crossroads ventures llc

DRAFT
Environmental Impact Statement

Appendix 9 A

Operational Phase Stormwater Quantity Management Plan

The Belleayre Resort at Catskill Park

STORMWATER MANAGEMENT REPORT
BELLEAYRE RESORT AT CATSKILL PARK

This report addresses stormwater runoff associated with the proposed development.

Stormwater calculations were conducted using the method prescribed in the USDA Soil Conservation Service Technical Release No. 20. The program used is the HydroCAD Stormwater Modeling System (Revised June 6, 1998) produced by Applied Micro-computer Systems of Chocurua, New Hampshire.

The Design Storms studied were the: 90% rainfall event to determine the Water Quality Volume (WQ_V), the 1-year design storm to analyze Stream Protection (CP_v), the 10-year storm to study Overbank Flood Control, the 25-year storm to comply with local requirements, and the 100-year storm to determine extreme flood control. The design storms studied are 24-hour Type II storm events having rainfall totals of 3.5 (1 yr), 6.0 (10 yr), 6.3 (25 yr) and 8.0 (100 yr) inches.

Design Concept

The concept for stormwater management is to control the increased volume and rate of surface runoff caused by the development of buildings, roads, parking areas, recreational facilities and the golf courses. The increased volumes and rates will be reduced to existing or predevelopment levels by using measures to slow surface runoff from developed areas.

The proposed stormwater facilities are designed to control a twenty-five (25) year storm event while withstanding the discharge from a one hundred (100) year event. Also, treatment facilities such as detention basins have been designed to treat and control the water quality volume. Pollutant loading is discussed in the following Appendix 10A; "Operational Phase Stormwater Quality Management Plan."

The objectives of the stormwater management plan are:

- Prevent increased runoff from developed land to reduce potential flooding and flood damage.
- Minimize the erosion potential from new construction.
- Increase water recharge.
- Enhance the quality of stormwater runoff to prevent water quality degradation in receiving water bodies.

Project Location

The proposed Belleayre Resort at Catskill Park is located in the Central Catskill region of New York State near the intersection of the boundaries of Delaware, Ulster and Greene Counties. The site lies approximately 35 miles west of Kingston and lies south of NY Route 28 and just to the east and west of Belleayre Mountain Ski Center. The site totals approximately 1,960 acres, 1,242 acres lie east of the Ski Center and 718 acres lie west of the Ski Center.

The 718 acres west of the Ski Center are located on either side of Ulster County Route 49A, south of the Town of Shandaken and Middletown. These lands are on either side of Gunnison/West Road and also include; the former Highmount Ski Area, lands west of Highmount on Gall/Curci Road, lands between Gall/Curci Road and Todd Mountain Road, and some lands to the west of Todd Mountain Road.

The 1,242 acres east of Belleayre Mountain Ski Center consist of lands that extend west from Lasher Road and Lost Clove, across a portion of Giggle Hollow, and to the upper portion of Woodchuck Hollow Road. These lands are in the Town of Shandaken.

Project Description

Crossroads Ventures, LLC is proposing to develop a recreation-oriented resort development that will utilize approximately 573 of the 1,960 acre project site. Approximately 1,387 acres will remain undeveloped. Two sub-areas comprising the Big Indian Plateau portion of the project are proposed to be developed east of the Ski Center.

Belleayre Highlands is proposed west of Giggle Hollow and near an existing mansion, sometimes referred to as the Brisbane (Turner) Mansion. Here a total of 88 detached lodging units grouped into twenty-two, four unit structures are proposed. The existing mansion will be utilized as an activities center along with proposed tennis courts and a swimming pool.

East of Giggle Hollow will include the Big Indian Resort and Spa along with the Big Indian Country Club. In addition to an 18-hole championship golf course, development will include; a 150 room hotel building, a golf clubhouse, and detached lodging units (35 single and 20, 3-unit buildings) which will be constructed around the golf course.

The lands to the west of Belleayre Mountain Ski Center will be developed in a manner similar to those east of the Center. Development at the proposed Wildacres Resort and Highmount Golf Club will include a second 18-hole golf course along with a 250 room hotel, retail space, restaurants and 168 detached lodging units in 21 buildings. A twenty-one lot residential subdivision known as Highmount Estates is also proposed and will be located on the former Leach property, west of the former Highmount Ski Area which will be renovated into the Wilderness Activity Center.

For purposes of the stormwater study, the proposed development has been separated into three development areas. The three areas are called; Highmount Estates, Wildacres Resort with the Highmount Golf Club, and Belleayre Highlands and the Big Indian Plateau. These areas are indicated on Figure 1.

Existing Conditions

The topography within the project boundaries range from an elevation of 3,100 feet above mean sea level (AMSL) to an elevational low of 1,260 feet AMSL. The western portion of the project site consists of areas of varying topography. Land to the west and north of County Route 49A, and on either side of Gunnison Road are generally flatter and it is here that the Wildacres Resort is proposed. Lands to the west of the former Highmount Ski Area which include the proposed Highmount Estates include north and east facing slopes which range in elevation from 3,400 feet down to 2,260 feet AMSL.

The eastern portion of the project site consists of the plateaus of the Global Bell Ayr to Belleayre Mountain ridgeline as well as some of the steep south slopes and a portion of the northern slopes above Lost Clove. Within this portion of the eastern ridge of the mountain there are large areas of relatively flatter plateau. Downslope of the plateau in many areas there are a series of relatively flat benches connected by areas of steeper slope. Giggle Hollow divides the eastern portion of the project site running in a north/south direction.

The soils on and around the project site consist mostly of areas of shallow and moderately deep, very stony soils formed in glacial till and derived from red shale and sandstone. A detailed mapping of the soils on the project site was prepared by an LA Group Certified Soil Scientist. The mapped soils include; Elka silt loam, Halcott, Lewbeach channery silt loam, Onteora, Willowemoc, Tunkhannock very channery loam, Vly-Elka complex, Vly Halcott complex and Vly channery silt loam. The Hydrologic Soil Groups for these soils include A, C and D soils with a large portion of the developed area falling into Hydrologic Soil Group C. Therefore, the C soil classification was used in the computations.

Test pits were conducted by a soil scientist on two separate occasions. A set of test holes and perc tests were performed in November of 2000, prior to the creation of the proposed master plan. A second set of tests were performed on September 3, 4 and 5, 2002. Soil test results may be found in Appendix 12. These test pits were located at specific stormwater management area locations. In cases where tests could not be performed because of inaccessibility, soils and percolation information was utilized from neighboring test sites where topography and soil types were similar. Where no specific test hole data was available, no percolation rates were assumed. Where percolation rates exceeded 7 inches per hour, the maximum rate utilized was 7 inches per hour. This occurred in Lewbeach soils most notably in the Wildacres Area. Also, where soils were found to perc only in the upper layers, ponds in these locations were modeled to perc only those upper layers.

Highmount Estates
21 Lots

Wildacres Resort
-18 Hole Golf Course
-250 Room Hotel
-13,000 sf. Retail
-168 Detached Lodging Units

Belleayre Highlands
88 Detached Lodging Units

Big Indian Plateau

Big Indian Country
Club, Resort and Spa
-18 Hole Golf Course
-150 Room Hotel
-Clubhouse & Spa
-95 Detached Lodging Units

Legend

Layout Plan
Vegetation Clear Limit
Site Boundary

0 0.25 0.5 1
Miles

North

the LA group
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BELLEAYRE RESORT AT CATSKILL PARK

DRAFT ENVIRONMENTAL IMPACT STATEMENT

LAYOUT PLAN

Project: 00052
Date: 12/12/02
Figure: 1

The project site is almost completely covered with a forest dominated by sugar maple, beech, hemlock, and yellow birch. Exceptions to this are a few small developed areas where there are maintained lawn and gardens and the former ski slopes of Highmount Ski Area.

STORMWATER MANAGEMENT PLAN

Water Quality Volume

The required water quality volume (WQv) was computed for each proposed subcatchment area. The following equation was utilized to determine water quality volume:

$$WQv = \frac{(P)(Rv)(A)}{12}$$

Where:

WQv	=	Water quality volume (acre/feet)
P	=	90% Rainfall Event (1.3" for this area)
Rv	=	$0.05 + 0.009(I)$ where I is impervious cover (≥ 0.2)
A	=	Subcatchment area in acres

The required water quality volume has been totaled for each area. The overall required volume and the volume provided is indicated in each table.

Highmount Estates

The existing drainage for Highmount Estates is broken down into three (3) subcatchment areas. See Drawing SD-3. Subcatchment One (1) drains from a high point, west of the former Highmount Ski Area to an existing swale which runs along the east side of Route 49A (Design Point 1). Subcatchment two (2) and three (3) also drain from high points within the ski area to an existing swale on the south side of County Route 49A (Design Point 2). The three subcatchments, which total approximately 169 acres, are separated by an existing high point in the road and each drain to localized low points that exist.

The proposed development includes twenty-one single-family lots which front on two proposed cul-de-sacs and County Route 49A. For design purposes, each lot is assumed to have 20,000 square feet of clearing along with a 2,500 square foot building footprint and an asphalt driveway. The proposed drainage scheme is divided into six (6) subcatchment areas (See Drawing SD-4). Drainage Area Number 1 drains to the same point as Predevelopment Area 1 (Design Point 1). Subcatchments 2, 3, 4, 5 and 6 drain to the same point as Predevelopment Drainage Area 2 (Design Point 2). Stormwater runoff from the proposed roads will be directed through three (3) detention areas via roadside swales. The detention areas are sized to moderate the proposed flows, control the water

quality volume and increase recharge. Table 1 summarizes the existing and proposed flows associated with Highmount Estates.

Table 1

		Design Point 1		Design Point 2	
Water Quality Volume (WQ_V)	**1.56 acre/feet Required 2.47 acre/feet Provided**				
		Pre	**Post**	**Pre**	**Post**
1-Year Storm 3.5"	**Volume**	2.33 af	0.75 af	10.96 af	9.82 af
	Peak	17.62 cfs	3.84 cfs	98.50 cfs	69.31 cfs
10-Year Storm 6.0"	**Volume**	6.52 af	4.46 af	30.56 af	30.06 af
	Peak	52.61 cfs	52.21 cfs	292.50 cfs	285.40 cfs
25-Year Storm 6.3"	**Volume**	7.07 af	4.94 af	33.14 af	32.71 af
	Peak	57.21 cfs	51.37 cfs	318.20 cfs	306.90 cfs
100-Year Storm 8.0"	**Volume**	10.30 af	7.78 af	48.24 af	48.20 af
	Peak	84.16 cfs	74.98 cfs	467.40|cfs	455.50 cfs

As indicated in the above table, runoff from Highmount Estates has been reduced to predevelopment levels. Supporting calculations may be found at the end of this report.

Wildacres Resort with the Highmount Golf Club

The existing pre-development drainage for the Wildacres Resort area is broken down into six subcatchment areas (Areas 1-6). See Drawing SD-1. These areas total approximately 354 acres of land. Areas 1, 2, 3, 5 and 6 all drain to an existing low point in the northwest portion of the property (Design Point 1). Drainage Area 4 drains to a low point which lies just south of the existing railroad tracks, above NYS Route 28 (Design Point 2). The upper boundary of subcatchments 1, 2, 4 and 6 is created by County Route 49A. This boundary is crossed by two existing culverts which bring runoff under Route 49A from the south. These two culverts are designated as reaches 200 and 300. For design purposes, the flows through these culverts have been modeled at the maximum flows each will carry for their size and slope.

Drainage Area 6 flows through an existing culvert (Reach 60) under Gunnison Road and on through (Reach 59) to the drainage ditch on the south side of the existing railroad tracks (reaches 56 and 58).

The Wildacres Resort and Highmount Golf Club includes: a 250 room hotel across from the entrance to the Belleayre Mountain Ski Center, a separate 150 seat restaurant in the existing Marlow Mansion, 168 detached lodging units located in 21 octoplex buildings with their own clubhouse, a Children's Center, and an 18 hole golf course with associated practice range and clubhouse which is connected to the hotel.

The proposed drainage is broken down into forty six (46) subcatchment areas as shown on Drawing SD-2. Subcatchment 1-5, 7-12, 17, 18, 55, 66, 77 and 88 includes the proposed hotel, golf clubhouse with associated parking, golf holes 1, 9, 10 and 18 and the proposed access drive. These areas drain through a series of swales, catch basins and

pipes to Ponds 1 and 2. This pond outlets through a series of culverts and swales to Design Point 1. Also flowing to this point are subcatchment 6, 13-16, 20-24, 101, 108-111 and 121. These subcatchments include five, octaplex buildings, the restaurant at the Marlow Mansion, the Children's Center, the practice range and a major portion of the golf course. Runoff through these areas is controlled by a series of swales and detention basins.

Subcatchments 40-42, 102-107 and 112 are directed to Design Point 2. These areas include: twelve (12), octaplex units, tennis courts, a swimming pool, the clubhouse, golf holes and the proposed maintenance area.

Table 2 summarizes the existing and proposed flows associated with the Wildacres Resort area.

Table 2

		Design Point 1		Design Point 2	
Water Quality Volume (WQ_V)	**7.98 acre/feet required 10.99 acre/feet provided**				
		Pre	**Post**	**Pre**	**Post**
1-Year Storm 3.5"	**Volume**	29.83 af	16.90 af	6.74 af	2.89 af
	Peak	202.6 cfs	96.70 cfs	42.22 cfs	21.10 cfs
10-Year Storm 6.0"	**Volume**	76.59 af	58.03 af	18.86 af	9.49 af
	Peak	535.3 cfs	389.0 cfs	126.2 cfs	89.54 cfs
25-Year Storm 6.3"	**Volume**	82.68 af	63.51 af	20.47 af	10.55 af
	Peak	571.9 cfs	426.0 cfs	137.2 cfs	102.0 cfs
100-Year Storm 8.0"	**Volume**	118.10 af	95.49 af	29.88 af	16.81 af
	Peak	786.4 cfs	652.8 cfs	202.1 cfs	178.0 cfs

As indicated in Table 2, stormwater runoff from the Wildacres Resort area has been reduced to pre-development levels. Supporting calculations may be found at the end of this report.

Big Indian Plateau

The existing drainage for the Big Indian Plateau is broken down into seven (7) subcatchment areas totaling approximately 1,409 acres. They are numbered 1-6 and 30 and are indicated on Drawing SD-5. Subcatchment 30 drains to the south toward an existing swale which is located just north of Lost Clove Road (Design Point 4). This swale flows to the east and for design purposes, we have chosen the southeast corner of the property along this swale as the design point.

Subcatchments 4, 5 and 6 drain from the Belleayre Mountain Ridgeline to the north and then flow east within an existing swale to Design Point 1. The design assumes that any small ephemeral streams, intermittent drainage ditches or wash-outs of the railroad ditch that could be intercepted by stormwater discharges will be by-passed in order to maintain separations of stormwater runoff and any of the existing streams. This can be accomplished by repairs made within the existing railroad bed.

Subcatchments 1, 2 and 3 also drain from a high point along the Belleayre Mountain Ridgeline to the north. Subcatchments 1 and 2 drain to a low point just east of Woodchuck Hollow Road (Design Point 3). Overflow from this point drains along a swale south of the existing railroad tracks to a second low point where Giggle Hollow flows to the north. This is the point (Design Point 2), where Subcatchment 3 drains to the north.

The proposed development on the Big Indian Plateau has been divided into two areas. The proposed drainage for Belleayre Highlands is indicated on Drawing SD-6 and the Big Indian Resort and Spa and Big Indian Country Club is shown as Drawing SD-7. The proposed (post-development) Hydrocad model has also been divided into these two (2) areas.

Belleayre Highlands includes 88 detached lodging units grouped in 22 quadplex buildings built around the existing Brisbane (Turner) Mansion. The existing structure will be transformed into a clubhouse with an outdoor pool and four tennis courts.

Subcatchments 1-3, 7, 10, 12, 17, 18 and 22 flow to Design Point 3. These areas include the existing mansion, tennis courts, a swimming pool and 27 housing units. Subcatchments 4-6, 8, 9, 11, 13-16, 19-21, 23-26 and 33 drain to Design Point 2.

These areas include housing units, the access road between Belleayre Highlands and Big Indian Resort and Spa and Big Indian Country Club, nine (9) triplex units along with a portion of golf holes 13, 14, 16, 17 and 18 and Giggle Hollow.

The Big Indian Resort and Spa and the Big Indian Country Club includes: a luxury hotel with 150 rooms, a spa and clubhouse, an 18 hole championship golf course with a driving range, 35 single detached lodging units and 60 detached lodging units located within 20 triplex buildings.

The proposed drainage is broken down into thirty-two (32) subcatchments. Areas 30, 36, 37 and 38 drain to the existing swale which is located along the north side of Lost Clove Road (Design Point 4). These drainage areas are not impacted except for portions of golf holes 1, 2 and 3 which will be constructed along the ridge at the top of the watershed. The clearing for these holes account for 11% of the total area flowing to Design Point 4.

Subchatchment areas 1-14, 21-29, 31, 32, 34, 40 and 42 drain to Design Point 1, and include: the hotel, golf clubhouse and spa, associated parking along with the remainder of the detached lodging units and golf holes. These areas flow through a series of swales and detention basins as they flow toward Design Point 1.

Table 3
Big Indian Plateau

		Design Point 1		Design Point 2		Design Point 3		Design Point 4	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post
Water Quality Volume (WQ_V)		10.36 acre feet required/21.40 acre feet provided							
1-Year Storm	Volume (af)	31.75	23.40	32.01	28.26	14.42	11.32	22.70	21.45
3.5"	Peak (cfs)	138.90	138.50	141.00	133.30	79.22	53.47	105.70	98.35
10-Year Storm	Volume (af)	91.86	81.09	92.15	85.66	41.35	37.72	65.27	63.74
6.0"	Peak (cfs)	454.70	397.80	435.90	423.80	247.70	211.20	325.50	312.40
25-Year Storm	Volume (af)	99.94	88.90	100.23	93.31	44.96	41.26	70.99	69.48
6.3"	Peak (cfs)	496.80	446.50	475.20	460.90	270.80	233.00	354.90	340.90
100-Year Storm	Volume (af)	147.54	134.50	147.94	138.22	66.12	62.14	104.71	103.23
8.0"	Peak (cfs)	746.00	746.00	706.90	686.80	404.00	348.70	528.60	508.30

As indicated in Table 3, stormwater runoff from the proposed development area has been reduced to predevelopment levels. Supporting calculations may be found at the end of this report. Summary tables have been included for the one (1), ten (10) and one hundred (100) year storm. Comprehensive subcatchment, reach and pond data has been included for the twenty-five (25) year storm.

