	0.09	0.00	0.09
130	0.04	0.00	0.04
132	0.01	0.00	0.01

...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	0.59	2	16	718	----	------	------	Stm Str. 623
2	SCS Runoff	0.46	2	16	573	----	------	------	Stm Str. 621
3	Combine	1.06	2	16	1,291	1, 2	------	------	Total to Str. 621
4	SCS Runoff	0.49	2	16	599	----	------	------	Stm Str. 620
5	Combine	1.55	2	16	1,890	3, 4	------	------	Total to Str. 620
6	SCS Runoff	0.56	2	16	680	----	------	------	Stm Str. 619
7	Combine	2.10	2	16	2,570	5, 6	------	------	Total to Str. 619
8	SCS Runoff	0.90	2	20	1,267	----	------	------	Stm Str. 618
9	Combine	2.90	2	18	3,836	7, 8	------	------	Total to Str. 617.2
10	SCS Runoff	0.57	2	16	711	----	------	------	Stm Str. 616
11	Combine	3.47	2	18	4,548	9, 10	------	------	Total to Str. 616
12	SCS Runoff	0.35	2	16	434	----	------	------	Stm Str. 615
13	Combine	3.82	2	18	4,982	11, 12	------	------	Total to Str. 615

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	0.61	2	20	1,197	----	------	------	Stm Str. 623
2	SCS Runoff	0.51	2	22	1,035	----	------	------	Stm Str. 621
3	Combine	1.11	2	20	2,232	1, 2	------	------	Total to Str. 621
4	SCS Runoff	0.53	2	22	1,060	----	------	------	Stm Str. 620
5	Combine	1.64	2	20	3,292	3, 4	------	------	Total to Str. 620
6	SCS Runoff	0.60	2	22	1,203	----	------	------	Stm Str. 619
7	Combine	2.24	2	20	4,495	5, 6	------	------	Total to Str. 619
8	SCS Runoff	1.07	2	26	2,345	----	------	------	Stm Str. 618
9	Combine	3.21	2	22	6,840	7, 8	------	------	Total to Str. 617.2
10	SCS Runoff	0.63	2	22	1,285	----	------	------	Stm Str. 616
11	Combine	3.84	2	22	8,125	9, 10	------	------	Total to Str. 616
12	SCS Runoff	0.39	2	22	784	----	------	------	Stm Str. 615
13	Combine	4.23	2	22	8,909	11, 12	------	------	Total to Str. 615

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	0.50	2	32	1,777	----	------	------	Stm Str. 623
2	SCS Runoff	0.45	2	32	1,628	----	------	------	Stm Str. 621
3	Combine	0.95	2	32	3,405	1, 2	------	------	Total to Str. 621
4	SCS Runoff	0.46	2	32	1,651	----	------	------	Stm Str. 620
5	Combine	1.40	2	32	5,056	3, 4	------	------	Total to Str. 620
6	SCS Runoff	0.52	2	32	1,875	----	------	------	Stm Str. 619
7	Combine	1.92	2	32	6,932	5, 6	------	------	Total to Str. 619
8	SCS Runoff	0.99	2	36	3,727	----	------	------	Stm Str. 618
9	Combine	2.87	2	34	10,659	7, 8	------	------	Total to Str. 617.2
10	SCS Runoff	0.55	2	32	2,021	----	------	------	Stm Str. 616
11	Combine	3.43	2	34	12,680	9, 10	------	------	Total to Str. 616
12	SCS Runoff	0.34	2	32	1,234	----	------	------	Stm Str. 615
13	Combine	3.76	2	34	13,914	11, 12	------	------	Total to Str. 615

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 1

Stm Str. 623

Hydrograph type	= SCS Runoff	Peak discharge	= 0.61 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.53 ac	Curve number	= 82
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 7.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 1,197 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.20	0.32
0.23	0.44
0.27	0.54
0.30	0.60
0.33	0.61 <<
0.37	0.60
0.40	0.56
0.43	0.52
0.47	0.49
0.50	0.45
0.53	0.41
0.57	0.37
0.60	0.32

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 2

Stm Str. 621

Hydrograph type	= SCS Runoff	Peak discharge	= 0.51 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.62 ac	Curve number	= 78
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 7.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 1,035 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.23	0.28
0.27	0.38
0.30	0.46
0.33	0.50
0.37	0.51 <<
0.40	0.49
0.43	0.47
0.47	0.44
0.50	0.42
0.53	0.39
0.57	0.35
0.60	0.31
0.63	0.28
0.67	0.25

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve | Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 3

Total to Str. 621

Hydrograph type	= Combine	Peak discharge	= 1.11 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 1, 2		

Hydrograph Volume = 2,232 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 1 + (cfs)	Hyd. 2 = (cfs)	Outflow (cfs)
0.23	0.44	0.28	0.71
0.27	0.54	0.38	0.92
0.30	0.60	0.46	1.05
0.33	0.61 <<	0.50	1.11 <<
0.37	0.60	0.51 <<	1.10
0.40	0.56	0.49	1.05
0.43	0.52	0.47	0.99
0.47	0.49	0.44	0.93
0.50	0.45	0.42	0.87
0.53	0.41	0.39	0.80
0.57	0.37	0.35	0.72
0.60	0.32	0.31	0.63
0.63	0.29	0.28	0.56

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 4

Stm Str. 620

Hydrograph type	= SCS Runoff	Peak discharge	= 0.53 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.59 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 7.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 1,060 cuft

(Printed values >= 50% of Qp)

Hydrograph Discharge Table

Time (hrs	Outflow cfs)
0.23	0.31
0.27	0.41
0.30	0.49
0.33	0.53
0.37	0.53 <<
0.40	0.51
0.43	0.48
0.47	0.45
0.50	0.43
0.53	0.39
0.57	0.35
0.60	0.31
0.63	0.28

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve | Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 5