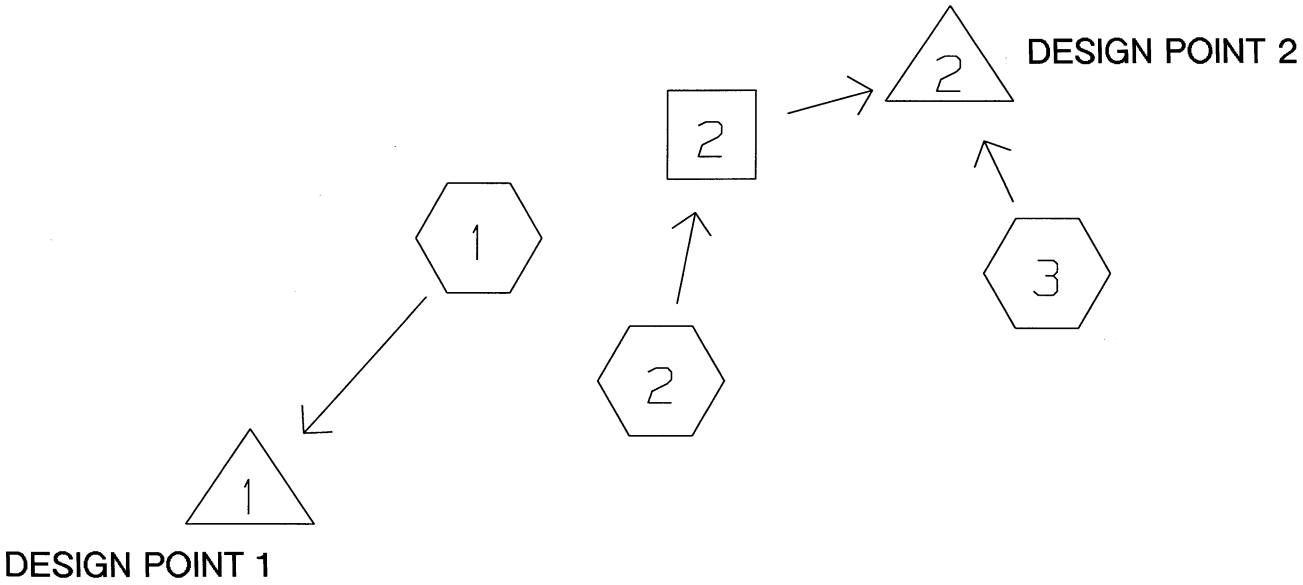
Stormwater impacts, associated with clearing and grading, along with the development of golf holes, roads and buildings have been mitigated. This has been achieved through the use of devices such as swales, roadside ditches, catch basins, pipes and detention ponds. The stormwater facilities control the twenty-five (25) year, Type II storm event while withstanding the discharge from a one hundred (100) year event.

COMPUTATIONS

HIGHMOUNT ESTATES

PRE-DEVELOPMENT

WATERSHED ROUTING ==========



1 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 3.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	29.84	49.1	1%98 0%98 1%98 6%71 92%70	71	-	17.62	12.48	2.33
2	35.72	37.4	2%98 8%71 91%70	71	-	25.72	12.32	2.81
3	103.75	38.2	0%98 0%98 38%71 61%70	71	-	73.64	12.33	8.16

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
2	-	3.0	2.5	.33	.33	.050	600	.0580	5.1	2.0	25.13

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	17.62	17.62			0	0.0	N
2	0.0	0.0	0.0	0.00	98.50	98.50			0	0.0	N

10 YEAR STORM EVENT

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
2	-	3.0	2.5	.33	.33	.050	600	.0580	6.7	1.5	74.94

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	52.61	52.61			0	0.0	N
2	0.0	0.0	0.0	0.00	292.5	292.5			0	0.0	N

25 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.30 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	29.84	49.1	1%98 0%98 1%98 6%71 92%70	71	-	57.21	12.44	7.07
2	35.72	37.4	2%98 8%71 91%70	71	-	82.70	12.30	8.49
3	103.75	38.2	0%98 0%98 38%71 61%70	71	-	237.1	12.31	24.67

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
2	-	3.0	2.5	.33	.33	.050	600	.0580	6.9	1.5	81.65

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	57.21	57.21			0	0.0	N
2	0.0	0.0	0.0	0.00	318.2	318.2			0	0.0	N

SUBCATCHMENT 1

PEAK= 57.21 CFS @ 12.44 HRS, VOLUME= 7.07 AF

ACRES	CN	
.26	98	ROAD
.09	98	BUILDINGS
.18	98	DRIVEWAYS
1.89	71	C SOIL, MEADOW
27.42	70	C SOIL, FOREST, GOOD CONDITION
29.84	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	46.1
Forest w/Heavy Litter Kv=2.5 L=2900' s=.176 '/' V=1.05 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.0
Short Grass Pasture Kv=7 L=110' s=.064 '/' V=1.77 fps		
CHANNEL FLOW	**Segment ID:**	2.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.034 '/' n=.05 V=5.98 fps L=730' Capacity=107.6 cfs		
	Total Length= 3740 ft Total Tc=	49.1

SUBCATCHMENT 2

PEAK= 82.70 CFS @ 12.30 HRS, VOLUME= 8.49 AF

ACRES	CN	
.60	98	ROAD
2.70	71	C SOIL, MEADOW
32.42	70	C SOIL, FOREST, GOOD CONDITION
35.72	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	32.9
Forest w/Heavy Litter Kv=2.5 L=2150' s=.19 '/' V=1.09 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.8
Short Grass Pasture Kv=7 L=100' s=.1 '/' V=2.21 fps		
CHANNEL FLOW	**Segment ID:**	3.7
a=18 sq-ft Pw=15.8' r=1.139'		
s=.086 '/' n=.05 V=9.51 fps L=2100' Capacity=171.1 cfs		
	Total Length= 4350 ft Total Tc=	37.4

SUBCATCHMENT 3

PEAK= 237.1 CFS @ 12.31 HRS, VOLUME= 24.67 AF

ACRES	CN	
.30	98	ROAD
.14	98	BUILDINGS
39.80	71	C SOIL, MEADOW
63.51	70	C SOIL, FOREST, GOOD CONDITION
103.75	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	33.4
Forest w/Heavy Litter Kv=2.5 L=2650' s=.28 '/' V=1.32 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.8
Short Grass Pasture Kv=7 L=400' s=.28 '/' V=3.7 fps		
CHANNEL FLOW	**Segment ID:**	3.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.03 '/' n=.05 V=5.62 fps L=1000' Capacity=101.1 cfs		
	Total Length= 4050 ft Total Tc=	38.2

REACH 2 **ROADSIDE SWALE**

Qin = 82.70 CFS @ 12.30 HRS, VOLUME= 8.49 AF
Qout= 81.65 CFS @ 12.34 HRS, VOLUME= 8.48 AF, ATTEN= 1%, LAG= 2.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	2.33
.50	2.26	8.25
.75	3.95	18.02
1.08	6.73	37.31
1.50	11.32	75.53
2.00	18.12	142.33
2.50	26.44	236.25

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 600 FT
SLOPE= .058 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.55 FT
PEAK VELOCITY= 6.9 FPS
TRAVEL TIME = 1.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

POND 1

Not described

Qin = 57.21 CFS @ 12.44 HRS, VOLUME= 7.07 AF
Qout= 57.21 CFS @ 12.44 HRS, VOLUME= 7.07 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 2

Not described

Qin = 318.2 CFS @ 12.32 HRS, VOLUME= 33.14 AF
Qout= 318.2 CFS @ 12.32 HRS, VOLUME= 33.14 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

100 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 8.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	29.84	49.1	1%98 0%98 1%98 6%71 92%70	71	-	84.16	12.44	10.30
2	35.72	37.4	2%98 8%71 91%70	71	-	121.4	12.29	12.36
3	103.75	38.2	0%98 0%98 38%71 61%70	71	-	348.1	12.30	35.90

REACH ROUTING BY STOR-IND+TRANS METHOD

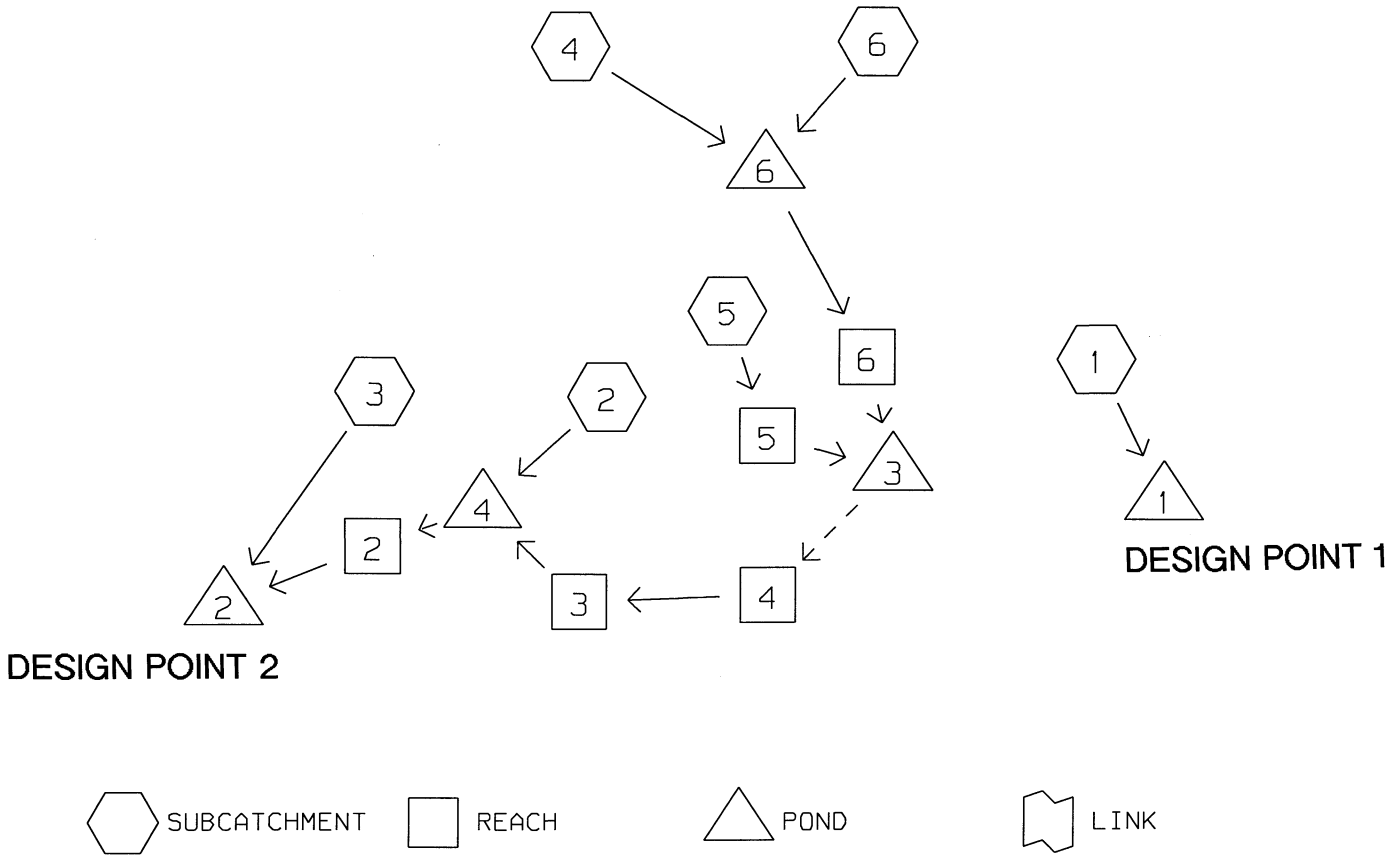
REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
2	-	3.0	2.5	.33	.33	.050	600	.0580	7.6	1.3	119.9

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	84.16	84.16			0	0.0	N
2	0.0	0.0	0.0	0.00	467.4	467.4			0	0.0	N

POST-DEVELOPMENT

WATERSHED ROUTING ==========



1 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 3.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	26.10	49.1	1%98 1%98 1%98 21%74 76%70	72	-	16.47	12.48	2.16
2	29.45	17.5	2%98 1%98 0%98 8%71 10%74 79%70	72	-	35.93	12.07	2.47
3	97.65	38.2	0%98 0%98 41%71 59%70	71	-	69.31	12.33	7.68
4	10.38	10.4	5%98 2%98 1%98 47%74 45%70	74	-	18.07	11.98	.97
5	1.14	2.3	23%98 77%74	79	-	3.19	11.88	.14
6	4.59	9.9	10%98 1%98 0%98 45%74 43%70	75	-	8.48	11.98	.45

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
2	-	3.0	2.5	.33	.33	.050	400	.0620	4.1	1.6	10.14
3	-	3.0	2.5	.33	.33	.050	1040	.0758	3.7	4.7	5.45
4	-	3.0	2.5	.33	.33	.050	1330	.0758	3.7	6.0	5.54
5	18.0	-	-	-	-	.012	50	.0100	5.6	.1	3.16
6	-	3.0	2.0	.33	.33	.040	300	.0500	5.3	.9	19.43

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2431.0	2436.5	2435.6	1.26	16.47	4.13	.28	3.84	75	69.1	
2	0.0	0.0	0.0	0.00	69.31	69.31			0	0.0	N
3	2451.9	2456.0	2453.7	.61	19.85	5.81	.16	5.65	71	25.1	
4	2264.0	2271.0	2269.7	1.41	35.93	10.57	.06	10.51	71	45.8	
6	2464.9	2471.0	2466.7	.25	26.54	19.77			26	5.3	

10 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	26.10	49.1	1%98 1%98 1%98 21%74 76%70	72	-	47.67	12.44	5.89
2	29.45	17.5	2%98 1%98 0%98 8%71 10%74 79%70	72	-	100.4	12.05	6.71
3	97.65	38.2	0%98 0%98 41%71 59%70	71	-	205.2	12.31	21.41
4	10.38	10.4	5%98 2%98 1%98 47%74 45%70	74	-	46.90	11.98	2.52
5	1.14	2.3	23%98 77%74	79	-	7.27	11.87	.32
6	4.59	9.9	10%98 1%98 0%98 45%74 43%70	75	-	21.45	11.97	1.15

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
2	-	3.0	2.5	.33	.33	.050	400	.0620	7.5	.9	98.89
3	-	3.0	2.5	.33	.33	.050	1040	.0758	5.8	3.0	29.20
4	-	3.0	2.5	.33	.33	.050	1330	.0758	5.8	3.8	29.90
5	18.0	-	-	-	-	.012	50	.0100	6.9	.1	7.22
6	-	3.0	2.0	.33	.33	.040	300	.0500	6.7	.7	48.43

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2431.0	2436.5	2435.9	1.42	47.67	52.54	.33	52.21	0	5.0	
2	0.0	0.0	0.0	0.00	285.4	285.4			0	0.0	N
3	2451.9	2456.0	2455.1	1.26	49.44	31.14	.46	30.69	37	12.8	
4	2264.0	2271.0	2270.6	1.65	102.3	121.6	.09	121.5	0	3.2	
6	2464.9	2471.0	2468.6	.58	68.34	49.15			28	5.4	

25 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.30 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	26.10	49.1	1%98 1%98 1%98 21%74 76%70	72	-	51.74	12.44	6.38
2	29.45	17.5	2%98 1%98 0%98 8%71 10%74 79%70	72	-	108.8	12.05	7.26
3	97.65	38.2	0%98 0%98 41%71 59%70	71	-	223.1	12.31	23.22
4	10.38	10.4	5%98 2%98 1%98 47%74 45%70	74	-	50.57	11.98	2.71
5	1.14	2.3	23%98 77%74	79	-	7.78	11.87	.34
6	4.59	9.9	10%98 1%98 0%98 45%74 43%70	75	-	23.10	11.97	1.23

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
2	-	3.0	2.5	.33	.33	.050	400	.0620	7.8	.9	114.7
3	-	3.0	2.5	.33	.33	.050	1040	.0758	5.9	2.9	32.05
4	-	3.0	2.5	.33	.33	.050	1330	.0758	6.0	3.7	32.78
5	18.0	-	-	-	-	.012	50	.0100	7.0	.1	7.72
6	-	3.0	2.0	.33	.33	.040	300	.0500	6.8	.7	51.62

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2431.0	2436.5	2435.9	1.42	51.74	51.69	.33	51.37	0	3.4	
2	0.0	0.0	0.0	0.00	306.9	306.9			0	0.0	N
3	2451.9	2456.0	2455.2	1.34	52.67	34.15	.49	33.67	35	12.6	
4	2264.0	2271.0	2270.6	1.66	111.5	123.9	.09	123.8	0	3.0	
6	2464.9	2471.0	2468.9	.64	73.65	52.13			29	5.4	

SUBCATCHMENT 1

PEAK= 51.74 CFS @ 12.44 HRS, VOLUME= 6.38 AF

ACRES	CN		SCS TR-20 METHOD
.26	98	ROAD	TYPE II 24-HOUR
.38	98	BUILDINGS	RAINFALL= 6.30 IN
.29	98	DRIVEWAYS	SPAN= 10-20 HRS, dt=.1 HRS
5.39	74	C SOIL, GRASS, GOOD CONDITION	
19.78	70	C SOIL, FOREST, GOOD CONDITION	
26.10	72		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	46.1
Forest w/Heavy Litter Kv=2.5 L=2900' s=.176 '/' V=1.05 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.0
Short Grass Pasture Kv=7 L=110' s=.064 '/' V=1.77 fps		
CHANNEL FLOW	**Segment ID:**	2.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.034 '/' n=.05 V=5.98 fps L=730' Capacity=107.6 cfs		
	Total Length= 3740 ft Total Tc=	49.1

SUBCATCHMENT 2

PEAK= 108.8 CFS @ 12.05 HRS, VOLUME= 7.26 AF

ACRES	CN		SCS TR-20 METHOD
.60	98	ROAD	TYPE II 24-HOUR
.40	98	BUILDINGS	RAINFALL= 6.30 IN
.14	98	DRIVEWAYS	SPAN= 10-20 HRS, dt=.1 HRS
2.27	71	C SOIL, MEADOW	
2.81	74	C SOIL, GRASS, GOOD CONDITION	
23.23	70	C SOIL, FOREST, GOOD CONDITION	
29.45	72		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	17.5
Forest w/Heavy Litter Kv=2.5 L=1600' s=.37 '/' V=1.52 fps		

SUBCATCHMENT 3

PEAK= 223.1 CFS @ 12.31 HRS, VOLUME= 23.22 AF

ACRES	CN		
.23	98	ROAD	SCS TR-20 METHOD
.14	98	BUILDINGS	TYPE II 24-HOUR
39.69	71	C SOIL, MEADOW	RAINFALL= 6.30 IN
57.59	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
97.65	71		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	33.4
Forest w/Heavy Litter Kv=2.5 L=2650' s=.28 '/' V=1.32 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.8
Short Grass Pasture Kv=7 L=400' s=.28 '/' V=3.7 fps		
CHANNEL FLOW	**Segment ID:**	3.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.03 '/' n=.05 V=5.62 fps L=1000' Capacity=101.1 cfs		
	Total Length= 4050 ft Total Tc=	38.2

SUBCATCHMENT 4

PEAK= 50.57 CFS @ 11.98 HRS, VOLUME= 2.71 AF

ACRES	CN		
.50	98	ROAD	SCS TR-20 METHOD
.17	98	BUILDINGS	TYPE II 24-HOUR
.07	98	DRIVEWAYS	RAINFALL= 6.30 IN
4.92	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
4.72	70	C SOIL, FOREST, GOOD CONDITION	
10.38	74		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.3
Forest w/Heavy Litter Kv=2.5 L=450' s=.167 '/' V=1.02 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.7
Short Grass Pasture Kv=7 L=180' s=.333 '/' V=4.04 fps		
CHANNEL FLOW	**Segment ID:**	2.4
a=18 sq-ft Pw=15.8' r=1.139'		
s=.015 '/' n=.04 V=4.96 fps L=700' Capacity=89.3 cfs		
	Total Length= 1330 ft Total Tc=	10.4

SUBCATCHMENT 5

PEAK= 7.78 CFS @ 11.87 HRS, VOLUME= .34 AF

ACRES	CN		
.26	98	ROAD	SCS TR-20 METHOD
.88	74	C SOIL, LAWN, GOOD CONDITION	TYPE II 24-HOUR
1.14	79		RAINFALL= 6.30 IN
			SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
CHANNEL FLOW	**Segment ID:**	2.2
a=18 sq-ft Pw=15.8' r=1.139'		
s=.0278 '/' n=.04 V=6.76 fps	L=900' Capacity=121.6 cfs	
	Total Length= 920 ft Total Tc=	2.3

SUBCATCHMENT 6

PEAK= 23.10 CFS @ 11.97 HRS, VOLUME= 1.23 AF

ACRES	CN		
.48	98	ROAD	SCS TR-20 METHOD
.06	98	BUILDINGS	TYPE II 24-HOUR
.02	98	DRIVEWAYS	RAINFALL= 6.30 IN
2.06	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
1.97	70	C SOIL, FOREST, GOOD CONDITION	
4.59	75		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.7
Forest w/Heavy Litter Kv=2.5 L=550' s=.227 '/' V=1.19 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Short Grass Pasture Kv=7 L=90' s=.277 '/' V=3.68 fps		
CHANNEL FLOW	**Segment ID:**	1.8
a=18 sq-ft Pw=15.8' r=1.139'		
s=.079 '/' n=.04 V=11.39 fps	L=1200' Capacity=205 cfs	
	Total Length= 1840 ft Total Tc=	9.9

REACH 2 **ROADSIDE SWALE**

Qin = 123.8 CFS @ 12.12 HRS, VOLUME= 9.51 AF
Qout= 114.7 CFS @ 12.14 HRS, VOLUME= 9.50 AF, ATTEN= 7%, LAG= 1.4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	2.41
.50	2.26	8.53
.75	3.95	18.63
1.08	6.73	38.58
1.50	11.32	78.09
2.00	18.12	147.16
2.50	26.44	244.26

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 400 FT
SLOPE= .062 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.80 FT
PEAK VELOCITY= 7.8 FPS
TRAVEL TIME = .9 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 3 **ROADSIDE SWALE**

Qin = 32.78 CFS @ 12.41 HRS, VOLUME= 3.69 AF
Qout= 32.05 CFS @ 12.50 HRS, VOLUME= 3.67 AF, ATTEN= 2%, LAG= 5.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	2.67
.50	2.26	9.43
.75	3.95	20.60
1.08	6.73	42.65
1.50	11.32	86.34
2.00	18.12	162.71
2.50	26.44	270.07

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 1040 FT
SLOPE= .0758 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .92 FT
PEAK VELOCITY= 5.9 FPS
TRAVEL TIME = 2.9 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 4 **ROADSIDE SWALE**

Qin = 33.67 CFS @ 12.29 HRS, VOLUME= 3.71 AF
Qout= 32.78 CFS @ 12.41 HRS, VOLUME= 3.69 AF, ATTEN= 3%, LAG= 7.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	2.67
.50	2.26	9.43
.75	3.95	20.60
1.08	6.73	42.65
1.50	11.32	86.34
2.00	18.12	162.71
2.50	26.44	270.07

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 1330 FT
SLOPE= .0758 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .93 FT
PEAK VELOCITY= 6.0 FPS
TRAVEL TIME = 3.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 5 **CULVERT**

Qin = 7.78 CFS @ 11.87 HRS, VOLUME= .34 AF
Qout= 7.72 CFS @ 11.87 HRS, VOLUME= .34 AF, ATTEN= 1%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.24
.30	.25	1.00
.45	.45	2.23
1.05	1.32	9.53
1.20	1.52	11.12
1.35	1.68	12.13
1.41	1.72	12.24
1.46	1.75	12.13
1.50	1.77	11.38

18" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .88 FT
PEAK VELOCITY= 7.0 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 6 **ROADSIDE SWALE**

Qin = 52.13 CFS @ 12.06 HRS, VOLUME= 3.89 AF
Qout= 51.62 CFS @ 12.09 HRS, VOLUME= 3.89 AF, ATTEN= 1%, LAG= 1.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.83
.40	1.68	6.32
.60	2.89	13.54
.86	4.82	27.47
1.20	7.96	54.47
1.60	12.56	100.85
2.00	18.12	165.19

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 300 FT
SLOPE= .05 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.17 FT
PEAK VELOCITY= 6.8 FPS
TRAVEL TIME = .7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

POND 1 **STORM POND, VLY, 1.6"/HR TO 2.5' DEPTH**

Qin = 51.74 CFS @ 12.44 HRS, VOLUME= 6.38 AF
Qout= 51.69 CFS @ 12.50 HRS, VOLUME= 5.13 AF, ATTEN= 0%, LAG= 3.4 MIN
Qpri= .33 CFS @ 12.50 HRS, VOLUME= .19 AF
Qsec= 51.37 CFS @ 12.50 HRS, VOLUME= 4.94 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2431.0	0	0	0
2432.0	7500	3750	3750
2435.0	19000	39750	43500
2436.0	22500	20750	64250

STOR-IND METHOD
PEAK STORAGE = 61992 CF
PEAK ELEVATION= 2435.9 FT
FLOOD ELEVATION= 2436.5 FT
START ELEVATION= 2431.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 76.2 MIN (5.08 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2433.5'	**EXFILTRATION**
			V= .0022 FPM over (SURFACE AREA - 13250 SF)
2	S	2435.5'	**108' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 2

Not described

Qin = 306.9 CFS @ 12.23 HRS, VOLUME= 32.71 AF
Qout= 306.9 CFS @ 12.23 HRS, VOLUME= 32.71 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 3 **STORM POND, VLY, 1.6"/HR TO 2.5' DEPTH**

Qin = 52.67 CFS @ 12.08 HRS, VOLUME= 4.23 AF
Qout= 34.15 CFS @ 12.29 HRS, VOLUME= 3.81 AF, ATTEN= 35%, LAG= 12.6 MIN
Qpri= .49 CFS @ 12.29 HRS, VOLUME= .09 AF
Qsec= 33.67 CFS @ 12.29 HRS, VOLUME= 3.71 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2451.9	0	0	0
2452.0	7500	375	375
2453.0	15000	11250	11625
2455.0	27000	42000	53625

STOR-IND METHOD
PEAK STORAGE = 58285 CF
PEAK ELEVATION= 2455.2 FT
FLOOD ELEVATION= 2456.0 FT
START ELEVATION= 2451.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 62.7 MIN (3.77 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2453.0'	**EXFILTRATION** V= .0022 FPM over (SURFACE AREA - 15000 SF)
2	S	2453.0'	**24" CULVERT X 2** n=.012 L=50' S=.01'/' Ke=.5 Cc=.9 Cd=.6

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Culvert

POND 4 **STORM POND, VLY, 1.6"/HR TO 2.5' DEPTH**

Qin = 111.5 CFS @ 12.07 HRS, VOLUME= 10.93 AF
Qout= 123.9 CFS @ 12.12 HRS, VOLUME= 9.56 AF, ATTEN= 0%, LAG= 3.0 MIN
Qpri= .09 CFS @ 12.12 HRS, VOLUME= .04 AF
Qsec= 123.8 CFS @ 12.12 HRS, VOLUME= 9.51 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2264.0	0	0	0
2265.0	10000	5000	5000
2270.0	14000	60000	65000

STOR-IND METHOD
PEAK STORAGE = 72387 CF
PEAK ELEVATION= 2270.6 FT
FLOOD ELEVATION= 2271.0 FT
START ELEVATION= 2264.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 56.7 MIN (9.56 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2267.5'	**EXFILTRATION** V= .0022 FPM over (SURFACE AREA - 12000 SF)
2	S	2269.5'	**65' BROAD-CRESTED RECTANGULAR WEIR** Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 6 **STORM POND, VLY, ASSUMED NO PERC**

Qin = 73.65 CFS @ 11.97 HRS, VOLUME= 3.95 AF
Qout= 52.13 CFS @ 12.06 HRS, VOLUME= 3.89 AF, ATTEN= 29%, LAG= 5.4 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2464.9	0	0	0
2465.0	4200	210	210
2468.0	8800	19500	19710
2469.0	9800	9300	29010

STOR-IND METHOD
PEAK STORAGE = 27994 CF
PEAK ELEVATION= 2468.9 FT
FLOOD ELEVATION= 2471.0 FT
START ELEVATION= 2464.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 15.3 MIN (3.89 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2465.0'	**24" CULVERT X 2**
			n=.012 L=50' S=.005'/' Ke=.5 Cc=.9 Cd=.6

100 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 8.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	26.10	49.1	1%98 1%98 1%98 21%74 76%70	72	-	75.53	12.43	9.23
2	29.45	17.5	2%98 1%98 0%98 8%71 10%74 79%70	72	-	158.4	12.05	10.47
3	97.65	38.2	0%98 0%98 41%71 59%70	71	-	327.6	12.30	33.79
4	10.38	10.4	5%98 2%98 1%98 47%74 45%70	74	-	71.76	11.97	3.86
5	1.14	2.3	23%98 77%74	79	-	10.64	11.87	.47
6	4.59	9.9	10%98 1%98 0%98 45%74 43%70	75	-	32.55	11.97	1.74

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
2	-	3.0	2.5	.33	.33	.050	400	.0620	8.4	.8	165.5
3	-	3.0	2.5	.33	.33	.050	1040	.0758	6.5	2.7	46.74
4	-	3.0	2.5	.33	.33	.050	1330	.0758	6.6	3.4	47.53
5	18.0	-	-	-	-	.012	50	.0100	7.3	.1	10.57
6	-	3.0	2.0	.33	.33	.040	300	.0500	7.3	.7	65.93

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2431.0	2436.5	2436.0	1.48	75.53	75.32	.34	74.98	0	3.0	
2	0.0	0.0	0.0	0.00	455.5	455.5			0	0.0	N
3	2451.9	2456.0	2456.0	1.70	67.22	49.01	.66	48.35	27	12.9	
4	2264.0	2271.0	2271.0	1.76	169.3	167.2	.10	167.1	1	1.5	
6	2464.9	2471.0	2470.6	1.01	104.3	66.60			36	6.8	

SUBCATCHMENT 1

PEAK= 75.53 CFS @ 12.43 HRS, VOLUME= 9.23 AF

ACRES	CN		SCS TR-20 METHOD
.26	98	ROAD	TYPE II 24-HOUR
.38	98	BUILDINGS	RAINFALL= 8.00 IN
.29	98	DRIVEWAYS	SPAN= 10-20 HRS, dt=.1 HRS
5.39	74	C SOIL, GRASS, GOOD CONDITION	
19.78	70	C SOIL, FOREST, GOOD CONDITION	
26.10	72		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	46.1
Forest w/Heavy Litter Kv=2.5 L=2900' s=.176 '/' V=1.05 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.0
Short Grass Pasture Kv=7 L=110' s=.064 '/' V=1.77 fps		
CHANNEL FLOW	**Segment ID:**	2.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.034 '/' n=.05 V=5.98 fps L=730' Capacity=107.6 cfs		
	Total Length= 3740 ft Total Tc=	49.1

SUBCATCHMENT 2

PEAK= 158.4 CFS @ 12.05 HRS, VOLUME= 10.47 AF

ACRES	CN		SCS TR-20 METHOD
.60	98	ROAD	TYPE II 24-HOUR
.40	98	BUILDINGS	RAINFALL= 8.00 IN
.14	98	DRIVEWAYS	SPAN= 10-20 HRS, dt=.1 HRS
2.27	71	C SOIL, MEADOW	
2.81	74	C SOIL, GRASS, GOOD CONDITION	
23.23	70	C SOIL, FOREST, GOOD CONDITION	
29.45	72		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	17.5
Forest w/Heavy Litter Kv=2.5 L=1600' s=.37 '/' V=1.52 fps		

SUBCATCHMENT 3

PEAK= 327.6 CFS @ 12.30 HRS, VOLUME= 33.79 AF

ACRES	CN	
.23	98	ROAD
.14	98	BUILDINGS
39.69	71	C SOIL, MEADOW
57.59	70	C SOIL, FOREST, GOOD CONDITION
97.65	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 8.00 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	33.4
Forest w/Heavy Litter Kv=2.5 L=2650' s=.28 '/' V=1.32 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.8
Short Grass Pasture Kv=7 L=400' s=.28 '/' V=3.7 fps		
CHANNEL FLOW	**Segment ID:**	3.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.03 '/' n=.05 V=5.62 fps L=1000' Capacity=101.1 cfs		
	Total Length= 4050 ft Total Tc=	38.2

SUBCATCHMENT 4

PEAK= 71.76 CFS @ 11.97 HRS, VOLUME= 3.86 AF

ACRES	CN	
.50	98	ROAD
.17	98	BUILDINGS
.07	98	DRIVEWAYS
4.92	74	C SOIL, GRASS, GOOD CONDITION
4.72	70	C SOIL, FOREST, GOOD CONDITION
10.38	74	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 8.00 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.3
Forest w/Heavy Litter Kv=2.5 L=450' s=.167 '/' V=1.02 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.7
Short Grass Pasture Kv=7 L=180' s=.333 '/' V=4.04 fps		
CHANNEL FLOW	**Segment ID:**	2.4
a=18 sq-ft Pw=15.8' r=1.139'		
s=.015 '/' n=.04 V=4.96 fps L=700' Capacity=89.3 cfs		
	Total Length= 1330 ft Total Tc=	10.4

SUBCATCHMENT 5

PEAK= 10.64 CFS @ 11.87 HRS, VOLUME= .47 AF

ACRES	CN	
.26	98	ROAD
.88	74	C SOIL, LAWN, GOOD CONDITION
1.14	79	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 8.00 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
CHANNEL FLOW	**Segment ID:**	2.2
a=18 sq-ft Pw=15.8' r=1.139'		
s=.0278 '/' n=.04 V=6.76 fps	L=900' Capacity=121.6 cfs	
	Total Length= 920 ft Total Tc=	2.3

SUBCATCHMENT 6

PEAK= 32.55 CFS @ 11.97 HRS, VOLUME= 1.74 AF

ACRES	CN	
.48	98	ROAD
.06	98	BUILDINGS
.02	98	DRIVEWAYS
2.06	74	C SOIL, GRASS, GOOD CONDITION
1.97	70	C SOIL, FOREST, GOOD CONDITION
4.59	75	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 8.00 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.7
Forest w/Heavy Litter Kv=2.5 L=550' s=.227 '/' V=1.19 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Short Grass Pasture Kv=7 L=90' s=.277 '/' V=3.68 fps		
CHANNEL FLOW	**Segment ID:**	1.8
a=18 sq-ft Pw=15.8' r=1.139'		
s=.079 '/' n=.04 V=11.39 fps	L=1200' Capacity=205 cfs	
	Total Length= 1840 ft Total Tc=	9.9

REACH 2 **ROADSIDE SWALE**

Qin = 167.1 CFS @ 12.09 HRS, VOLUME= 14.43 AF
Qout= 165.5 CFS @ 12.12 HRS, VOLUME= 14.41 AF, ATTEN= 1%, LAG= 1.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	2.41
.50	2.26	8.53
.75	3.95	18.63
1.08	6.73	38.58
1.50	11.32	78.09
2.00	18.12	147.16
2.50	26.44	244.26

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 400 FT
SLOPE= .062 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.11 FT
PEAK VELOCITY= 8.4 FPS
TRAVEL TIME = .8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 3 **ROADSIDE SWALE**

Qin = 47.53 CFS @ 12.41 HRS, VOLUME= 5.41 AF
Qout= 46.74 CFS @ 12.50 HRS, VOLUME= 5.39 AF, ATTEN= 2%, LAG= 4.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	2.67
.50	2.26	9.43
.75	3.95	20.60
1.08	6.73	42.65
1.50	11.32	86.34
2.00	18.12	162.71
2.50	26.44	270.07

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 1040 FT
SLOPE= .0758 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.12 FT
PEAK VELOCITY= 6.5 FPS
TRAVEL TIME = 2.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 4 **ROADSIDE SWALE**

Qin = 48.35 CFS @ 12.31 HRS, VOLUME= 5.44 AF
Qout= 47.53 CFS @ 12.41 HRS, VOLUME= 5.41 AF, ATTEN= 2%, LAG= 6.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	2.67
.50	2.26	9.43
.75	3.95	20.60
1.08	6.73	42.65
1.50	11.32	86.34
2.00	18.12	162.71
2.50	26.44	270.07

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 1330 FT
SLOPE= .0758 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.12 FT
PEAK VELOCITY= 6.6 FPS
TRAVEL TIME = 3.4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 5 **CULVERT**

Qin = 10.64 CFS @ 11.87 HRS, VOLUME= .47 AF
Qout= 10.57 CFS @ 11.87 HRS, VOLUME= .47 AF, ATTEN= 1%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.24
.30	.25	1.00
.45	.45	2.23
1.05	1.32	9.53
1.20	1.52	11.12
1.35	1.68	12.13
1.41	1.72	12.24
1.46	1.75	12.13
1.50	1.77	11.38

18" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.12 FT
PEAK VELOCITY= 7.3 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 6 **ROADSIDE SWALE**

Qin = 66.60 CFS @ 12.08 HRS, VOLUME= 5.54 AF
Qout= 65.93 CFS @ 12.10 HRS, VOLUME= 5.53 AF, ATTEN= 1%, LAG= 1.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.83
.40	1.68	6.32
.60	2.89	13.54
.86	4.82	27.47
1.20	7.96	54.47
1.60	12.56	100.85
2.00	18.12	165.19

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 300 FT
SLOPE= .05 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.30 FT
PEAK VELOCITY= 7.3 FPS
TRAVEL TIME = .7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

POND 1 **STORM POND, VLY, 1.6"/HR TO 2.5' DEPTH**

Qin = 75.53 CFS @ 12.43 HRS, VOLUME= 9.23 AF
Qout= 75.32 CFS @ 12.48 HRS, VOLUME= 7.98 AF, ATTEN= 0%, LAG= 3.0 MIN
Qpri= .34 CFS @ 12.48 HRS, VOLUME= .19 AF
Qsec= 74.98 CFS @ 12.48 HRS, VOLUME= 7.78 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2431.0	0	0	0
2432.0	7500	3750	3750
2435.0	19000	39750	43500
2436.0	22500	20750	64250