Total to Str. 620

Hydrograph type	= Combine	Peak discharge	= 1.64 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 3, 4		

Hydrograph Volume = 3,292 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time (hrs)	Hyd. 3 + (cfs)	Hyd. 4 = (cfs)	Outflow (cfs)
0.23	0.71	0.31	1.02
0.27	0.92	0.41	1.32
0.30	1.05	0.49	1.54
0.33	1.11 <<	0.53	1.64 <<
0.37	1.10	0.53 <<	1.63
0.40	1.05	0.51	1.56
0.43	0.99	0.48	1.47
0.47	0.93	0.45	1.38
0.50	0.87	0.43	1.30
0.53	0.80	0.39	1.19
0.57	0.72	0.35	1.07
0.60	0.63	0.31	0.94
0.63	0.56	0.28	0.84

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 6

Stm Str. 619

Hydrograph type	= SCS Runoff	Peak discharge	= 0.60 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.67 ac	Curve number	= 79
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 7.0 min
Total precip.	= 1.96 in	Distribution	= Huff-1st
Storm duration	= 1 hrs	Shape factor	= 484

Hydrograph Volume = 1,203 cuft

(Printed values >= 50% of Qp.)

Hydrograph Discharge Table

Time -- (hrs	Outflow cfs)
0.23	0.35
0.27	0.47
0.30	0.55
0.33	0.60
0.37	0.60 <<
0.40	0.57
0.43	0.54
0.47	0.51
0.50	0.48
0.53	0.44
0.57	0.40
0.60	0.35
0.63	0.31

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve | Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 7

Total to Str. 619

Hydrograph type	= Combine	Peak discharge	= 1.92 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 5, 6		

Hydrograph Volume = 6,932 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time (min)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
10	0.04	0.01	0.05
12	0.16	0.05	0.21
14	0.36	0.11	0.47
16	0.58	0.20	0.78
18	0.77	0.27	1.04
20	0.95	0.33	1.28
22	1.09	0.39	1.48
24	1.20	0.43	1.63
26	1.27	0.46	1.74
28	1.34	0.49	1.83
30	1.39	0.51	1.90
32	1.40 <<	0.52 <<	1.92 <<
34	1.39	0.51	1.90
36	1.33	0.49	1.83
38	1.28	0.48	1.76
40	1.23	0.46	1.68
42	1.17	0.44	1.60
44	1.12	0.42	1.53
46	1.07	0.40	1.47
48	1.01	0.38	1.39
50	0.97	0.36	1.34
52	0.95	0.36	1.31
54	0.95	0.35	1.30
56	0.93	0.35	1.27
58	0.90	0.34	1.23
60	0.85	0.32	1.16
62	0.78	0.29	1.08
64	0.71	0.27	0.98
66	0.63	0.24	0.87
68	0.57	0.22	0.79
70	0.54	0.20	0.74
72	0.52	0.20	0.71
74	0.51	0.19	0.70
76	0.51	0.19	0.70
78	0.51	0.19	0.71
80	0.52	0.19	0.71
82	0.52	0.20	0.71
84	0.52	0.20	0.72

Continues on next page...

Total to Str. 619

Hydrograph Discharge Table

Time (min)	Hyd. 5 + (cfs)	Hyd. 6 = (cfs)	Outflow (cfs)
86	0.52	0.20	0.72
88	0.53	0.20	0.73
90	0.53	0.20	0.73
92	0.53	0.20	0.73
94	0.53	0.20	0.73
96	0.54	0.20	0.74
98	0.54	0.20	0.74
100	0.54	0.20	0.74
102	0.54	0.20	0.75
104	0.52	0.20	0.72
106	0.48	0.18	0.66
108	0.41	0.16	0.57
110	0.36	0.13	0.49
112	0.32	0.12	0.44
114	0.29	0.11	0.40
116	0.30	0.11	0.41
118	0.35	0.13	0.48
120	0.42	0.16	0.58
122	0.43	0.16	0.59
124	0.38	0.14	0.52
126	0.27	0.10	0.37
128	0.17	0.06	0.23
130	0.08	0.03	0.12
132	0.03	0.01	0.04

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 8

Stm Str. 618

Hydrograph type	= SCS Runoff	Peak discharge	= 0.99 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 1.47 ac	Curve number	= 77
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 13.0 min
Total precip.	= 2.40 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

Hydrograph Volume = 3,727 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (min	cfs)	Time -- Outflow (min	cfs)
12	0.02	80	0.40
14	0.07	82	0.40
16	0.14	84	0.41
18	0.26	86	0.41
20	0.37	88	0.41
22	0.49	90	0.41
24	0.61	92	0.42
26	0.72	94	0.42
28	0.82	96	0.42
30	0.90	98	0.42
32	0.95	100	0.43
34	0.98	102	0.43
36	0.99 <<	104	0.42
38	0.97	106	0.40
40	0.95	108	0.37
42	0.93	110	0.34
44	0.89	112	0.30
46	0.86	114	0.28
48	0.82	116	0.26
50	0.79	118	0.27
52	0.76	120	0.29
54	0.75	122	0.30
56	0.73	124	0.30
58	0.71	126	0.27
60	0.69	128	0.21
62	0.65	130	0.16
64	0.61	132	0.11
66	0.57	134	0.07
68	0.52	136	0.03
70	0.48	138	0.01
72	0.45		
74	0.42		
76	0.41	*...End*	
78	0.41		

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 9

Total to Str. 617.2

Hydrograph type	= Combine	Peak discharge	= 2.87 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Inflow hyds.	= 7, 8		

Hydrograph Volume = 10,659 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time (min)	Hyd. 7 + (cfs)	Hyd. 8 = (cfs)	Outflow (cfs)
10	0.05	0.00	0.05
12	0.21	0.02	0.23
14	0.47	0.07	0.54
16	0.78	0.14	0.92
18	1.04	0.26	1.30
20	1.28	0.37	1.65
22	1.48	0.49	1.98
24	1.63	0.61	2.25
26	1.74	0.72	2.46
28	1.83	0.82	2.65
30	1.90	0.90	2.80
32	1.92 <<	0.95	2.86
34	1.90	0.98	2.87 <<
36	1.83	0.99 <<	2.81
38	1.76	0.97	2.73
40	1.68	0.95	2.64
42	1.60	0.93	2.53
44	1.53	0.89	2.43
46	1.47	0.86	2.33
48	1.39	0.82	2.21
50	1.34	0.79	2.13
52	1.31	0.76	2.08
54	1.30	0.75	2.05
56	1.27	0.73	2.01
58	1.23	0.71	1.95
60	1.16	0.69	1.85
62	1.08	0.65	1.73
64	0.98	0.61	1.59
66	0.87	0.57	1.44
68	0.79	0.52	1.31
70	0.74	0.48	1.22
72	0.71	0.45	1.16
74	0.70	0.42	1.13
76	0.70	0.41	1.12
78	0.71	0.41	1.11
80	0.71	0.40	1.11
82	0.71	0.40	1.12
84	0.72	0.41	1.13

Continues on next page...

Total to Str. 617.2

Hydrograph Discharge Table

Time (min)	Hyd. 7 + (cfs)	Hyd. 8 = (cfs)	Outflow (cfs)
86	0.72	0.41	1.13
88	0.73	0.41	1.14
90	0.73	0.41	1.14
92	0.73	0.42	1.15
94	0.73	0.42	1.15
96	0.74	0.42	1.16
98	0.74	0.42	1.16
100	0.74	0.43	1.17
102	0.75	0.43	1.17
104	0.72	0.42	1.14
106	0.66	0.40	1.06
108	0.57	0.37	0.94
110	0.49	0.34	0.83
112	0.44	0.30	0.74
114	0.40	0.28	0.67
116	0.41	0.26	0.68
118	0.48	0.27	0.75
120	0.58	0.29	0.86
122	0.59	0.30	0.89
124	0.52	0.30	0.82
126	0.37	0.27	0.63
128	0.23	0.21	0.44
130	0.12	0.16	0.27
132	0.04	0.11	0.15
134	0.00	0.07	0.07
136	0.00	0.03	0.03

...End

Hydrograph Report

Hydraflow Hydrographs by Intelisolve

Thursday, Nov 12 2015, 11:41 AM

Hyd. No. 10

Stm Str. 616

Hydrograph type	= SCS Runoff	Peak discharge	= 0.55 cfs
Storm frequency	= 10 yrs	Time interval	= 2 min
Drainage area	= 0.77 ac	Curve number	= 78
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 9.0 min
Total precip.	= 2.40 in	Distribution	= Huff-1st
Storm duration	= 2 hrs	Shape factor	= 484

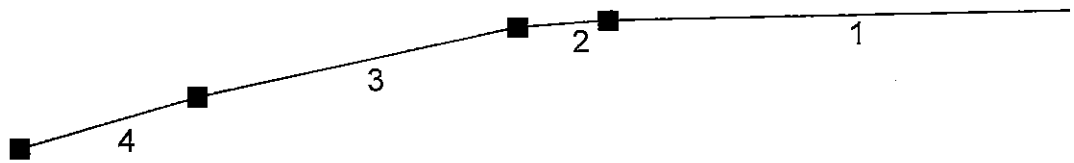
Hydrograph Volume = 2,021 cuft

(Printed values >= 1% of Qp.)

Hydrograph Discharge Table

Time -- Outflow (min cfs)		Time -- Outflow (min cfs)	
12	0.04	80	0.21
14	0.09	82	0.22
16	0.18	84	0.22
18	0.25	86	0.22
20	0.33	88	0.22
22	0.40	90	0.22
24	0.45	92	0.22
26	0.49	94	0.22
28	0.52	96	0.22
30	0.54	98	0.22
32	0.55 <<	100	0.23
34	0.55	102	0.23
36	0.53	104	0.22
38	0.51	106	0.20
40	0.50	108	0.17
42	0.47	110	0.15
44	0.45	112	0.13
46	0.44	114	0.12
48	0.41	116	0.13
50	0.40	118	0.15
52	0.39	120	0.18
54	0.39	122	0.18
56	0.38	124	0.16
58	0.37	126	0.11
60	0.35	128	0.07
62	0.32	130	0.04
64	0.30	132	0.01
66	0.26		
68	0.24		
70	0.22	*...End*	
72	0.22		
74	0.21		
76	0.21		
78	0.21		

Hydraflow Plan View



Project file: stm 600-604.stm	IDF file: MARION.IDF	No. Lines: 4	11-12-2015

Hydraflow Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	601	2.61	15 c	142.0	747.95	748.27	0.225	748.60	749.29	0.00	End
2	602	2.61	15 c	28.0	748.27	748.33	0.214	749.29	749.34	0.00	1
3	603	2.61	15 c	101.0	748.33	748.56	0.228	749.34	749.51	0.00	2
4	604	2.61	12 c	57.0	748.56	749.00	0.772	749.51	749.73	0.00	3

Project File: stm 600-604.stm	IDF File: MARION.IDF	Total No. Lines: 4	Run Date: 11-12-2015

NOTES: c = circular; e = elliptical; b = box; Return period = 10 Yrs.; * Indicates surcharge condition.