STOR-IND METHOD
PEAK STORAGE = 64329 CF
PEAK ELEVATION= 2436.0 FT
FLOOD ELEVATION= 2436.5 FT
START ELEVATION= 2431.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 59.4 MIN (7.98 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2433.5'	**EXFILTRATION**
			V= .0022 FPM over (SURFACE AREA - 13250 SF)
2	S	2435.5'	**108' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 2

Not described

Qin = 455.5 CFS @ 12.23 HRS, VOLUME= 48.20 AF
Qout= 455.5 CFS @ 12.23 HRS, VOLUME= 48.20 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 3 **STORM POND, VLY, 1.6"/HR TO 2.5' DEPTH**

Qin = 67.22 CFS @ 12.10 HRS, VOLUME= 6.00 AF
Qout= 49.01 CFS @ 12.31 HRS, VOLUME= 5.56 AF, ATTEN= 27%, LAG= 12.9 MIN
Qpri= .66 CFS @ 12.31 HRS, VOLUME= .12 AF
Qsec= 48.35 CFS @ 12.31 HRS, VOLUME= 5.44 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2451.9	0	0	0
2452.0	7500	375	375
2453.0	15000	11250	11625
2455.0	27000	42000	53625

STOR-IND METHOD
PEAK STORAGE = 74133 CF
PEAK ELEVATION= 2456.0 FT
FLOOD ELEVATION= 2456.0 FT
START ELEVATION= 2451.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 51.8 MIN (5.5 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2453.0'	**EXFILTRATION**
			V= .0022 FPM over (SURFACE AREA - 15000 SF)
2	S	2453.0'	**24" CULVERT X 2**
			n=.012 L=50' S=.01'/' Ke=.5 Cc=.9 Cd=.6

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Culvert

POND 4 **STORM POND, VLY, 1.6"/HR TO 2.5' DEPTH**

Qin = 169.3 CFS @ 12.07 HRS, VOLUME= 15.86 AF
Qout= 167.2 CFS @ 12.09 HRS, VOLUME= 14.47 AF, ATTEN= 1%, LAG= 1.5 MIN
Qpri= .10 CFS @ 12.09 HRS, VOLUME= .05 AF
Qsec= 167.1 CFS @ 12.09 HRS, VOLUME= 14.43 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2264.0	0	0	0
2265.0	10000	5000	5000
2270.0	14000	60000	65000

STOR-IND METHOD
PEAK STORAGE = 76582 CF
PEAK ELEVATION= 2271.0 FT
FLOOD ELEVATION= 2271.0 FT
START ELEVATION= 2264.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 41.8 MIN (14.47 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2267.5'	**EXFILTRATION**
			V= .0022 FPM over (SURFACE AREA - 12000 SF)
2	S	2269.5'	**65' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 6 **STORM POND, VLY, ASSUMED NO PERC**

Qin = 104.3 CFS @ 11.97 HRS, VOLUME= 5.60 AF
Qout= 66.60 CFS @ 12.08 HRS, VOLUME= 5.54 AF, ATTEN= 36%, LAG= 6.8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2464.9	0	0	0
2465.0	4200	210	210
2468.0	8800	19500	19710
2469.0	9800	9300	29010

STOR-IND METHOD
PEAK STORAGE = 43871 CF
PEAK ELEVATION= 2470.6 FT
FLOOD ELEVATION= 2471.0 FT
START ELEVATION= 2464.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 14 MIN (5.54 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2465.0'	**24" CULVERT X 2**
			n=.012 L=50' S=.005'/' Ke=.5 Cc=.9 Cd=.6

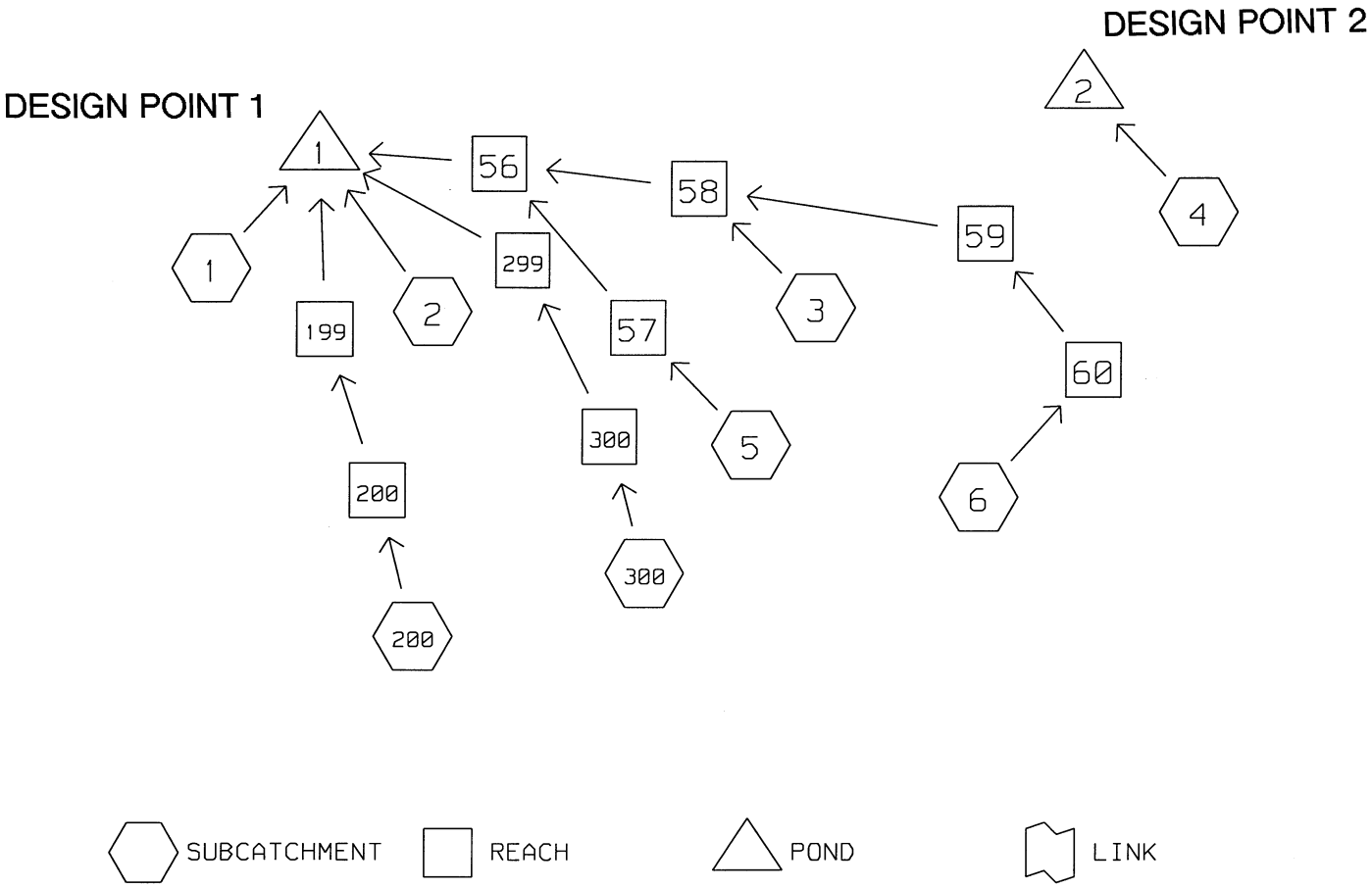
WILDACRES RESORT

And

HIGHMOUNT GOLF CLUB

PRE-DEVELOPMENT

WATERSHED ROUTING ==========



1 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 3.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--				WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	44.70	58.7	1%98	0%98	1%74	97%70	70	-	21.62	12.62	3.29
2	111.80	38.2	1%98 88%70	1%98	0%98	9%74	71	-	79.36	12.33	8.79
3	47.53	36.2	1%98 87%70	3%98	1%98	9%74	72	-	37.36	12.30	3.95
4	86.90	64.2	1%98 89%70	1%98	1%98	8%74	71	-	42.22	12.69	6.74
5	22.96	42.4	2%98	5%74	92%70		71	-	15.08	12.39	1.80
6	39.80	47.6	3%98	1%98	20%74	76%70	72	-	25.68	12.45	3.29
200	100.00	10.4	100%72				72	-	155.7	11.99	8.42
300	100.00	10.4	100%72				72	-	155.7	11.99	8.42

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
56	-	10.0	3.0	.20	.20	.040	2300	.0280	4.5	8.6	47.45
57	-	10.0	1.0	.10	.10	.050	1030	.1890	4.7	3.7	14.76
58	-	10.0	3.0	.20	.20	.040	920	.0320	4.4	3.5	37.74
59	-	10.0	1.0	.10	.10	.050	1875	.1200	2.1	14.9	2.07
60	12.0	-	-	-	-	.020	40	.0080	2.8	.2	2.07
199	-	10.0	1.0	.10	.10	.050	2820	.1800	8.4	5.6	119.8
200	36.0	-	-	-	-	.020	47	.0940	21.1	0.0	132.9
299	-	10.0	1.0	.10	.10	.050	3580	.1470	2.8	21.6	3.83
300	14.0	-	-	-	-	.020	50	.0120	4.0	.2	3.83

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	202.6	202.6			0	0.0	N
2	0.0	0.0	0.0	0.00	42.22	42.22			0	0.0	N

10 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--				WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	44.70	58.7	1%98	0%98	1%74	97%70	70	-	66.59	12.57	9.40
2	111.80	38.2	1%98 88%70	1%98	0%98	9%74	71	-	235.0	12.31	24.51
3	47.53	36.2	1%98 87%70	3%98	1%98	9%74	72	-	107.0	12.28	10.77
4	86.90	64.2	1%98 89%70	1%98	1%98	8%74	71	-	126.2	12.64	18.86
5	22.96	42.4	2%98	5%74	92%70		71	-	44.76	12.36	5.03
6	39.80	47.6	3%98	1%98	20%74	76%70	72	-	74.31	12.43	8.99
200	100.00	10.4	100%72				72	-	425.4	11.98	22.81
300	100.00	10.4	100%72				72	-	425.4	11.98	22.81

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
56	-	10.0	3.0	.20	.20	.040	2300	.0280	6.1	6.3	142.7
57	-	10.0	1.0	.10	.10	.050	1030	.1890	6.5	2.6	44.09
58	-	10.0	3.0	.20	.20	.040	920	.0320	6.0	2.6	106.1
59	-	10.0	1.0	.10	.10	.050	1875	.1200	2.1	14.9	2.07
60	12.0	-	-	-	-	.020	40	.0080	3.0	.2	2.13
199	-	10.0	1.0	.10	.10	.050	2820	.1800	8.7	5.4	133.1
200	36.0	-	-	-	-	.020	47	.0940	21.3	0.0	136.6
299	-	10.0	1.0	.10	.10	.050	3580	.1470	2.8	21.6	3.83
300	14.0	-	-	-	-	.020	50	.0120	4.1	.2	3.83

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	535.3	535.3			0	0.0	N
2	0.0	0.0	0.0	0.00	126.2	126.2			0	0.0	N

25 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.30 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--				WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	44.70	58.7	1%98	0%98	1%74	97%70	70	-	72.56	12.57	10.22
2	111.80	38.2	1%98 88%70	1%98	0%98	9%74	71	-	255.4	12.31	26.58
3	47.53	36.2	1%98 87%70	3%98	1%98	9%74	72	-	116.1	12.28	11.66
4	86.90	64.2	1%98 89%70	1%98	1%98	8%74	71	-	137.2	12.64	20.47
5	22.96	42.4	2%98	5%74	92%70		71	-	48.67	12.36	5.45
6	39.80	47.6	3%98	1%98	20%74	76%70	72	-	80.66	12.42	9.73
200	100.00	10.4	100%72				72	-	460.2	11.98	24.68
300	100.00	10.4	100%72				72	-	460.2	11.98	24.68

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
56	-	10.0	3.0	.20	.20	.040	2300	.0280	6.3	6.1	155.5
57	-	10.0	1.0	.10	.10	.050	1030	.1890	6.7	2.6	47.98
58	-	10.0	3.0	.20	.20	.040	920	.0320	6.1	2.5	115.0
59	-	10.0	1.0	.10	.10	.050	1875	.1200	2.1	14.9	2.07
60	12.0	-	-	-	-	.020	40	.0080	3.0	.2	2.07
199	-	10.0	1.0	.10	.10	.050	2820	.1800	8.7	5.4	132.9
200	36.0	-	-	-	-	.020	47	.0940	20.6	0.0	132.9
299	-	10.0	1.0	.10	.10	.050	3580	.1470	2.8	21.6	3.83
300	14.0	-	-	-	-	.020	50	.0120	4.0	.2	3.83

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	571.9	571.9			0	0.0	N
2	0.0	0.0	0.0	0.00	137.2	137.2			0	0.0	N

SUBCATCHMENT 1

PEAK= 72.56 CFS @ 12.57 HRS, VOLUME= 10.22 AF

ACRES	CN	
.51	98	ROAD
.03	98	BUILDINGS
.58	74	C SOIL, LAWN, GOOD CONDITION
43.58	70	C SOIL, FOREST, GOOD CONDITION
44.70	70	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	56.2
Forest w/Heavy Litter Kv=2.5 L=2980' s=.125 '/' V=.88 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.4
Short Grass Pasture Kv=7 L=350' s=.125 '/' V=2.47 fps		
	Total Length= 3340 ft Total Tc=	58.7

SUBCATCHMENT 2

PEAK= 255.4 CFS @ 12.31 HRS, VOLUME= 26.58 AF

ACRES	CN	
1.59	98	ROAD
1.57	98	DRIVEWAY
.42	98	BUILDINGS
10.11	74	C SOIL, LAWN, GOOD CONDITION
98.11	70	C SOIL, FOREST, GOOD CONDITION
111.80	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	35.8
Forest w/Heavy Litter Kv=2.5 L=2370' s=.195 '/' V=1.1 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.3
Short Grass Pasture Kv=7 L=430' s=.195 '/' V=3.09 fps		
	Total Length= 2810 ft Total Tc=	38.2

SUBCATCHMENT 3

PEAK= 116.1 CFS @ 12.28 HRS, VOLUME= 11.66 AF

ACRES	CN	
.44	98	ROAD
1.33	98	DRIVEWAY
.30	98	BUILDINGS
4.22	74	C SOIL, LAWN, GOOD CONDITION
41.24	70	C SOIL, FOREST, GOOD CONDITION
47.53	72	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.7
Short Grass Pasture Kv=7 L=100' s=.115 '/' V=2.37 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	35.4
Forest w/Heavy Litter Kv=2.5 L=1800' s=.115 '/' V=.85 fps		
	Total Length= 1910 ft Total Tc=	36.2

SUBCATCHMENT 4

PEAK= 137.2 CFS @ 12.64 HRS, VOLUME= 20.47 AF

ACRES	CN	
.97	98	ROAD
1.01	98	DRIVEWAY
.70	98	BUILDINGS
7.29	74	C SOIL, LAWN, GOOD CONDITION
76.93	70	C SOIL, FOREST, GOOD CONDITION
86.90	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	25.6
Short Grass Pasture Kv=7 L=2500' s=.054 '/' V=1.63 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	38.5
Short Grass Pasture Kv=7 L=2400' s=.022 '/' V=1.04 fps		
	Total Length= 4920 ft Total Tc=	64.2

SUBCATCHMENT 5

PEAK= 48.67 CFS @ 12.36 HRS, VOLUME= 5.45 AF

ACRES	CN	
.57	98	ROAD
1.20	74	C SOIL, GRASS, GOOD CONDITION
21.19	70	C SOIL, FOREST, GOOD CONDITION
22.96	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	27.4
Forest w/Heavy Litter Kv=2.5 L=1400' s=.116 '/' V=.85 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.4
Short Grass Pasture Kv=7 L=200' s=.116 '/' V=2.38 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	13.6
Short Grass Pasture Kv=7 L=1250' s=.048 '/' V=1.53 fps		
	Total Length= 2850 ft Total Tc=	42.4

SUBCATCHMENT 6

PEAK= 80.66 CFS @ 12.42 HRS, VOLUME= 9.73 AF

ACRES	CN	
1.14	98	ROADS
.34	98	BUILDINGS
8.11	74	C SOIL, LAWN, GOOD CONDITION
30.21	70	C SOIL, FOREST, GOOD CONDITION
39.80	72	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	43.6
Forest w/Heavy Litter Kv=2.5 L=1950' s=.089 '/' V=.75 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.0
Short Grass Pasture Kv=7 L=500' s=.089 '/' V=2.09 fps		
	Total Length= 2450 ft Total Tc=	47.6

SUBCATCHMENT 200 ASSUME MAX DISCHARGE

PEAK= 460.2 CFS @ 11.98 HRS, VOLUME= 24.68 AF

ACRES	CN	
100.00	72	ASSUMED AREA

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
CURVE NUMBER (LAG) METHOD	**Segment ID:**	10.4
L=1000' s=.15 '/'		

SUBCATCHMENT 300 ASSUME MAX AREA

PEAK= 460.2 CFS @ 11.98 HRS, VOLUME= 24.68 AF

ACRES	CN	
100.00	72	ASSUMED AREA

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
CURVE NUMBER (LAG) METHOD	**Segment ID:**	10.4

L=1000' s=.15 '/'

REACH 56 **OVERLAND FLOW**

Qin = 161.7 CFS @ 12.38 HRS, VOLUME= 18.62 AF
Qout= 155.5 CFS @ 12.56 HRS, VOLUME= 18.40 AF, ATTEN= 4%, LAG= 10.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	8.83
.60	7.80	29.89
.90	13.05	62.76
1.29	21.22	124.46
1.80	34.20	240.89
2.40	52.80	436.10
3.00	75.00	701.99

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 2300 FT
SLOPE= .028 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.42 FT
PEAK VELOCITY= 6.3 FPS
TRAVEL TIME = 6.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 57 **OVERLAND FLOW**

Qin = 48.67 CFS @ 12.36 HRS, VOLUME= 5.45 AF
Qout= 47.98 CFS @ 12.44 HRS, VOLUME= 5.43 AF, ATTEN= 1%, LAG= 4.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.89
.20	2.40	9.56
.30	3.90	19.64
.43	6.15	37.93
.60	9.60	71.23
.80	14.40	125.22
1.00	20.00	196.77

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1030 FT
SLOPE= .189 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .48 FT
PEAK VELOCITY= 6.7 FPS
TRAVEL TIME = 2.6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 58 **OVERLAND FLOW**

Qin = 118.2 CFS @ 12.28 HRS, VOLUME= 13.25 AF
Qout= 115.0 CFS @ 12.36 HRS, VOLUME= 13.19 AF, ATTEN= 3%, LAG= 4.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	9.44
.60	7.80	31.95
.90	13.05	67.09
1.29	21.22	133.05
1.80	34.20	257.52
2.40	52.80	466.21
3.00	75.00	750.46

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 920 FT
SLOPE= .032 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.20 FT
PEAK VELOCITY= 6.1 FPS
TRAVEL TIME = 2.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 59 **OVERLAND FLOW**