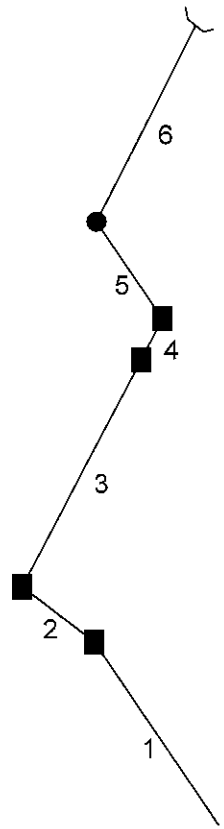
Hydraflow Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	
1	End	142.0	0.00	0.00	0.00	0.00	0.00	0.0	1.3	0.0	2.61	3.07	3.25	15	0.23	748.27	747.95	749.29	748.60	754.41	0.00	601
2	1	28.0	0.00	0.00	0.00	0.00	0.00	0.0	1.1	0.0	2.61	2.99	2.45	15	0.21	748.33	748.27	749.34	749.29	754.41	754.41	602
3	2	101.0	0.00	0.00	0.00	0.00	0.00	0.0	0.3	0.0	2.61	3.08	2.54	15	0.23	748.56	748.33	749.51	749.34	751.00	754.41	603
4	3	57.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.61	3.13	3.81	12	0.77	749.00	748.56	749.73	749.51	750.70	751.00	604

Project File: stm 600-604.stm | IDF File: MARION.IDF | Total number of lines: 4 | Run Date: 11-12-2015

NOTES: Intensity = 57.92 / (Inlet time + 9.10) ^ 0.80; Return period = 10 Yrs. ; Initial tailwater elevation = 748.60 (ft)

Hydraflow Plan View



Project file: stm 605-611.stm	IDF file: MARION.IDF	No. Lines: 6	11-12-2015

Hydraflow Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	606	1.55	12 c	136.0	750.95	751.38	0.316	751.48	752.17	0.00	End
2	607	1.43	12 c	60.0	751.38	751.56	0.300	752.17	752.27	0.00	1
3	608	1.00	12 c	154.0	751.56	752.03	0.305	752.27	752.53	0.00	2
4	609	0.70	12 c	28.0	752.03	752.11	0.286	752.53	752.57	0.00	3
5	610	0.39	12 c	72.0	752.11	752.33	0.306	752.57	752.65	0.00	4
6	611	0.39	12 c	132.0	752.33	752.75	0.318	752.65	753.04	0.00	5

Project File: stm 605-611.stm	IDF File: MARION.IDF	Total No. Lines: 6	Run Date: 11-12-2015

NOTES: c = circular; e = elliptical; b = box; Return period = 10 Yrs.; * Indicates surcharge condition.

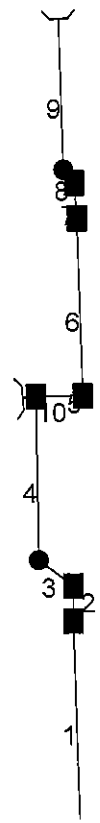
Hydraflow Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	136.0	0.00	0.00	0.00	0.00	0.00	0.0	9.9	0.0	1.55	2.00	3.01	12	0.32	751.38	750.95	752.17	751.48	753.60	0.00	606
2	1	60.0	0.00	0.00	0.00	0.00	0.00	0.0	9.4	0.0	1.43	1.95	2.27	12	0.30	751.56	751.38	752.27	752.17	753.60	753.60	607
3	2	154.0	0.00	0.00	0.00	0.00	0.00	0.0	7.4	0.0	1.00	1.97	2.10	12	0.31	752.03	751.56	752.53	752.27	756.20	753.60	608
4	3	28.0	0.00	0.00	0.00	0.00	0.00	0.0	6.8	0.0	0.70	1.90	1.87	12	0.29	752.11	752.03	752.57	752.53	756.20	756.20	609
5	4	72.0	0.00	0.00	0.00	0.00	0.00	0.0	4.4	0.0	0.39	1.97	1.45	12	0.31	752.33	752.11	752.65	752.57	757.40	756.20	610
6	5	132.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.39	2.01	1.95	12	0.32	752.75	752.33	753.04	752.65	754.40	757.40	611

Project File: stm 605-611.stm | IDF File: MARION.IDF | Total number of lines: 6 | Run Date: 11-12-2015

NOTES: Intensity = 57.92 / (Inlet time + 9.10) ^ 0.80; Return period = 10 Yrs. ; Initial tailwater elevation = 751.48 (ft)

Hydraflow Plan View



Project file: stm 614-623.stm	IDF file: MARION.IDF	No. Lines: 10	11-12-2015

Hydraflow Summary Report

Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	615	4.23	18 c	157.0	752.00	752.28	0.178	752.79	753.55	0.00	End
2	616	3.84	18 c	28.0	752.28	752.33	0.179	753.55	753.58	0.00	1
3	617.1	3.21	18 c	40.0	752.33	752.42	0.225	753.58	753.62	0.00	2
4	617.2	3.21	18 c	130.0	752.42	752.71	0.223	753.62	753.75	0.00	3
5	619	2.24	15 c	47.0	752.96	753.10	0.298	753.75	753.85	0.00	4
6	620	1.64	12 c	141.0	753.35	753.78	0.305	753.89	754.63	0.00	5
7	621	1.11	12 c	28.0	753.78	753.87	0.321	754.63	754.65	0.00	6
8	622	0.61	12 c	15.0	753.87	753.91	0.267	754.65	754.65	0.00	7
9	623	0.61	12 c	120.0	753.91	754.30	0.325	754.65	754.74	0.00	8
10	618	1.07	12 c	13.0	753.21	753.25	0.304	753.75	753.78	0.00	4

Project File: stm 614-623.stm	IDF File: MARION.IDF	Total No. Lines: 10	Run Date: 11-12-2015

NOTES: c = circular; e = elliptical; b = box; Return period = 10 Yrs.; * Indicates surcharge condition.