Qin = 2.07 CFS @ 11.00 HRS, VOLUME= 1.67 AF
Qout= 2.07 CFS @ 19.60 HRS, VOLUME= 1.59 AF, ATTEN= 0%, LAG= 516.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.30
.20	2.40	7.62
.30	3.90	15.65
.43	6.15	30.22
.60	9.60	56.76
.80	14.40	99.78
1.00	20.00	156.79

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1875 FT
SLOPE= .12 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .09 FT
PEAK VELOCITY= 2.1 FPS
TRAVEL TIME = 14.9 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 60 **EXISTING CULVERT**

Qin = 80.66 CFS @ 12.42 HRS, VOLUME= 9.73 AF
Qout= 2.07 CFS @ 11.00 HRS, VOLUME= 1.67 AF, ATTEN= 97%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	.04	.04
.20	.11	.18
.30	.20	.41
.70	.59	1.73
.80	.67	2.02
.90	.74	2.21
.94	.77	2.23
.97	.78	2.21
1.00	.79	2.07

12" PIPE

n= .02
LENGTH= 40 FT
SLOPE= .008 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.00 FT
PEAK VELOCITY= 3.0 FPS
TRAVEL TIME = .2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 199 **OVERLAND FLOW**

Qin = 132.9 CFS @ 11.90 HRS, VOLUME= 24.68 AF
Qout= 132.9 CFS @ 13.00 HRS, VOLUME= 24.51 AF, ATTEN= 0%, LAG= 66.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.82
.20	2.40	9.33
.30	3.90	19.16
.43	6.15	37.01
.60	9.60	69.51
.80	14.40	122.20
1.00	20.00	192.03

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 2820 FT
SLOPE= .18 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .83 FT
PEAK VELOCITY= 8.7 FPS
TRAVEL TIME = 5.4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 200 **ESISTING CULVERT, ASSUME MAX DISCHARGE**

Qin = 460.2 CFS @ 11.98 HRS, VOLUME= 24.68 AF
Qout= 132.9 CFS @ 11.90 HRS, VOLUME= 24.68 AF, ATTEN= 71%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	.37	2.78
.60	1.01	11.64
.90	1.78	26.03
2.10	5.29	111.29
2.40	6.06	129.93
2.70	6.70	141.67
2.82	6.90	142.98
2.91	7.01	141.66
3.00	7.07	132.92

36" PIPE
n= .02
LENGTH= 47 FT
SLOPE= .094 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 3.00 FT
PEAK VELOCITY= 20.6 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 299 **OVERLAND FLOW**

Qin = 3.83 CFS @ 10.20 HRS, VOLUME= 3.19 AF
Qout= 3.83 CFS @ 18.30 HRS, VOLUME= 2.97 AF, ATTEN= 0%, LAG= 486.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.55
.20	2.40	8.43
.30	3.90	17.32
.43	6.15	33.45
.60	9.60	62.82
.80	14.40	110.44
1.00	20.00	173.53

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 3580 FT
SLOPE= .147 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .12 FT
PEAK VELOCITY= 2.8 FPS
TRAVEL TIME = 21.6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 300 **EXISTING CULVET, ASSUME MAX DISCHARGE**

Qin = 460.2 CFS @ 11.98 HRS, VOLUME= 24.68 AF
Qout= 3.83 CFS @ 10.20 HRS, VOLUME= 3.19 AF, ATTEN= 99%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.12	.06	.08
.23	.15	.34
.35	.27	.75
.82	.80	3.20
.93	.92	3.74
1.05	1.01	4.08
1.10	1.04	4.12
1.13	1.06	4.08
1.17	1.07	3.83

14" PIPE
n= .02
LENGTH= 50 FT
SLOPE= .012 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.17 FT
PEAK VELOCITY= 4.0 FPS
TRAVEL TIME = .2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

POND 1

Not described

Qin = 571.9 CFS @ 12.44 HRS, VOLUME= 82.68 AF
Qout= 571.9 CFS @ 12.44 HRS, VOLUME= 82.68 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 2

Not described

Qin = 137.2 CFS @ 12.64 HRS, VOLUME= 20.47 AF
Qout= 137.2 CFS @ 12.64 HRS, VOLUME= 20.47 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

100 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 8.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--				WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	44.70	58.7	1%98	0%98	1%74	97%70	70	-	107.7	12.56	15.01
2	111.80	38.2	1%98 88%70	1%98	0%98	9%74	71	-	375.1	12.30	38.69
3	47.53	36.2	1%98 87%70	3%98	1%98	9%74	72	-	169.2	12.27	16.85
4	86.90	64.2	1%98 89%70	1%98	1%98	8%74	71	-	202.1	12.63	29.88
5	22.96	42.4	2%98	5%74	92%70		71	-	71.88	12.35	7.94
6	39.80	47.6	3%98	1%98	20%74	76%70	72	-	117.7	12.42	14.08
200	100.00	10.4	100%72				72	-	661.9	11.97	35.57
300	100.00	10.4	100%72				72	-	661.9	11.97	35.57

REACH ROUTING BY STOR-IND+TRANS METHOD

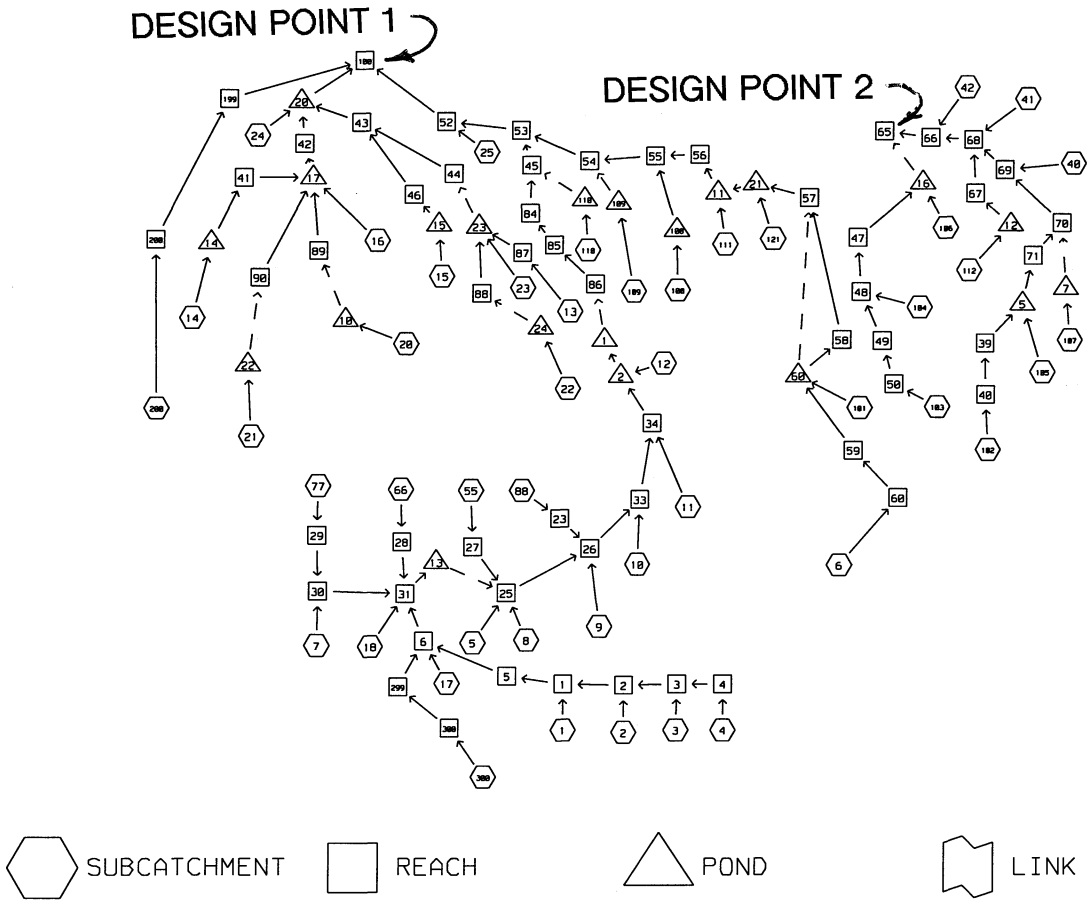
REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
56	-	10.0	3.0	.20	.20	.040	2300	.0280	6.9	5.5	227.3
57	-	10.0	1.0	.10	.10	.050	1030	.1890	7.4	2.3	70.46
58	-	10.0	3.0	.20	.20	.040	920	.0320	6.8	2.3	167.9
59	-	10.0	1.0	.10	.10	.050	1875	.1200	2.1	14.9	2.07
60	12.0	-	-	-	-	.020	40	.0080	3.0	.2	2.07
199	-	10.0	1.0	.10	.10	.050	2820	.1800	8.7	5.4	132.9
200	36.0	-	-	-	-	.020	47	.0940	19.5	0.0	132.9
299	-	10.0	1.0	.10	.10	.050	3580	.1470	2.8	21.6	3.83
300	14.0	-	-	-	-	.020	50	.0120	3.6	.2	3.83

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	786.4	786.4			0	0.0	N
2	0.0	0.0	0.0	0.00	202.1	202.1			0	0.0	N

POST-DEVELOPMENT

WATERSHED ROUTING ==========



1 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 3.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	1.69	1.4	3%98 28%98 69%74	81	-	4.96	11.86	.22
2	.34	.4	29%98 65%98 6%74	97	-	1.57	11.82	.07
3	.34	.4	29%98 65%98 6%74	97	-	1.57	11.82	.07
4	1.49	2.3	12%98 32%98 56%74	84	-	5.08	11.87	.22
5	5.82	7.3	8%98 6%98 28%70 58%74	76	-	11.82	11.93	.60
6	29.71	36.3	2%98 2%98 1%98 23%74 73%70	72	-	23.30	12.31	2.47
7	7.23	6.7	8%98 63%74 29%70	75	-	14.40	11.92	.71
8	2.07	4.7	3%98 19%98 78%74	79	-	5.59	11.90	.25
9	2.60	3.4	2%98 18%98 35%98 46%74	87	-	9.91	11.88	.43
10	5.35	3.7	2%98 18%98 24%98 57%74	84	-	18.29	11.89	.79
11	2.82	4.0	6%98 93%74 1%70	76	-	6.80	11.89	.29
12	22.35	32.7	2%98 1%98 74%74 23%70	74	-	21.39	12.25	2.07
13	7.76	12.6	2%98 1%98 1%98 26%74 70%70	72	-	11.35	12.01	.65
14	5.92	8.1	77%74 23%70	73	-	9.92	11.95	.53
15	9.92	8.2	4%98 1%98 3%98 83%74 9%70	75	-	18.49	11.95	.98
16	7.00	5.9	3%98 1%98 85%74 10%70	75	-	14.61	11.91	.69
17	4.76	7.4	50%74 25%70 5%98 20%39	67	-	5.47	11.95	.30
18	8.17	9.3	3%98 78%74 20%70	74	-	14.40	11.97	.77
20	14.80	4.5	3%98 8%98 29%70 60%74	75	-	33.30	11.90	1.46
21	19.50	12.1	2%98 45%74 53%70	72	-	29.04	12.00	1.64
22	12.70	6.6	2%98 89%74 6%70 2%98 1%98	75	-	25.44	11.92	1.25
23	4.51	17.2	53%70 47%74	72	-	5.54	12.07	.38

24	7.35	9.4	7%74	93%70			70	-	10.29	11.98	.55
25	17.54	33.1	0%98	3%98	7%74	90%70	71	-	13.67	12.26	1.38
40	19.05	34.7	5%98	8%98	4%98	47%74 36%70	77	-	20.57	12.27	2.05
41	8.26	8.0	3%98	2%98	14%74	81%70	72	-	13.09	11.95	.70
42	2.11	9.0	23%74	77%70			71	-	3.15	11.97	.17
55	.10	2.3	100%98				98	-	.49	11.87	.02
66	.20	1.6	45%98	55%74			85	-	.69	11.86	.03
77	.09	.7	100%98				98	-	.42	11.82	.02
88	.14	4.6	100%98				98	-	.68	11.89	.03
101	4.37	.9	3%98	1%98	47%74	50%70	73	-	8.65	11.86	.39
102	2.20	1.5	12%98	8%98	57%74	23%70	78	-	5.73	11.87	.25
103	1.94	2.3	32%98	17%98	9%98	34%74 8%70	88	-	7.55	11.87	.33
104	3.03	2.6	15%98	4%98	16%98	65%74	82	-	9.64	11.88	.41
105	21.06	15.1	1%98	3%98	4%98	15%98 67%74 10%70	79	-	40.75	12.02	2.51
106	14.30	16.4	2%98	3%98	3%98	80%74 11%70	76	-	22.68	12.04	1.48
107	5.80	15.8	65%74	35%70			73	-	7.95	12.04	.51
108	17.25	16.2	3%98	1%98	58%74	38%70	73	-	23.29	12.05	1.53
109	5.53	9.5	74%74	26%70			73	-	9.22	11.98	.49
110	6.63	8.1	77%74	21%70	2%98	1%98	74	-	11.73	11.95	.62
111	13.31	19.3	1%98	0%0	0%98	47%74 51%70	72	-	15.62	12.09	1.12
112	7.18	8.7	94%74	6%70			74	-	12.69	11.96	.67
121	17.81	24.2	2%98	4%98	5%98	42%74 48%70	74	-	20.69	12.14	1.66
200	100.00	42.8	100%74				74	-	79.00	12.38	9.22
300	42.20	52.3	100%74				74	-	28.88	12.51	3.87

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	30.0	-	-	-	-	.012	350	.0100	7.9	.7	11.93
2	24.0	-	-	-	-	.012	190	.0100	7.0	.4	7.47
3	24.0	-	-	-	-	.012	30	.0100	6.6	.1	6.21
4	18.0	-	-	-	-	.012	200	.0100	6.4	.5	4.87
5	-	3.0	2.0	.33	.33	.040	330	.3200	8.9	.6	11.38
6	36.0	-	-	-	-	.012	320	.0100	8.6	.6	17.16
23	12.0	-	-	-	-	.012	20	.0100	3.7	.1	.67
25	36.0	-	-	-	-	.012	380	.0100	8.4	.8	16.23
26	48.0	-	-	-	-	.012	570	.0060	7.5	1.3	22.94
27	12.0	-	-	-	-	.012	20	.0100	3.4	.1	.48
28	18.0	-	-	-	-	.012	20	.0050	2.8	.1	.68
29	18.0	-	-	-	-	.012	20	.0050	2.5	.1	.41
30	36.0	-	-	-	-	.012	560	.0050	6.2	1.5	13.19
31	48.0	-	-	-	-	.012	370	.0120	11.6	.5	43.92
33	48.0	-	-	-	-	.012	400	.0080	9.7	.7	37.30
34	48.0	-	-	-	-	.012	220	.0090	10.5	.4	42.37
39	-	10.0	1.0	.25	.25	.030	480	.0800	3.8	2.1	4.83
40	18.0	-	-	-	-	.012	50	.0200	8.5	.1	5.70
41	-	10.0	1.0	.10	.10	.050	130	.3000	0.0	0.0	0.00
42	-	10.0	1.0	.10	.10	.050	450	.2900	3.5	2.1	4.24
43	-	5.0	2.0	.33	.33	.040	600	.0750	5.6	1.8	16.83
44	-	5.0	2.0	.33	.33	.040	500	.0900	5.5	1.5	13.97
45	-	8.0	2.0	.33	.33	.040	175	.2280	6.2	.5	11.72
46	-	10.0	1.0	.10	.10	.050	280	.2500	3.7	1.3	4.83
47	-	10.0	1.0	.10	.10	.040	900	.0940	4.2	3.5	13.23

48	30.0	-	-	-	-	.012	75	.0080	8.0	.2	16.71
49	-	3.0	2.0	.33	.33	.040	140	.1400	5.8	.4	7.27
50	18.0	-	-	-	-	.012	50	.0200	9.1	.1	7.51
52	-	10.0	2.5	.20	.20	.040	1400	.0321	3.7	6.3	23.04
53	-	10.0	3.0	.20	.20	.040	1400	.0320	3.7	6.3	21.36
54	-	10.0	3.0	.20	.20	.040	750	.0270	2.9	4.3	11.70
55	-	10.0	3.0	.20	.20	.040	200	.0250	2.9	1.2	12.31
56	-	10.0	3.0	.20	.20	.040	1000	.0150	2.4	6.9	12.26
57	-	10.0	1.0	.10	.10	.050	1300	.1340	2.2	9.8	2.44
58	30.0	-	-	-	-	.012	50	.0100	5.1	.2	2.44
59	-	5.0	3.0	.33	.33	.040	430	.0580	3.6	2.0	2.08
60	12.0	-	-	-	-	.020	40	.0080	2.9	.2	2.07
65	-	-	-	-	-	-	-	-	0.0	0.0	21.10 N
66	-	10.0	2.0	.20	.20	.040	250	.0800	5.0	.8	21.10
67	-	10.0	1.0	.10	.10	.050	400	.1250	0.0	0.0	0.00
68	-	10.0	2.0	.20	.20	.040	350	.0280	3.5	1.7	20.91
69	-	10.0	2.0	.20	.20	.040	1300	.0270	3.3	6.5	19.45
70	-	10.0	1.0	.10	.10	.040	320	.0940	0.0	0.0	0.00
71	-	10.0	1.0	.10	.10	.040	250	.0600	0.0	0.0	0.00
84	-	8.0	2.0	.33	.33	.040	600	.1700	5.7	1.8	11.27
85	54.0	-	-	-	-	.012	50	.0080	6.8	.1	11.30
86	-	3.0	2.0	.33	.33	.040	1000	.0750	5.2	3.2	11.58
87	-	3.0	2.0	.33	.33	.040	630	.1000	5.6	1.9	9.93
88	-	50.0	2.0	.25	.25	.040	300	.2300	0.0	0.0	0.00
89	-	10.0	1.0	.10	.10	.040	550	.1700	0.0	0.0	0.00
90	-	10.0	1.0	.10	.10	.040	750	.1500	4.4	2.8	8.99
100	-	-	-	-	-	-	-	-	0.0	0.0	96.70 N
199	-	10.0	1.0	.10	.10	.050	2820	.1800	7.5	6.3	76.03

200	36.0	-	-	-	-	.020	47	.0940	20.0	0.0	78.98
299	-	10.0	1.0	.10	.10	.050	750	.1500	2.8	4.5	3.84
300	14.0	-	-	-	-	.020	50	.0120	4.0	.2	3.83