Hydraflow Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total		Incr	Total	Inlet	Syst					Size	Slope	Up	Dn	Up	Dn	Up	Dn	
		(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	157.0	0.00	0.00	0.00	0.00	0.00	0.0	6.6	0.0	4.23	4.43	3.58	18	0.18	752.28	752.00	753.55	752.79	755.77	0.00	615
2	1	28.0	0.00	0.00	0.00	0.00	0.00	0.0	6.3	0.0	3.84	4.44	2.42	18	0.18	752.33	752.28	753.58	753.55	755.77	755.77	616
3	2	40.0	0.00	0.00	0.00	0.00	0.00	0.0	6.0	0.0	3.21	4.98	2.08	18	0.22	752.42	752.33	753.62	753.58	756.50	755.77	617.1
4	3	130.0	0.00	0.00	0.00	0.00	0.00	0.0	4.8	0.0	3.21	4.96	2.29	18	0.22	752.71	752.42	753.75	753.62	755.50	756.50	617.2
5	4	47.0	0.00	0.00	0.00	0.00	0.00	0.0	4.4	0.0	2.24	3.52	2.84	15	0.30	753.10	752.96	753.85	753.75	755.50	755.50	619
6	5	141.0	0.00	0.00	0.00	0.00	0.00	0.0	3.2	0.0	1.64	1.97	3.04	12	0.31	753.78	753.35	754.63	753.89	757.98	755.50	620
7	6	28.0	0.00	0.00	0.00	0.00	0.00	0.0	2.9	0.0	1.11	2.02	1.63	12	0.32	753.87	753.78	754.65	754.63	757.98	757.98	621
8	7	15.0	0.00	0.00	0.00	0.00	0.00	0.0	2.6	0.0	0.61	1.84	0.95	12	0.27	753.91	753.87	754.65	754.65	758.30	757.98	622
9	8	120.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.61	2.03	1.40	12	0.33	754.30	753.91	754.74	754.65	756.00	758.30	623
10	4	13.0	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	1.07	1.96	2.50	12	0.30	753.25	753.21	753.78	753.75	755.50	755.50	618

Project File: stm 614-623.stm | IDF File: MARION.IDF | Total number of lines: 10 | Run Date: 11-12-2015

NOTES: Intensity = 57.92 / (Inlet time + 9.10) ^ 0.80; Return period = 10 Yrs. ; Initial tailwater elevation = 752.79 (ft)

Deer Meadows
INLET DEPTH CALCULATION

INLET #601 - Neenah R-3501-P Casting (50% Clogged)

Discharge Rate (Qi) =	0.46 c.f.s.
Perimeter of Grate Opening (P) =	2.15 ft.
Area of Grate Opening (Ai) =	0.75 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.17 ft.
Orifice flow depth =	0.02 ft.
Allowable Depth =	0.50 ft.

INLET #602 - Neenah R-3501-P Casting (50% Clogged)

Discharge Rate (Qi) =	0.27 c.f.s.
Perimeter of Grate Opening (P) =	2.15 ft.
Area of Grate Opening (Ai) =	0.75 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.12 ft.
Orifice flow depth =	0.01 ft.
Allowable Depth =	0.50 ft.

INLET #603 - Neenah R-4215-C Casting (50% Clogged)

Discharge Rate (Qi) =	2.61 c.f.s.
Perimeter of Grate Opening (P) =	5.65 ft.
Area of Grate Opening (Ai) =	1.65 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.29 ft.
Orifice flow depth =	0.10 ft.
Allowable Depth =	0.50 ft.

Deer Meadows
INLET DEPTH CALCULATION

INLET #606 - Neenah R-4215-C Casting (50% Clogged)

Discharge Rate (Qi) =	0.12 c.f.s.
Perimeter of Grate Opening (P) =	5.65 ft.
Area of Grate Opening (Ai) =	1.65 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.04 ft.
Orifice flow depth =	0.00 ft.
Allowable Depth =	0.50 ft.

INLET #607 - Neenah R-4215-C Casting (50% Clogged)

Discharge Rate (Qi) =	0.44 c.f.s.
Perimeter of Grate Opening (P) =	5.65 ft.
Area of Grate Opening (Ai) =	1.65 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.09 ft.
Orifice flow depth =	0.00 ft.
Allowable Depth =	0.50 ft.

INLET #608 - Neenah R-3501-P Casting (50% Clogged)

Discharge Rate (Qi) =	0.31 c.f.s.
Perimeter of Grate Opening (P) =	2.15 ft.
Area of Grate Opening (Ai) =	0.75 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.13 ft.
Orifice flow depth =	0.01 ft.
Allowable Depth =	0.50 ft.

Deer Meadows
INLET DEPTH CALCULATION

INLET #609 - Neenah R-3501-P Casting (50% Clogged)

Discharge Rate (Qi) =	0.36 c.f.s.
Perimeter of Grate Opening (P) =	2.15 ft.
Area of Grate Opening (Ai) =	0.75 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.14 ft.
Orifice flow depth =	0.01 ft.
Allowable Depth =	0.50 ft.

Deer Meadows
INLET DEPTH CALCULATION

INLET #615 - Neenah R-3501-P Casting (50% Clogged)

Discharge Rate (Qi) =	0.39 c.f.s.
Perimeter of Grate Opening (P) =	2.30 ft.
Area of Grate Opening (Ai) =	0.70 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.15 ft.
Orifice flow depth =	0.01 ft.
Allowable Depth =	0.50 ft.

INLET #616 - Neenah R-3501-P Casting (50% Clogged)

Discharge Rate (Qi) =	0.63 c.f.s.
Perimeter of Grate Opening (P) =	2.30 ft.
Area of Grate Opening (Ai) =	0.70 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.20 ft.
Orifice flow depth =	0.03 ft.
Allowable Depth =	0.50 ft.

INLET #619 - Neenah R-4215-C Casting (50% Clogged)

Discharge Rate (Qi) =	0.60 c.f.s.
Perimeter of Grate Opening (P) =	5.65 ft.
Area of Grate Opening (Ai) =	1.65 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.11 ft.
Orifice flow depth =	0.01 ft.
Allowable Depth =	0.50 ft.

Deer Meadows
INLET DEPTH CALCULATION

INLET #620 - Neenah R-3501-P Casting (50% Clogged)

Discharge Rate (Qi) =	0.53 c.f.s.
Perimeter of Grate Opening (P) =	2.15 ft.
Area of Grate Opening (Ai) =	0.75 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.19 ft.
Orifice flow depth =	0.02 ft.
Allowable Depth =	0.50 ft.

INLET #621 - Neenah R-3501-P Casting (50% Clogged)

Discharge Rate (Qi) =	0.51 c.f.s.
Perimeter of Grate Opening (P) =	2.15 ft.
Area of Grate Opening (Ai) =	0.75 sq. ft.

Grate acting as weir (depths less than 0.3 ft.):
Qi = 3.0P[(d)^1.5]
Grate acting as orifice (depths greater than 0.4 ft.):
Qi = 4.89(Ai)[(d)^0.5]

Weir flow depth =	0.18 ft.
Orifice flow depth =	0.02 ft.
Allowable Depth =	0.50 ft.

Deer Meadows
GUTTER SPREAD CALCULATIONS

INLET # 602		Total Inflow =	0.27	cfs
	80	% North =	0.22	cfs
	20	% South =	0.05	cfs
INLET # 603		Total Inflow =	0.19	cfs
	80	% North =	0.15	cfs
	20	% South =	0.04	cfs

Area 602 North

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.22 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 1.32

Area 602 South

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.05 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 0.78

Area 603 North

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.15 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 1.15

Area 603 South

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.04 = (0.56 / 0.012) x (0.03)T^(1.67) 0.99 (0.5)T^(2.67))

T = 0.63

Total Spread from North = 2.47 '

Total Spread from South = 1.41 '

Total Spread = 3.88 '

Allowable Spread = 28 - 3 - 12 = 13'

Deer Meadows
GUTTER SPREAD CALCULATIONS

INLET # 608		Total Inflow =	0.31	cfs
	5	% East =	0.02	cfs
	95	% West =	0.29	cfs
INLET # 609		Total Inflow =	0.36	cfs
	5	% East =	0.02	cfs
	95	% West =	0.34	cfs

Area 608 East

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.02 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 0.49

Area 608 West

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.29 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 1.48

Area 609 East

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.02 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 0.52

Area 609 West

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.34 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 1.56

Total Spread from East = 1.01 '

Total Spread from West = 3.04 '

Total Spread = 4.05 '

Allowable Spread = 28 - 3 - 12 = 13'

Deer Meadows
GUTTER SPREAD CALCULATIONS

INLET # 615		Total Inflow =	0.39	cfs
	15	% East =	0.06	cfs
	85	% West =	0.33	cfs
INLET # 616		Total Inflow =	0.63	cfs
	15	% East =	0.09	cfs
	85	% West =	0.54	cfs

INLET # 620		Total Inflow =	0.53	cfs
	50	% East =	0.27	cfs
	50	% West =	0.27	cfs
INLET # 621		Total Inflow =	0.51	cfs
	50	% East =	0.26	cfs
	50	% West =	0.26	cfs

Area 615 East

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.06 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 0.81

Area 615 West

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.33 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 1.55

Area 616 East

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.09 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 0.97

Area 616 West

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.54 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 1.85

Total Spread from East = 1.77 '

Total Spread from West = 3.40 '

Total Spread = 5.17 '

Allowable Spread = 28 - 3 - 12 = 13'

Area 620 East

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.27 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 1.42

Area 620 West

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.27 = (0.56 / 0.012) x (0.03)T^(1.67) 0.75 (0.5)T^(2.67))

T = 1.36

Area 621 East

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.26 = (0.56 / 0.012) x (0.03)T^(1.67) 0.60 (0.5)T^(2.67))

T = 1.40

Area 621 West

Q = (0.56/n) Sx^1.67 S^(0.5) T^ (2.67)

0.26 = (0.56 / 0.012) x (0.03)T^(1.67) 0.75 (0.5)T^(2.67))