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)
1	1996.0	2001.0	1998.7	.81	28.68	12.44	.66	11.79	57	25.5
2	2001.0	2006.0	2004.9	1.59	47.55	30.34	1.66	28.68	36	21.7
5	1937.9	1942.0	1938.9	2.76	44.10	0.00			100	0.0
7	1919.0	1926.0	1921.1	.23	7.95	.93	.93	0.00	88	48.6
10	1979.0	1986.0	1982.8	1.45	33.30	.08	.08	0.00	100	486.1
11	1894.0	1901.0	1898.4	1.13	39.02	15.19			61	24.6
12	1894.0	1901.0	1896.8	.33	12.69	.97	.97	0.00	92	63.0
13	2064.0	2074.8	2070.1	1.36	43.92	8.91			80	36.0
14	1914.0	1921.0	1918.0	.53	9.92	0.00			100	0.0
15	1879.0	1886.0	1883.9	.41	18.49	5.44	.54	4.89	71	14.1
16	1829.0	1836.0	1832.3	1.15	35.07	2.84	2.84	0.00	92	71.7
17	1874.0	1881.0	1879.1	.74	14.61	4.50			69	60.6
20	1749.0	1756.0	1750.7	.18	19.02	17.98	17.06	.93	5	3.8
21	1899.0	1906.0	1904.3	.25	22.40	21.96			2	.3
22	1994.0	2001.0	1998.6	.65	29.04	11.64	.26	11.38	60	13.8
23	1849.0	1856.0	1852.9	.16	15.47	17.79	.37	17.43	0	2.8
24	1914.0	1921.0	1919.3	.59	25.44	5.59			78	17.7
60	1994.0	2011.0	2001.9	.21	10.17	2.44	2.44	0.00	76	115.3
108	1799.0	1806.0	1803.4	1.01	23.29	1.56			93	110.5
109	1774.0	1781.0	1779.3	.27	9.22	1.05			89	39.6
110	1794.0	1801.0	1799.2	.29	11.73	1.84	.61	1.23	84	24.9

10 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	1.69	1.4	3%98 28%98 69%74	81	-	10.87	11.86	.49
2	.34	.4	29%98 65%98 6%74	97	-	2.74	11.82	.13
3	.34	.4	29%98 65%98 6%74	97	-	2.74	11.82	.13
4	1.49	2.3	12%98 32%98 56%74	84	-	10.55	11.87	.47
5	5.82	7.3	8%98 6%98 28%70 58%74	76	-	29.68	11.92	1.49
6	29.71	36.3	2%98 2%98 1%98 23%74 73%70	72	-	66.77	12.28	6.73
7	7.23	6.7	8%98 63%74 29%70	75	-	36.96	11.91	1.80
8	2.07	4.7	3%98 19%98 78%74	79	-	12.94	11.89	.58
9	2.60	3.4	2%98 18%98 35%98 46%74	87	-	19.66	11.88	.86
10	5.35	3.7	2%98 18%98 24%98 57%74	84	-	38.24	11.88	1.67
11	2.82	4.0	6%98 93%74 1%70	76	-	16.69	11.89	.72
12	22.35	32.7	2%98 1%98 74%74 23%70	74	-	57.86	12.23	5.39
13	7.76	12.6	2%98 1%98 1%98 26%74 70%70	72	-	31.44	12.00	1.77
14	5.92	8.1	77%74 23%70	73	-	26.57	11.94	1.39
15	9.92	8.2	4%98 1%98 3%98 83%74 9%70	75	-	47.09	11.94	2.48
16	7.00	5.9	3%98 1%98 85%74 10%70	75	-	37.33	11.91	1.75
17	4.76	7.4	50%74 25%70 5%98 20%39	67	-	17.94	11.93	.92
18	8.17	9.3	3%98 78%74 20%70	74	-	37.26	11.96	1.98
20	14.80	4.5	3%98 8%98 29%70 60%74	75	-	84.00	11.89	3.70
21	19.50	12.1	2%98 45%74 53%70	72	-	80.15	11.99	4.45
22	12.70	6.6	2%98 89%74 6%70 2%98 1%98	75	-	65.27	11.91	3.17
23	4.51	17.2	53%70 47%74	72	-	15.58	12.05	1.03

24	7.35	9.4	7%74	93%70			70	-	29.60	11.97	1.57
25	17.54	33.1	0%98	3%98	7%74	90%70	71	-	40.71	12.24	3.85
40	19.05	34.7	5%98	8%98	4%98	47%74 36%70	77	-	51.54	12.25	5.01
41	8.26	8.0	3%98	2%98	14%74	81%70	72	-	36.07	11.94	1.89
42	2.11	9.0	23%74	77%70			71	-	8.80	11.96	.47
55	.10	2.3	100%98				98	-	.84	11.87	.04
66	.20	1.6	45%98	55%74			85	-	1.40	11.86	.06
77	.09	.7	100%98				98	-	.72	11.82	.03
88	.14	4.6	100%98				98	-	1.17	11.89	.05
101	4.37	.9	3%98	1%98	47%74	50%70	73	-	22.42	11.85	1.03
102	2.20	1.5	12%98	8%98	57%74	23%70	78	-	13.29	11.86	.60
103	1.94	2.3	32%98	17%98	9%98	34%74 8%70	88	-	14.71	11.87	.66
104	3.03	2.6	15%98	4%98	16%98	65%74	82	-	20.77	11.87	.90
105	21.06	15.1	1%98	3%98	4%98	15%98 67%74 10%70	79	-	96.18	12.02	5.85
106	14.30	16.4	2%98	3%98	3%98	80%74 11%70	76	-	57.49	12.03	3.67
107	5.80	15.8	65%74	35%70			73	-	21.73	12.03	1.36
108	17.25	16.2	3%98	1%98	58%74	38%70	73	-	63.73	12.03	4.05
109	5.53	9.5	74%74	26%70			73	-	24.47	11.97	1.30
110	6.63	8.1	77%74	21%70	2%98	1%98	74	-	30.68	11.94	1.61
111	13.31	19.3	1%98	0%0	0%98	47%74 51%70	72	-	43.77	12.08	3.03
112	7.18	8.7	94%74	6%70			74	-	32.85	11.95	1.74
121	17.81	24.2	2%98	4%98	5%98	42%74 48%70	74	-	55.56	12.13	4.31
200	100.00	42.8	100%74				74	-	214.5	12.36	24.07
300	42.20	52.3	100%74				74	-	78.66	12.48	10.13

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	30.0	-	-	-	-	.012	350	.0100	9.5	.6	24.78
2	24.0	-	-	-	-	.012	190	.0100	8.3	.4	14.77
3	24.0	-	-	-	-	.012	30	.0100	8.0	.1	12.56
4	18.0	-	-	-	-	.012	200	.0100	7.3	.5	10.21
5	-	3.0	2.0	.33	.33	.040	330	.3200	10.9	.5	24.15
6	36.0	-	-	-	-	.012	320	.0100	10.9	.5	43.32
23	12.0	-	-	-	-	.012	20	.0100	4.4	.1	1.16
25	36.0	-	-	-	-	.012	380	.0100	10.8	.6	40.20
26	48.0	-	-	-	-	.012	570	.0060	9.7	1.0	54.35
27	12.0	-	-	-	-	.012	20	.0100	3.9	.1	.83
28	18.0	-	-	-	-	.012	20	.0050	3.4	.1	1.40
29	18.0	-	-	-	-	.012	20	.0050	2.8	.1	.71
30	36.0	-	-	-	-	.012	560	.0050	7.8	1.2	33.71
31	48.0	-	-	-	-	.012	370	.0120	14.5	.4	111.7
33	48.0	-	-	-	-	.012	400	.0080	11.9	.6	85.64
34	48.0	-	-	-	-	.012	220	.0090	12.7	.3	98.88
39	-	10.0	1.0	.25	.25	.030	480	.0800	5.1	1.6	12.00
40	18.0	-	-	-	-	.012	50	.0200	10.1	.1	13.26
41	-	10.0	1.0	.10	.10	.050	130	.3000	3.3	.7	3.35
42	-	10.0	1.0	.10	.10	.050	450	.2900	9.2	.8	83.96
43	-	5.0	2.0	.33	.33	.040	600	.0750	8.5	1.2	76.22
44	-	5.0	2.0	.33	.33	.040	500	.0900	7.7	1.1	42.05
45	-	8.0	2.0	.33	.33	.040	175	.2280	12.6	.2	95.44
46	-	10.0	1.0	.10	.10	.050	280	.2500	7.4	.6	46.58
47	-	10.0	1.0	.10	.10	.040	900	.0940	5.4	2.8	27.56

48	30.0	-	-	-	-	.012	75	.0080	9.1	.1	34.83
49	-	3.0	2.0	.33	.33	.040	140	.1400	6.9	.3	14.41
50	18.0	-	-	-	-	.012	50	.0200	10.3	.1	14.65
52	-	10.0	2.5	.20	.20	.040	1400	.0321	7.2	3.2	213.8
53	-	10.0	3.0	.20	.20	.040	1400	.0320	7.0	3.3	192.4
54	-	10.0	3.0	.20	.20	.040	750	.0270	5.7	2.2	114.7
55	-	10.0	3.0	.20	.20	.040	200	.0250	5.6	.6	120.4
56	-	10.0	3.0	.20	.20	.040	1000	.0150	4.3	3.8	90.35
57	-	10.0	1.0	.10	.10	.050	1300	.1340	2.5	8.7	3.15
58	30.0	-	-	-	-	.012	50	.0100	5.4	.2	3.15
59	-	5.0	3.0	.33	.33	.040	430	.0580	3.6	2.0	2.11
60	12.0	-	-	-	-	.020	40	.0080	3.0	.2	2.17
65	-	-	-	-	-	-	-	-	0.0	0.0	89.54 N
66	-	10.0	2.0	.20	.20	.040	250	.0800	7.2	.6	68.47
67	-	10.0	1.0	.10	.10	.050	400	.1250	3.3	2.0	7.02
68	-	10.0	2.0	.20	.20	.040	350	.0280	5.0	1.2	67.91
69	-	10.0	2.0	.20	.20	.040	1300	.0270	4.7	4.6	59.09
70	-	10.0	1.0	.10	.10	.040	320	.0940	3.9	1.4	10.45
71	-	10.0	1.0	.10	.10	.040	250	.0600	0.0	0.0	0.00
84	-	8.0	2.0	.33	.33	.040	600	.1700	11.4	.9	91.78
85	54.0	-	-	-	-	.012	50	.0080	12.3	.1	94.64
86	-	3.0	2.0	.33	.33	.040	1000	.0750	9.4	1.8	94.75
87	-	3.0	2.0	.33	.33	.040	630	.1000	7.6	1.4	28.62
88	-	50.0	2.0	.25	.25	.040	300	.2300	0.0	0.0	0.00
89	-	10.0	1.0	.10	.10	.040	550	.1700	3.3	2.7	4.00
90	-	10.0	1.0	.10	.10	.040	750	.1500	8.0	1.6	68.31
100	-	-	-	-	-	-	-	-	0.0	0.0	389.0 N
199	-	10.0	1.0	.10	.10	.050	2820	.1800	8.7	5.4	132.9

200	36.0	-	-	-	-	.020	47	.0940	21.4	0.0	132.9
299	-	10.0	1.0	.10	.10	.050	750	.1500	2.8	4.5	3.83
300	14.0	-	-	-	-	.020	50	.0120	4.1	.2	3.83

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)
1	1996.0	2001.0	2000.0	1.31	112.9	107.9	1.38	106.6	4	6.9
2	2001.0	2006.0	2005.5	1.92	119.5	115.0	2.13	112.9	4	4.4
5	1937.9	1942.0	1940.1	6.44	103.0	0.00			100	0.0
7	1919.0	1926.0	1922.7	.49	21.73	13.13	1.15	11.99	40	11.4
10	1979.0	1986.0	1984.8	2.38	84.00	4.69	.67	4.02	94	61.9
11	1894.0	1901.0	1899.4	1.43	99.54	102.6			0	2.1
12	1894.0	1901.0	1899.7	.79	32.85	9.25	1.58	7.66	72	14.2
13	2064.0	2074.8	2072.0	2.10	111.7	78.42			30	6.1
14	1914.0	1921.0	1919.8	.80	26.57	3.32			87	29.5
15	1879.0	1886.0	1885.3	.54	47.09	46.68	.61	46.07	1	3.0
16	1829.0	1836.0	1834.9	2.27	82.15	34.68	3.72	30.96	58	14.5
17	1874.0	1881.0	1880.0	.89	78.64	80.58			0	2.3
20	1749.0	1756.0	1752.6	.51	172.6	172.8	171.6	1.24	0	1.4
21	1899.0	1906.0	1905.2	.30	58.42	57.49			2	1.3
22	1994.0	2001.0	2000.1	.90	80.15	74.96	.50	74.45	6	2.6
23	1849.0	1856.0	1853.7	.19	44.16	43.59	.41	43.18	1	1.4
24	1914.0	1921.0	1920.4	.73	65.27	64.59			1	1.9
60	1994.0	2011.0	2006.3	.64	24.49	3.15	3.15	0.00	87	84.0
108	1799.0	1806.0	1804.9	1.43	63.73	43.69			31	9.4
109	1774.0	1781.0	1780.5	.34	24.47	26.63			0	2.9
110	1794.0	1801.0	1800.4	.37	30.68	31.63	.72	30.91	0	3.7

25 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.30 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	1.69	1.4	3%98 28%98 69%74	81	-	11.59	11.86	.53
2	.34	.4	29%98 65%98 6%74	97	-	2.88	11.82	.14
3	.34	.4	29%98 65%98 6%74	97	-	2.88	11.82	.14
4	1.49	2.3	12%98 32%98 56%74	84	-	11.21	11.87	.50
5	5.82	7.3	8%98 6%98 28%70 58%74	76	-	31.93	11.92	1.61
6	29.71	36.3	2%98 2%98 1%98 23%74 73%70	72	-	72.44	12.28	7.29
7	7.23	6.7	8%98 63%74 29%70	75	-	39.83	11.91	1.94
8	2.07	4.7	3%98 19%98 78%74	79	-	13.85	11.89	.62
9	2.60	3.4	2%98 18%98 35%98 46%74	87	-	20.83	11.88	.91
10	5.35	3.7	2%98 18%98 24%98 57%74	84	-	40.65	11.88	1.78
11	2.82	4.0	6%98 93%74 1%70	76	-	17.94	11.89	.78
12	22.35	32.7	2%98 1%98 74%74 23%70	74	-	62.55	12.23	5.82
13	7.76	12.6	2%98 1%98 1%98 26%74 70%70	72	-	34.03	12.00	1.91
14	5.92	8.1	77%74 23%70	73	-	28.73	11.94	1.51
15	9.92	8.2	4%98 1%98 3%98 83%74 9%70	75	-	50.75	11.94	2.67
16	7.00	5.9	3%98 1%98 85%74 10%70	75	-	40.21	11.91	1.88
17	4.76	7.4	50%74 25%70 5%98 20%39	67	-	19.61	11.93	1.00
18	8.17	9.3	3%98 78%74 20%70	74	-	40.18	11.96	2.14
20	14.80	4.5	3%98 8%98 29%70 60%74	75	-	90.41	11.89	3.98
21	19.50	12.1	2%98 45%74 53%70	72	-	86.75	11.99	4.81
22	12.70	6.6	2%98 89%74 6%70 2%98 1%98	75	-	70.33	11.91	3.41
23	4.51	17.2	53%70 47%74	72	-	16.89	12.05	1.11

24	7.35	9.4	7%74	93%70			70	-	32.13	11.97	1.71
25	17.54	33.1	0%98	3%98	7%74	90%70	71	-	44.25	12.24	4.18
40	19.05	34.7	5%98	8%98	4%98	47%74 36%70	77	-	55.46	12.25	5.38
41	8.26	8.0	3%98	2%98	14%74	81%70	72	-	39.06	11.94	2.04
42	2.11	9.0	23%74	77%70			71	-	9.53	11.96	.51
55	.10	2.3	100%98				98	-	.88	11.87	.04
66	.20	1.6	45%98	55%74			85	-	1.49	11.86	.07
77	.09	.7	100%98				98	-	.75	11.82	.04
88	.14	4.6	100%98				98	-	1.23	11.89	.06
101	4.37	.9	3%98	1%98	47%74	50%70	73	-	24.18	11.85	1.11
102	2.20	1.5	12%98	8%98	57%74	23%70	78	-	14.23	11.86	.64
103	1.94	2.3	32%98	17%98	9%98	34%74 8%70	88	-	15.56	11.87	.69
104	3.03	2.6	15%98	4%98	16%98	65%74	82	-	22.13	11.87	.97
105	21.06	15.1	1%98	3%98	4%98	15%98 67%74 10%70	79	-	103.1	12.02	6.27
106	14.30	16.4	2%98	3%98	3%98	80%74 11%70	76	-	61.89	12.03	3.95
107	5.80	15.8	65%74	35%70			73	-	23.51	12.03	1.47
108	17.25	16.2	3%98	1%98	58%74	38%70	73	-	68.95	12.03	4.38
109	5.53	9.5	74%74	26%70			73	-	26.42	11.96	1.41
110	6.63	8.1	77%74	21%70	2%98	1%98	74	-	33.12	11.94	1.73
111	13.31	19.3	1%98	0%0	0%98	47%74 51%70	72	-	47.42	12.08	3.28
112	7.18	8.7	94%74	6%70			74	-	35.42	11.95	1.88
121	17.81	24.2	2%98	4%98	5%98	42%74 48%70	74	-	60.04	12.13	4.65
200	100.00	42.8	100%74				74	-	232.0	12.36	25.98
300	42.20	52.3	100%74				74	-	85.09	12.48	10.94

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	30.0	-	-	-	-	.012	350	.0100	9.6	.6	26.35
2	24.0	-	-	-	-	.012	190	.0100	8.4	.4	15.65
3	24.0	-	-	-	-	.012	30	.0100	8.1	.1	13.33
4	18.0	-	-	-	-	.012	200	.0100	7.3	.5	10.85
5	-	3.0	2.0	.33	.33	.040	330	.3200	11.1	.5	25.66
6	36.0	-	-	-	-	.012	320	.0100	11.0	.5	46.37
23	12.0	-	-	-	-	.012	20	.0100	4.5	.1	1.22
25	36.0	-	-	-	-	.012	380	.0100	10.9	.6	43.19
26	48.0	-	-	-	-	.012	570	.0060	9.9	1.0	58.17
27	12.0	-	-	-	-	.012	20	.0100	4.0	.1	.88
28	18.0	-	-	-	-	.012	20	.0050	3.4	.1	1.48
29	18.0	-	-	-	-	.012	20	.0050	2.8	.1	.74
30	36.0	-	-	-	-	.012	560	.0050	7.9	1.2	36.31
31	48.0	-	-	-	-	.012	370	.0120	14.7	.4	120.0
33	48.0	-	-	-	-	.012	400	.0080	12.0	.6	91.53
34	48.0	-	-	-	-	.012	220	.0090	12.9	.3	105.8
39	-	10.0	1.0	.25	.25	.030	480	.0800	5.2	1.5	12.90
40	18.0	-	-	-	-	.012	50	.0200	10.2	.1	14.19
41	-	10.0	1.0	.10	.10	.050	130	.3000	3.9	.6	5.27
42	-	10.0	1.0	.10	.10	.050	450	.2900	9.5	.8	93.77
43	-	5.0	2.0	.33	.33	.040	600	.0750	8.7	1.1	82.35
44	-	5.0	2.0	.33	.33	.040	500	.0900	7.9	1.1	45.59
45	-	8.0	2.0	.33	.33	.040	175	.2280	13.1	.2	106.8
46	-	10.0	1.0	.10	.10	.050	280	.2500	7.5	.6	49.90
47	-	10.0	1.0	.10	.10	.040	900	.0940	5.4	2.8	29.35

48	30.0	-	-	-	-	.012	75	.0080	9.2	.1	37.00
49	-	3.0	2.0	.33	.33	.040	140	.1400	7.1	.3	15.24
50	18.0	-	-	-	-	.012	50	.0200	10.3	.1	15.50
52	-	10.0	2.5	.20	.20	.040	1400	.0321	7.5	3.1	240.3
53	-	10.0	3.0	.20	.20	.040	1400	.0320	7.2	3.2	214.8
54	-	10.0	3.0	.20	.20	.040	750	.0270	6.0	2.1	130.1
55	-	10.0	3.0	.20	.20	.040	200	.0250	5.8	.6	133.8
56	-	10.0	3.0	.20	.20	.040	1000	.0150	4.5	3.7	97.54
57	-	10.0	1.0	.10	.10	.050	1300	.1340	2.5	8.7	3.20
58	30.0	-	-	-	-	.012	50	.0100	5.4	.2	3.20
59	-	5.0	3.0	.33	.33	.040	430	.0580	3.6	2.0	2.14
60	12.0	-	-	-	-	.020	40	.0080	3.0	.2	2.20
65	-	-	-	-	-	-	-	-	0.0	0.0	102.0 N
66	-	10.0	2.0	.20	.20	.040	250	.0800	7.4	.6	75.87
67	-	10.0	1.0	.10	.10	.050	400	.1250	3.8	1.7	11.08
68	-	10.0	2.0	.20	.20	.040	350	.0280	5.1	1.1	75.13
69	-	10.0	2.0	.20	.20	.040	1300	.0270	4.9	4.5	65.09
70	-	10.0	1.0	.10	.10	.040	320	.0940	4.2	1.3	13.39
71	-	10.0	1.0	.10	.10	.040	250	.0600	0.0	0.0	0.00
84	-	8.0	2.0	.33	.33	.040	600	.1700	11.7	.9	101.2
85	54.0	-	-	-	-	.012	50	.0080	12.5	.1	102.5
86	-	3.0	2.0	.33	.33	.040	1000	.0750	9.5	1.8	102.7
87	-	3.0	2.0	.33	.33	.040	630	.1000	7.8	1.4	31.03
88	-	50.0	2.0	.25	.25	.040	300	.2300	0.0	0.0	0.00
89	-	10.0	1.0	.10	.10	.040	550	.1700	3.9	2.3	6.00
90	-	10.0	1.0	.10	.10	.040	750	.1500	8.1	1.5	73.91
100	-	-	-	-	-	-	-	-	0.0	0.0	426.0 N
199	-	10.0	1.0	.10	.10	.050	2820	.1800	8.7	5.4	132.9

200	36.0	-	-	-	-	.020	47	.0940	21.1	0.0	145.5
299	-	10.0	1.0	.10	.10	.050	750	.1500	2.8	4.5	3.83
300	14.0	-	-	-	-	.020	50	.0120	4.1	.2	3.83

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)
1	1996.0	2001.0	2000.1	1.36	120.4	116.0	1.43	114.6	4	7.0
2	2001.0	2006.0	2005.6	1.95	128.4	122.6	2.17	120.4	5	3.9
5	1937.9	1942.0	1940.2	6.90	110.3	0.00			100	0.0
7	1919.0	1926.0	1922.8	.50	23.51	15.17	1.16	14.01	35	10.5
10	1979.0	1986.0	1984.9	2.42	90.41	6.77	.70	6.07	93	38.7
11	1894.0	1901.0	1899.5	1.46	107.6	110.0			0	1.9
12	1894.0	1901.0	1899.9	.83	35.42	14.30	1.65	12.65	60	11.2
13	2064.0	2074.8	2072.2	2.21	120.0	81.72			32	6.5
14	1914.0	1921.0	1919.9	.82	28.73	5.44			81	18.7
15	1879.0	1886.0	1885.3	.54	50.75	49.64	.61	49.02	2	2.5
16	1829.0	1836.0	1835.1	2.35	88.04	42.15	3.77	38.39	52	13.6
17	1874.0	1881.0	1880.2	.91	89.01	102.8			0	0.0
20	1749.0	1756.0	1752.9	.55	191.9	195.8	194.5	1.27	0	1.7
21	1899.0	1906.0	1905.3	.31	62.97	61.95			2	1.3
22	1994.0	2001.0	2000.2	.92	86.75	80.31	.52	79.79	7	2.4
23	1849.0	1856.0	1853.7	.19	47.87	47.23	.41	46.82	1	1.4
24	1914.0	1921.0	1920.5	.74	70.33	69.39			1	1.8
60	1994.0	2011.0	2006.7	.70	26.25	3.20	3.20	0.00	88	86.5
108	1799.0	1806.0	1805.0	1.47	68.95	49.44			28	8.4
109	1774.0	1781.0	1780.6	.34	26.42	27.74			0	2.7
110	1794.0	1801.0	1800.5	.38	33.12	32.96	.72	32.24	0	3.2

SUBCATCHMENT 1

PEAK= 11.59 CFS @ 11.86 HRS, VOLUME= .53 AF

ACRES	CN		
.05	98	DRIVE	SCS TR-20 METHOD
.47	98	BUILDING	TYPE II 24-HOUR
1.17	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
1.69	81		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.4
Short Grass Pasture Kv=7 L=230' s=.15 '/' V=2.71 fps		

SUBCATCHMENT 2

PEAK= 2.88 CFS @ 11.82 HRS, VOLUME= .14 AF

ACRES	CN		
.10	98	PARKING	SCS TR-20 METHOD
.22	98	BUILDINGS	TYPE II 24-HOUR
.02	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
.34	97		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Paved Kv=20.3282 L=110' s=.05 '/' V=4.55 fps		

SUBCATCHMENT 3

PEAK= 2.88 CFS @ 11.82 HRS, VOLUME= .14 AF

ACRES	CN		
.10	98	PARKING	SCS TR-20 METHOD
.22	98	BUILDINGS	TYPE II 24-HOUR
.02	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
.34	97		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Paved Kv=20.3282 L=110' s=.05 '/' V=4.55 fps		

SUBCATCHMENT 4

PEAK= 11.21 CFS @ 11.87 HRS, VOLUME= .50 AF

ACRES	CN		
.18	98	DRIVEWAY	SCS TR-20 METHOD
.47	98	BUILDINGS	TYPE II 24-HOUR
.84	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
1.49	84		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.2
Paved Kv=20.3282 L=30' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.1
Short Grass Pasture Kv=7 L=230' s=.065 '/' V=1.78 fps		
	Total Length= 260 ft Total Tc=	2.3

SUBCATCHMENT 5

PEAK= 31.93 CFS @ 11.92 HRS, VOLUME= 1.61 AF

ACRES	CN		
.47	98	ROADS/WALKS	SCS TR-20 METHOD
.34	98	BUILDINGS	TYPE II 24-HOUR
1.61	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
3.40	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
5.82	76		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.2
Short Grass Pasture Kv=7 L=450' s=.24 '/' V=3.43 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.0
Forest w/Heavy Litter Kv=2.5 L=100' s=.05 '/' V=.56 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.1
Paved Kv=20.3282 L=320' s=.016 '/' V=2.57 fps		
	Total Length= 870 ft Total Tc=	7.3

SUBCATCHMENT 6

PEAK= 72.44 CFS @ 12.28 HRS, VOLUME= 7.29 AF

ACRES	CN	
.52	98	ROAD
.52	98	DRIVEWAYS
.21	98	BUILDING
6.87	74	C SOIL, LAWN, GOOD CONDITION
21.59	70	C SOIL, FOREST, GOOD CONDITION
29.71	72	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	33.5
Forest w/Heavy Litter Kv=2.5 L=1500' s=.089 '/' V=.75 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.8
Short Grass Pasture Kv=7 L=350' s=.089 '/' V=2.09 fps		
	Total Length= 1850 ft Total Tc=	36.3

SUBCATCHMENT 7

PEAK= 39.83 CFS @ 11.91 HRS, VOLUME= 1.94 AF

ACRES	CN	
.58	98	ROAD
4.58	74	C SOIL, GRASS, GOOD CONDITION
2.07	70	C SOIL, FOREST, GOOD CONDITION
7.23	75	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.2
Short Grass Pasture Kv=7 L=600' s=.197 '/' V=3.11 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.4
Forest w/Heavy Litter Kv=2.5 L=160' s=.197 '/' V=1.11 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.1
Paved Kv=20.3282 L=190' s=.02 '/' V=2.87 fps		
	Total Length= 950 ft Total Tc=	6.7

SUBCATCHMENT 8

PEAK= 13.85 CFS @ 11.89 HRS, VOLUME= .62 AF

ACRES	CN		
.06	98	ROAD	SCS TR-20 METHOD
.40	98	PARKING/WALKS	TYPE II 24-HOUR
1.61	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
2.07	79		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.7
Short Grass Pasture Kv=7 L=480' s=.094 '/' V=2.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.0
Paved Kv=20.3282 L=180' s=.02 '/' V=2.87 fps		
	Total Length= 660 ft Total Tc=	4.7

SUBCATCHMENT 9

PEAK= 20.83 CFS @ 11.88 HRS, VOLUME= .91 AF

ACRES	CN		
.04	98	ROAD	SCS TR-20 METHOD
.47	98	PARKING/WALKS	TYPE II 24-HOUR
.90	98	BUILDINGS	RAINFALL= 6.30 IN
1.19	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
2.60	87		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.8
Short Grass Pasture Kv=7 L=410' s=.12 '/' V=2.42 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.5
Paved Kv=20.3282 L=90' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
	Total Length= 520 ft Total Tc=	3.4

SUBCATCHMENT 10

PEAK= 40.65 CFS @ 11.88 HRS, VOLUME= 1.78 AF

ACRES	CN		
.10	98	ROAD	SCS TR-20 METHOD
.96	98	PARKING/WALKS	TYPE II 24-HOUR
1.26	98	BUILDING	RAINFALL= 6.30 IN
3.03	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
5.35	84		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.1
Short Grass Pasture Kv=7 L=550' s=.175 '/' V=2.93 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Paved Kv=20.3282 L=75' s=.035 '/' V=3.8 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Paved Kv=20.3282 L=100' s=.1 '/' V=6.43 fps		
	Total Length= 725 ft Total Tc=	3.7

SUBCATCHMENT 11

PEAK= 17.94 CFS @ 11.89 HRS, VOLUME= .78 AF

ACRES	CN		
.18	98	ROAD	SCS TR-20 METHOD
2.62	74	C SOIL, GRASS, GOOD CONDITION	TYPE II 24-HOUR
.02	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
2.82	76		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.2
Short Grass Pasture Kv=7 L=580' s=.19 '/' V=3.05 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.8
Paved Kv=20.3282 L=380' s=.145 '/' V=7.74 fps		
	Total Length= 960 ft Total Tc=	4.0

SUBCATCHMENT 12

PEAK= 62.55 CFS @ 12.23 HRS, VOLUME= 5.82 AF

ACRES	CN		
.52	98	DRIVE/WALKS/TENNIS COURTS	SCS TR-20 METHOD
.12	98	BUILDINGS	TYPE II 24-HOUR
16.63	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
5.08	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
22.35	74		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Paved Kv=20.3282 L=150' s=.08 '/' V=5.75 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.6
Short Grass Pasture Kv=7 L=100' s=.15 '/' V=2.71 fps		
CHANNEL FLOW	**STONE SWALE**	.7
a=18 sq-ft Pw=15.8' r=1.139'		
s=.05 '/' n=.04 V=9.06 fps L=400' Capacity=163.1 cfs		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	29.0
Forest w/Heavy Litter Kv=2.5 L=1350' s=.096 '/' V=.77 fps		
CHANNEL FLOW	**ROADSIDE SWALE**	2.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.03 '/' n=.04 V=7.02 fps L=850' Capacity=126.3 cfs		
	Total Length= 2850 ft Total Tc=	32.7

SUBCATCHMENT 13

PEAK= 34.03 CFS @ 12.00 HRS, VOLUME= 1.91 AF

ACRES	CN		
.16	98	ROAD	SCS TR-20 METHOD
.10	98	DRIVEWAY	TYPE II 24-HOUR
.09	98	BUILDING	RAINFALL= 6.30 IN
2.00	74	C SOIL, LAWN, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
5.41	70	C SOIL, FOREST, GOOD CONDITION	
7.76	72		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.1
Short Grass Pasture Kv=7 L=200' s=.174 '/' V=2.92 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	11.5
Forest w/Heavy Litter Kv=2.5 L=720' s=.174 '/' V=1.04 fps		
	Total Length= 920 ft Total Tc=	12.6

SUBCATCHMENT 14

PEAK= 28.73 CFS @ 11.94 HRS, VOLUME= 1.51 AF

ACRES	CN		
4.57	74	C SOIL, LAWN, GOOD CONDITION	SCS TR-20 METHOD
1.35	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
			RAINFALL= 6.30 IN
5.92	73		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.2
Forest w/Heavy Litter Kv=2.5 L=200' s=.17 '/' V=1.03 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.9
Short Grass Pasture Kv=7 L=850' s=.17 '/' V=2.89 fps		
	Total Length= 1050 ft Total Tc=	8.1

SUBCATCHMENT 15

PEAK= 50.75 CFS @ 11.94 HRS, VOLUME= 2.67 AF

ACRES	CN		
.36	98	ROADS	SCS TR-20 METHOD
.08	98	DRIVEWAYS	TYPE II 24-HOUR
.29	98	BUILDINGS	RAINFALL= 6.30 IN
8.27	74	C SOIL, LAWN, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
.92	70	C SOIL, FOREST, GOOD CONDITION	
9.92	75		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.5
Short Grass Pasture Kv=7 L=330' s=.288 '/' V=3.76 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.3
Forest w/Heavy Litter Kv=2.5 L=100' s=.25 '/' V=1.25 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.5
Short Grass Pasture Kv=7 L=220' s=.022 '/' V=1.04 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.8
Short Grass Pasture Kv=7 L=180' s=.056 '/' V=1.66 fps		
	Total Length= 850 ft Total Tc=	8.2

SUBCATCHMENT 16

PEAK= 40.21 CFS @ 11.91 HRS, VOLUME= 1.88 AF

ACRES	CN		
.21	98	BUILDINGS	SCS TR-20 METHOD
.10	98	DRIVEWAYS	TYPE II 24-HOUR
5.98	74	C SOIL, LAWN, GOOD CONDITION	RAINFALL= 6.30 IN
.71	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
7.00	75		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.7
Short Grass Pasture Kv=7 L=600' s=.15 '/' V=2.71 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.2
Forest w/Heavy Litter Kv=2.5 L=130' s=.15 '/' V=.97 fps		
	Total Length= 730 ft Total Tc=	5.9

SUBCATCHMENT 17

PEAK= 19.61 CFS @ 11.93 HRS, VOLUME= 1.00 AF

ACRES	CN		
2.38	74	C SOIL, GRASS, GOOD CONDITION	SCS TR-20 METHOD
1.20	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
.24	98	ROAD	RAINFALL= 6.30 IN
.94	39	A SOIL, VEGETATED ROOF, GOOD CON	SPAN= 10-20 HRS, dt=.1 HRS
4.76	67		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.3
Short Grass Pasture Kv=7 L=450' s=.21 '/' V=3.21 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	5.1
Forest w/Heavy Litter Kv=2.5 L=350' s=.21 '/' V=1.15 fps		
	Total Length= 800 ft Total Tc=	7.4

SUBCATCHMENT 18

PEAK= 40.18 CFS @ 11.96 HRS, VOLUME= 2.14 AF

ACRES	CN		
.21	98	ROAD	SCS TR-20 METHOD
6.34	74	C SOIL, GRASS, GOOD CONDITION	TYPE II 24-HOUR
1.62	70	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
8.17	74		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.1
Short Grass Pasture Kv=7 L=720' s=.173 '/' V=2.91 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.6
Forest w/Heavy Litter Kv=2.5 L=160' s=.173 '/' V=1.04 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.6
Paved Kv=20.3282 L=350' s=.012 '/' V=2.23 fps		
	Total Length= 1230 ft Total Tc=	9.3

SUBCATCHMENT 20

PEAK= 90.41 CFS @ 11.89 HRS, VOLUME= 3.98 AF

ACRES	CN		
.42	98	BUILDINGS	SCS TR-20 METHOD
1.21	98	DRIVEWAY/PARKING	TYPE II 24-HOUR
4.30	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
8.87	74	C SOIL, LAWN, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
14.80	75		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Paved Kv=20.3282 L=100' s=.05 '/' V=4.55 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Short Grass Pasture Kv=7 L=110' s=.41 '/' V=4.48 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.7
Forest w/Heavy Litter Kv=2.5 L=130' s=.27 '/' V=1.3 fps		
CHANNEL FLOW	**Segment ID:**	2.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.03 '/' n=.04 V=7.02 fps L=850' Capacity=126.3 cfs		
	Total Length= 1190 ft Total Tc=	4.5

SUBCATCHMENT 21

PEAK= 86.75 CFS @ 11.99 HRS, VOLUME= 4.81 AF

ACRES	CN		
.36	98	ROAD	SCS TR-20 METHOD
8.72	74	C SOIL, LAWN, GOOD CONDITION	TYPE II 24-HOUR
10.42	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
19.50	72		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	12.1
Short Grass Pasture Kv=7 L=1900' s=.14 '/' V=2.62 fps		

SUBCATCHMENT 22

PEAK= 70.33 CFS @ 11.91 HRS, VOLUME= 3.41 AF

ACRES	CN		
.21	98	PARKING	SCS TR-20 METHOD
11.30	74	C SOIL, LAWN, GOOD CONDITION	TYPE II 24-HOUR
.76	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
.25	98	BUILDINGS	SPAN= 10-20 HRS, dt=.1 HRS
.18	98	ROAD	
12.70	75		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	6.2
Short Grass Pasture Kv=7 L=1010' s=.15 '/' V=2.71 fps		
CHANNEL FLOW	**Segment ID:**	.3
a=18 sq-ft Pw=15.8' r=1.139'		
s=.12 '/' n=.04 V=14.04 fps L=250' Capacity=252.7 cfs		
	Total Length= 1270 ft Total Tc=	6.6

SUBCATCHMENT 23

PEAK= 16.89 CFS @ 12.05 HRS, VOLUME= 1.11 AF

ACRES	CN		
2.41	70	C SOIL, FOREST, GOOD CONDITION	SCS TR-20 METHOD
2.10	74	C SOIL, GRASS, GOOD CONDITION	TYPE II 24-HOUR
4.51	72		RAINFALL= 6.30 IN
			SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	14.5
Forest w/Heavy Litter Kv=2.5 L=840' s=.149 '/' V=.97 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.7
Short Grass Pasture Kv=7 L=400' s=.125 '/' V=2.47 fps		
	Total Length= 1240 ft Total Tc=	17.2