T = 1.34

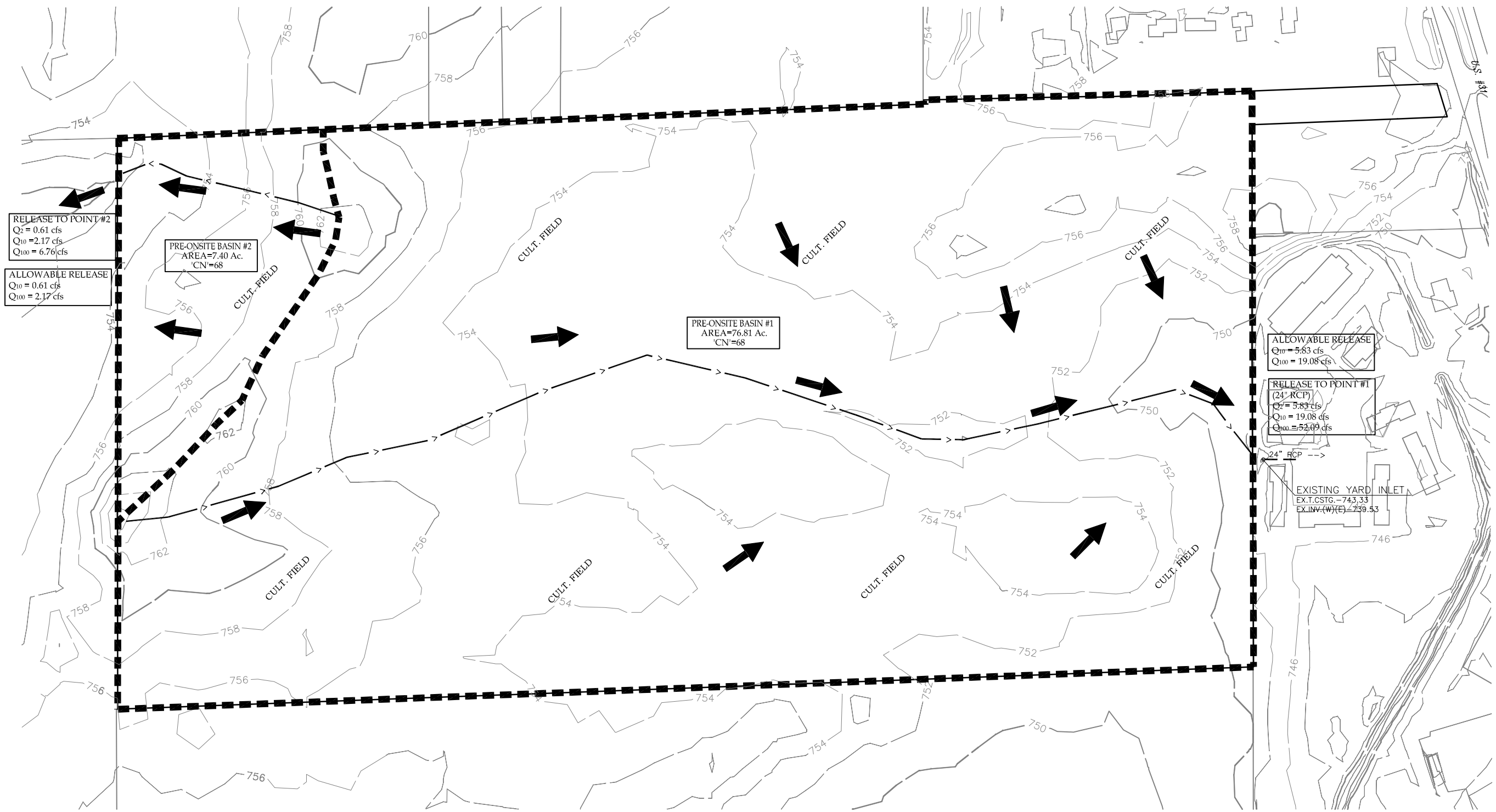
Total Spread from East = 2.82 '

Total Spread from West = 2.71 '

Total Spread = 5.53 '

Allowable Spread = 28 - 3 - 12 = 13'

Watershed Basin Maps



DATE	REVISION	SYMBOL

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

PROJECT
DEER MEADOWS
CITY OF FRANKLIN, JOHNSON COUNTY, INDIANA

TITLE
PRE-DEVELOPED DRAINAGE BASINS

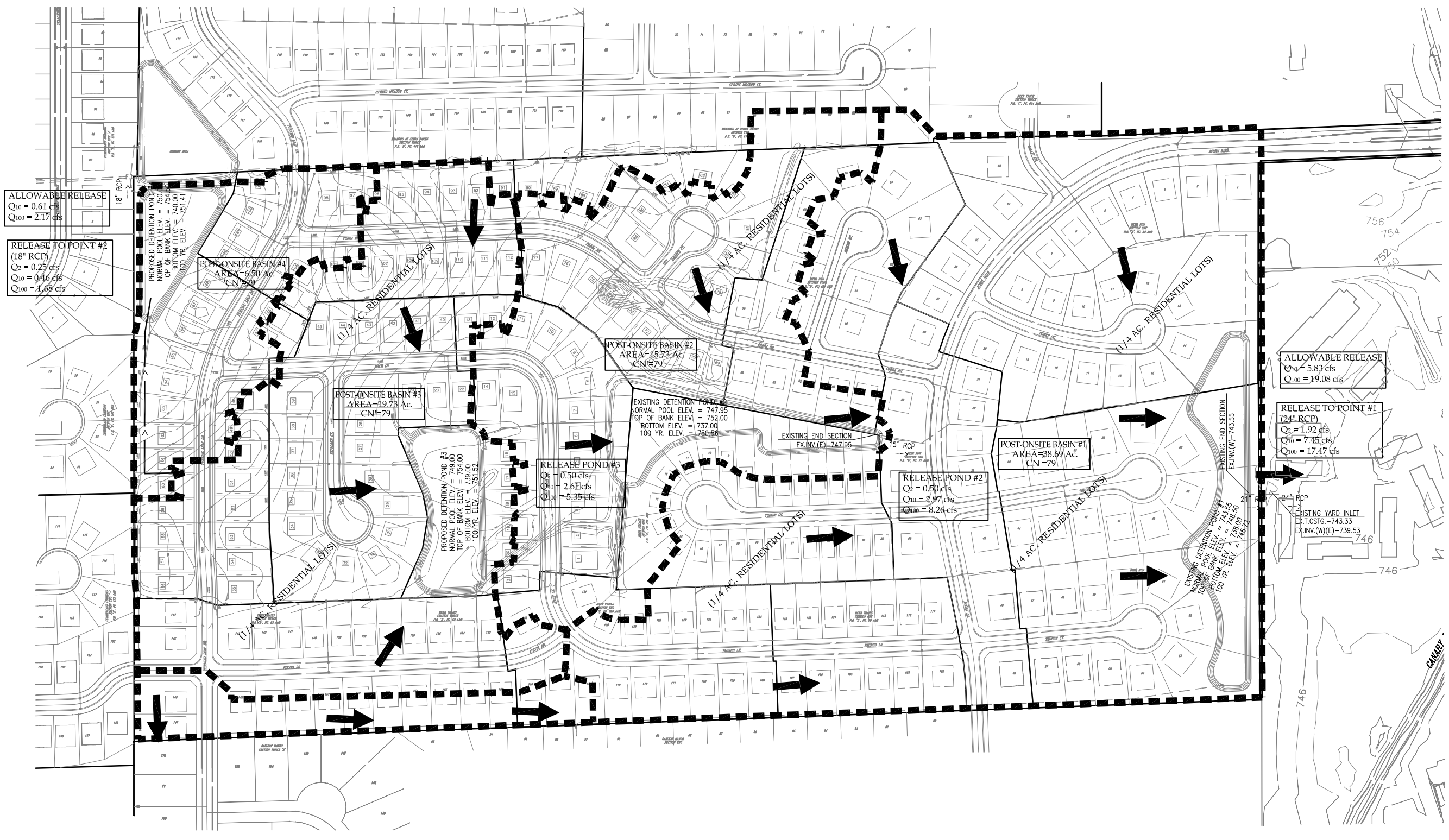
PROJECTS plus
GREENWOOD SURVEYING COMPANY
CIVIL ENGINEERING – LAND SURVEYING
LAND PLANNING – CONSTRUCTION MANAGEMENT
2555 Fairview Place Suite A – Greenwood, Indiana 46142
(317)-882-5003

SEAL

JOB NUMBER
15015

SHEET
1
OF 1 SHEETS

DATE
AUGUST 12, 2015



DATE	REVISION	SYMBOL

SCALE 1"=250'
DRAWN JPH
CHECKED JKS
CERTIFIED JKS

PROJECT
DEER MEADOWS
CITY OF FRANKLIN, JOHNSON COUNTY, INDIANA

TITLE
POST-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

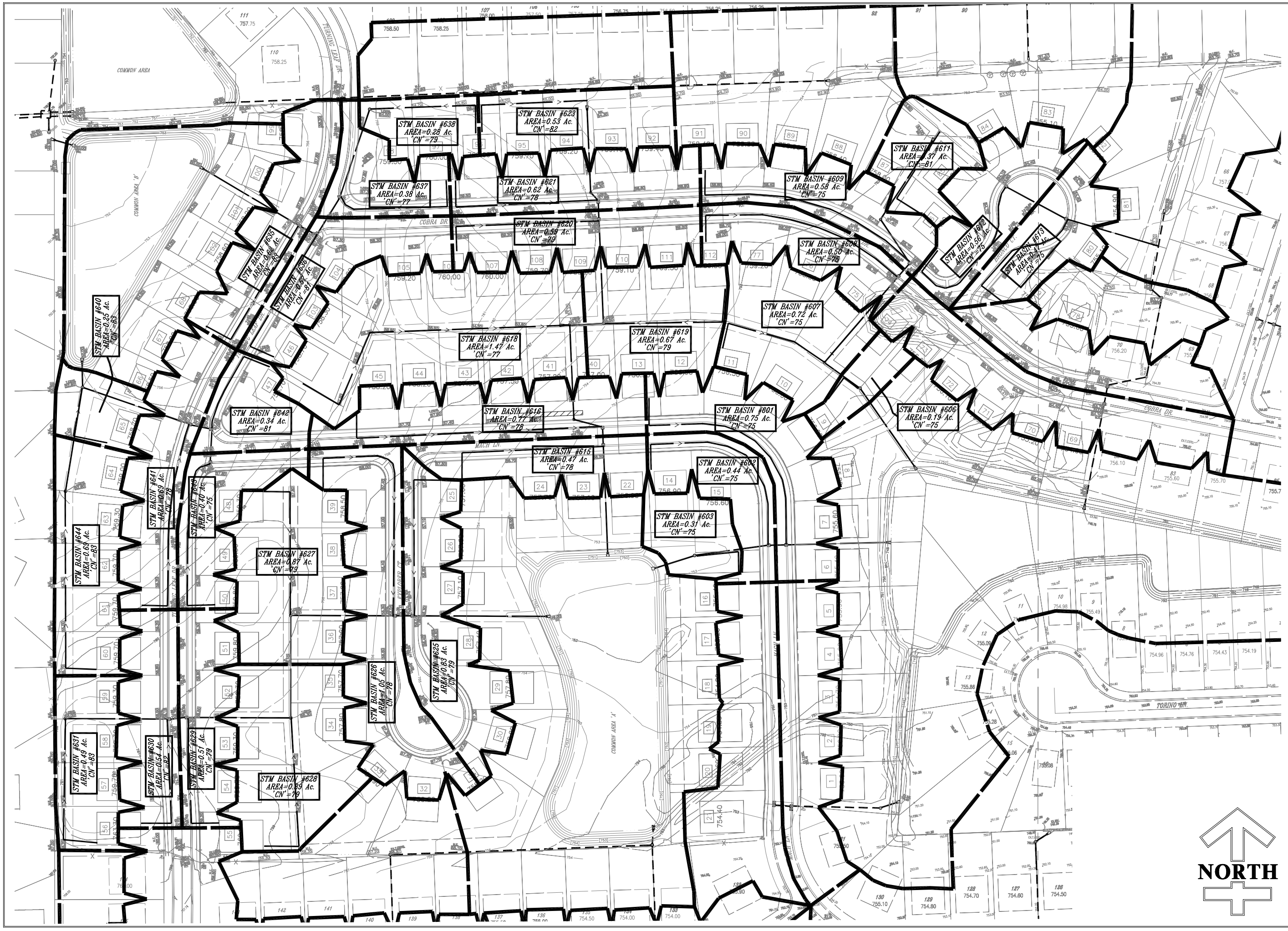
SEAL

JOB NUMBER
15015

SHEET
1

OF **1** SHEETS

DATE
NOVEMBER 12, 2015



DATE	REVISION	SYMBOL

SCALE 1"=120'
DRAWN JPH
CHECKED JKS
CERTIFIED JKS

PROJECT
DEER MEADOWS
CITY OF FRANKLIN, JOHNSON COUNTY, INDIANA

TITLE
STORM SEWER 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
15015.01

SHEET
1
OF 1 SHEETS

DATE
NOVEMBER 12, 2015