SUBCATCHMENT 24

PEAK= 32.13 CFS @ 11.97 HRS, VOLUME= 1.71 AF

ACRES	CN		SCS TR-20 METHOD
.50	74	C SOIL, GRASS, GOOD CONDITION	TYPE II 24-HOUR
6.85	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
7.35	70		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Short Grass Pasture Kv=7 L=100' s=.45 '/' V=4.7 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.8
Forest w/Heavy Litter Kv=2.5 L=150' s=.13 '/' V=.9 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	6.2
Short Grass Pasture Kv=7 L=800' s=.094 '/' V=2.15 fps		
	Total Length= 1050 ft Total Tc=	9.4

SUBCATCHMENT 25

PEAK= 44.25 CFS @ 12.24 HRS, VOLUME= 4.18 AF

ACRES	CN		SCS TR-20 METHOD
.03	98	BUILDING	TYPE II 24-HOUR
.60	98	PAVEMENT	RAINFALL= 6.30 IN
1.15	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
15.76	70	C SOIL, FOREST, GOOD CONDITION	
17.54	71		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.0
Forest w/Heavy Litter Kv=2.5 L=100' s=.05 '/' V=.56 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	30.1
Short Grass Pasture Kv=7 L=2000' s=.025 '/' V=1.11 fps		
	Total Length= 2100 ft Total Tc=	33.1

SUBCATCHMENT 40

PEAK= 55.46 CFS @ 12.25 HRS, VOLUME= 5.38 AF

ACRES	CN	
.97	98	ROAD
1.61	98	DRIVEWAYS/PARKING
.73	98	BUILDING
8.95	74	C SOIL, LAWN, GOOD CONDITION
6.79	70	C SOIL, FOREST, GOOD CONDITION
19.05	77	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	25.6
Short Grass Pasture Kv=7 L=2500' s=.054 '/' V=1.63 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	9.0
Short Grass Pasture Kv=7 L=600' s=.025 '/' V=1.11 fps		
	Total Length= 3120 ft Total Tc=	34.7

SUBCATCHMENT 41

PEAK= 39.06 CFS @ 11.94 HRS, VOLUME= 2.04 AF

ACRES	CN	
.25	98	DRIVEWAYS
.19	98	BUILDINGS
1.16	74	C SOIL, LAWN, GOOD CONDITION
6.66	70	C SOIL, FOREST, GOOD CONDITION
8.26	72	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	8.0
Forest w/Heavy Litter Kv=2.5 L=350' s=.086 '/' V=.73 fps		

SUBCATCHMENT 42

PEAK= 9.53 CFS @ 11.96 HRS, VOLUME= .51 AF

ACRES	CN	
.48	74	C SOIL, LAWN, GOOD CONDITION
1.63	70	C SOIL, FOREST, GOOD CONDITION
2.11	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.6
Forest w/Heavy Litter Kv=2.5 L=350' s=.0943 '/' V=.77 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.4
Short Grass Pasture Kv=7 L=180' s=.094 '/' V=2.15 fps		
	Total Length= 530 ft Total Tc=	9.0

SUBCATCHMENT 55

PEAK= .88 CFS @ 11.87 HRS, VOLUME= .04 AF

ACRES	CN		
.10	98	ROAD	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.3
Paved Kv=20.3282 L=380' s=.018 '/' V=2.73 fps		

SUBCATCHMENT 66

PEAK= 1.49 CFS @ 11.86 HRS, VOLUME= .07 AF

ACRES	CN	
.09	98	ROAD
.11	74	C SOIL, GRASS, GOOD CONDITION
.20	85	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.6
Paved Kv=20.3282 L=370' s=.034 '/' V=3.75 fps		

SUBCATCHMENT 77

PEAK= .75 CFS @ 11.82 HRS, VOLUME= .04 AF

ACRES	CN	
.09	98	ROAD

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.7
Paved Kv=20.3282 L=200' s=.05 '/' V=4.55 fps		

SUBCATCHMENT 88

PEAK= 1.23 CFS @ 11.89 HRS, VOLUME= .06 AF

ACRES	CN	
.14	98	ROAD

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.6
Paved Kv=20.3282 L=560' s=.01 '/' V=2.03 fps		

SUBCATCHMENT 101

PEAK= 24.18 CFS @ 11.85 HRS, VOLUME= 1.11 AF

ACRES	CN		
.13	98	ROAD	SCS TR-20 METHOD
.03	98	DRIVEWAYS	TYPE II 24-HOUR
2.04	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
2.17	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
4.37	73		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
CHANNEL FLOW	**Segment ID:**	.8
a=22 sq-ft Pw=18' r=1.222'		
s=.053 '/' n=.04 V=9.78 fps L=470' Capacity=215.1 cfs		
	Total Length= 490 ft Total Tc=	.9

SUBCATCHMENT 102

PEAK= 14.23 CFS @ 11.86 HRS, VOLUME= .64 AF

ACRES	CN		
.26	98	DRIVEWAYS	SCS TR-20 METHOD
.18	98	BUILDINGS	TYPE II 24-HOUR
1.25	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
.51	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
2.20	78		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Paved Kv=20.3282 L=80' s=.05 '/' V=4.55 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.2
Short Grass Pasture Kv=7 L=20' s=.05 '/' V=1.57 fps		
CHANNEL FLOW	**Segment ID:**	1.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.054 '/' n=.04 V=9.42 fps L=550' Capacity=169.5 cfs		
	Total Length= 650 ft Total Tc=	1.5

SUBCATCHMENT 103

PEAK= 15.56 CFS @ 11.87 HRS, VOLUME= .69 AF

ACRES	CN	
.62	98	ROAD/WALKS
.33	98	TENNIS COURTS
.18	98	BUILDING
.66	74	C SOIL, GRASS, GOOD CONDITION
.15	70	C SOIL, FOREST, GOOD CONDITION
1.94	88	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.6
Paved Kv=20.3282 L=340' s=.03 '/' V=3.52 fps		
CHANNEL FLOW	**Segment ID:**	.7
a=18 sq-ft Pw=15.8' r=1.139'		
s=.07 '/' n=.04 V=10.72 fps L=430' Capacity=193 cfs		
	Total Length= 770 ft Total Tc=	2.3

SUBCATCHMENT 104

PEAK= 22.13 CFS @ 11.87 HRS, VOLUME= .97 AF

ACRES	CN	
.46	98	ROAD
.12	98	DRIVEWAYS
.49	98	BUILDINGS
1.96	74	C SOIL, GRASS, GOOD CONDITION
3.03	82	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.7
Paved Kv=20.3282 L=180' s=.05 '/' V=4.55 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.0
Short Grass Pasture Kv=7 L=150' s=.133 '/' V=2.55 fps		
CHANNEL FLOW	**Segment ID:**	.9
a=18 sq-ft Pw=15.8' r=1.139'		
s=.075 '/' n=.04 V=11.1 fps L=580' Capacity=199.8 cfs		
	Total Length= 910 ft Total Tc=	2.6

SUBCATCHMENT 105

PEAK= 103.1 CFS @ 12.02 HRS, VOLUME= 6.27 AF

ACRES	CN	
.26	98	ROAD
.58	98	DRIVEWAYS
.76	98	BUILDINGS
3.21	98	POND
14.06	74	C SOIL, GRASS, GOOD CONDITION
2.19	70	C SOIL, FOREST, GOOD CONDITION
21.06	79	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.7
Paved Kv=20.3282 L=100' s=.012 '/' V=2.23 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	9.2
Short Grass Pasture Kv=7 L=1000' s=.067 '/' V=1.81 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	5.2
Forest w/Heavy Litter Kv=2.5 L=200' s=.067 '/' V=.65 fps		
	Total Length= 1300 ft Total Tc=	15.1

SUBCATCHMENT 106

PEAK= 61.89 CFS @ 12.03 HRS, VOLUME= 3.95 AF

ACRES	CN	
.35	98	ROAD
.43	98	DRIVEWAYS
.47	98	BUILDINGS
11.49	74	C SOIL, GRASS, GOOD CONDITION
1.56	70	C SOIL, FOREST, GOOD CONDITION
14.30	76	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.2
Paved Kv=20.3282 L=50' s=.03 '/' V=3.52 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	10.4
Short Grass Pasture Kv=7 L=1300' s=.088 '/' V=2.08 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	5.8
Forest w/Heavy Litter Kv=2.5 L=260' s=.088 '/' V=.74 fps		
	Total Length= 1610 ft Total Tc=	16.4

SUBCATCHMENT 107

PEAK= 23.51 CFS @ 12.03 HRS, VOLUME= 1.47 AF

ACRES	CN		
3.76	74	C SOIL, GRASS, GOOD CONDITION	SCS TR-20 METHOD
2.04	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
5.80	73		RAINFALL= 6.30 IN
			SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	11.9
Forest w/Heavy Litter Kv=2.5 L=400' s=.05 '/' V=.56 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.9
Short Grass Pasture Kv=7 L=430' s=.07 '/' V=1.85 fps		
	Total Length= 830 ft Total Tc=	15.8

SUBCATCHMENT 108

PEAK= 68.95 CFS @ 12.03 HRS, VOLUME= 4.38 AF

ACRES	CN		
.57	98	ROAD	SCS TR-20 METHOD
.10	98	BUILDING	TYPE II 24-HOUR
9.97	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
6.61	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
17.25	73		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	12.3
Forest w/Heavy Litter Kv=2.5 L=720' s=.153 '/' V=.98 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.8
Short Grass Pasture Kv=7 L=600' s=.142 '/' V=2.64 fps		
	Total Length= 1340 ft Total Tc=	16.2

SUBCATCHMENT 109

PEAK= 26.42 CFS @ 11.96 HRS, VOLUME= 1.41 AF

ACRES	CN		
4.11	74	C SOIL, GRASS, GOOD CONDITION	SCS TR-20 METHOD
1.42	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
5.53	73		RAINFALL= 6.30 IN
			SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.7
Forest w/Heavy Litter Kv=2.5 L=320' s=.203 '/' V=1.13 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.8
Short Grass Pasture Kv=7 L=740' s=.135 '/' V=2.57 fps		
	Total Length= 1060 ft Total Tc=	9.5

SUBCATCHMENT 110

PEAK= 33.12 CFS @ 11.94 HRS, VOLUME= 1.73 AF

ACRES	CN		
5.10	74	C SOIL, GRASS, GOOD CONDITION	SCS TR-20 METHOD
1.38	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
.11	98	PARKING	RAINFALL= 6.30 IN
.04	98	BUILDING	SPAN= 10-20 HRS, dt=.1 HRS
6.63	74		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.7
Forest w/Heavy Litter Kv=2.5 L=310' s=.194 '/' V=1.1 fps		
SHALLOW CONCENTRATED/UPLAND FLOW		2.3
Short Grass Pasture Kv=7 L=360' s=.134 '/' V=2.56 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.1
Short Grass Pasture Kv=7 L=150' s=.1 '/' V=2.21 fps		
	Total Length= 820 ft Total Tc=	8.1

SUBCATCHMENT 111

PEAK= 47.42 CFS @ 12.08 HRS, VOLUME= 3.28 AF

ACRES	CN		SCS TR-20 METHOD
.17	98	ROAD	TYPE II 24-HOUR
0.00	0		RAINFALL= 6.30 IN
.06	98	BUILDINGS	SPAN= 10-20 HRS, dt=.1 HRS
6.24	74	C SOIL, GRASS, GOOD CONDITION	
6.84	70	C SOIL, FOREST, GOOD CONDITION	
13.31	72		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	17.2
Forest w/Heavy Litter Kv=2.5 L=1000' s=.15 '/' V=.97 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.0
Short Grass Pasture Kv=7 L=350' s=.17 '/' V=2.89 fps		
	Total Length= 1360 ft Total Tc=	19.3

SUBCATCHMENT 112

PEAK= 35.42 CFS @ 11.95 HRS, VOLUME= 1.88 AF

ACRES	CN		SCS TR-20 METHOD
6.76	74	C SOIL, GRASS, GOOD CONDITION	TYPE II 24-HOUR
.42	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
7.18	74		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	8.7
Short Grass Pasture Kv=7 L=1000' s=.075 '/' V=1.92 fps		

SUBCATCHMENT 121

PEAK= 60.04 CFS @ 12.13 HRS, VOLUME= 4.65 AF

ACRES	CN	
.30	98	ROAD
.64	98	DRIVEWAYS
.81	98	BUILDINGS
7.56	74	C SOIL, LAWN, GOOD CONDITION
8.50	70	C SOIL, FOREST, GOOD CONDITION
17.81	74	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	24.1
Forest w/Heavy Litter Kv=2.5 L=1400' s=.15 '/' V=.97 fps		
	Total Length= 1410 ft Total Tc=	24.2

SUBCATCHMENT 200 ASSUME MAX DISCHARGE

PEAK= 232.0 CFS @ 12.36 HRS, VOLUME= 25.98 AF

ACRES	CN	
100.00	74	C SOIL, FOREST, GOOD CONDITION

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	42.8
Forest w/Heavy Litter Kv=2.5 L=3400' s=.28 '/' V=1.32 fps		

SUBCATCHMENT 300 ASSUME MAX AREA

PEAK= 85.09 CFS @ 12.48 HRS, VOLUME= 10.94 AF

ACRES	CN	
42.20	74	C SOIL, FOREST, GOOD CONDITION

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	52.3
Forest w/Heavy Litter Kv=2.5 L=4000' s=.26 '/' V=1.27 fps		

REACH 1 **PIPE**

Qin = 27.18 CFS @ 11.87 HRS, VOLUME= 1.29 AF
Qout= 26.35 CFS @ 11.88 HRS, VOLUME= 1.29 AF, ATTEN= 3%, LAG= .8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.26	.93
.50	.70	3.89
.75	1.24	8.70
1.75	3.67	37.20
2.00	4.21	43.43
2.25	4.65	47.36
2.35	4.79	47.80
2.43	4.87	47.36
2.50	4.91	44.44

30" PIPE
n= .012
LENGTH= 350 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.37 FT
PEAK VELOCITY= 9.6 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 2 **PIPE**

Qin = 15.90 CFS @ 11.86 HRS, VOLUME= .77 AF
Qout= 15.65 CFS @ 11.87 HRS, VOLUME= .77 AF, ATTEN= 2%, LAG= .5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.16	.51
.40	.45	2.15
.60	.79	4.80
1.40	2.35	20.52
1.60	2.69	23.96
1.80	2.98	26.12
1.88	3.06	26.36
1.94	3.11	26.12
2.00	3.14	24.51

24" PIPE
n= .012
LENGTH= 190 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.14 FT
PEAK VELOCITY= 8.4 FPS
TRAVEL TIME = .4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 3 **PIPE**

Qin = 13.36 CFS @ 11.87 HRS, VOLUME= .63 AF
Qout= 13.33 CFS @ 11.87 HRS, VOLUME= .63 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.16	.51
.40	.45	2.15
.60	.79	4.80
1.40	2.35	20.52
1.60	2.69	23.96
1.80	2.98	26.12
1.88	3.06	26.36
1.94	3.11	26.12
2.00	3.14	24.51

24" PIPE
n= .012
LENGTH= 30 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.01 FT
PEAK VELOCITY= 8.1 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 4 **PIPE**

Qin = 11.21 CFS @ 11.87 HRS, VOLUME= .50 AF
Qout= 10.85 CFS @ 11.88 HRS, VOLUME= .49 AF, ATTEN= 3%, LAG= .5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.24
.30	.25	1.00
.45	.45	2.23
1.05	1.32	9.53
1.20	1.52	11.12
1.35	1.68	12.13
1.41	1.72	12.24
1.46	1.75	12.13
1.50	1.77	11.38

18" PIPE
n= .012
LENGTH= 200 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.17 FT
PEAK VELOCITY= 7.3 FPS
TRAVEL TIME = .5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 5 **STONE SWALE**

Qin = 26.35 CFS @ 11.88 HRS, VOLUME= 1.29 AF
Qout= 25.66 CFS @ 11.89 HRS, VOLUME= 1.29 AF, ATTEN= 3%, LAG= .6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	4.63
.40	1.68	15.99
.60	2.89	34.25
.86	4.82	69.49
1.20	7.96	137.80
1.60	12.56	255.12
2.00	18.12	417.89

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 330 FT
SLOPE= .32 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .51 FT
PEAK VELOCITY= 11.1 FPS
TRAVEL TIME = .5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 6 **PIPE**

Qin = 48.47 CFS @ 11.91 HRS, VOLUME= 5.27 AF
Qout= 46.37 CFS @ 11.92 HRS, VOLUME= 5.26 AF, ATTEN= 4%, LAG= .8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	.37	1.51
.60	1.01	6.33
.90	1.78	14.15
2.10	5.29	60.50
2.40	6.06	70.63
2.70	6.70	77.01
2.82	6.90	77.72
2.91	7.01	77.01
3.00	7.07	72.26

36" PIPE
n= .012
LENGTH= 320 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.76 FT
PEAK VELOCITY= 11.0 FPS
TRAVEL TIME = .5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 23 **PIPE**

Qin = 1.23 CFS @ 11.89 HRS, VOLUME= .06 AF
Qout= 1.22 CFS @ 11.89 HRS, VOLUME= .06 AF, ATTEN= 1%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	.04	.08
.20	.11	.34
.30	.20	.76
.70	.59	3.23
.80	.67	3.77
.90	.74	4.11
.94	.77	4.15
.97	.78	4.11
1.00	.79	3.86

12" PIPE
n= .012
LENGTH= 20 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .38 FT
PEAK VELOCITY= 4.5 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 25 **PIPE**

Qin = 46.26 CFS @ 11.91 HRS, VOLUME= 2.26 AF
Qout= 43.19 CFS @ 11.93 HRS, VOLUME= 2.26 AF, ATTEN= 7%, LAG= 1.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	.37	1.51
.60	1.01	6.33
.90	1.78	14.15
2.10	5.29	60.50
2.40	6.06	70.63
2.70	6.70	77.01
2.82	6.90	77.72
2.91	7.01	77.01
3.00	7.07	72.26

36" PIPE
n= .012
LENGTH= 380 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.68 FT
PEAK VELOCITY= 10.9 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 26 **PIPE**

Qin = 64.02 CFS @ 11.91 HRS, VOLUME= 3.23 AF
Qout= 58.17 CFS @ 11.93 HRS, VOLUME= 3.23 AF, ATTEN= 9%, LAG= 1.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.40	.65	2.52
.80	1.79	10.56
1.20	3.17	23.61
2.80	9.40	100.92
3.20	10.78	117.82
3.60	11.91	128.47
3.76	12.26	129.66
3.88	12.46	128.46
4.00	12.57	120.54

48" PIPE
n= .012
LENGTH= 570 FT
SLOPE= .006 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.97 FT
PEAK VELOCITY= 9.9 FPS
TRAVEL TIME = 1.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 27

Qin = .88 CFS @ 11.87 HRS, VOLUME= .04 AF
Qout= .88 CFS @ 11.87 HRS, VOLUME= .04 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	.04	.08
.20	.11	.34
.30	.20	.76
.70	.59	3.23
.80	.67	3.77
.90	.74	4.11
.94	.77	4.15
.97	.78	4.11
1.00	.79	3.86

12" PIPE
n= .012
LENGTH= 20 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .31 FT
PEAK VELOCITY= 4.0 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 28 **PIPE**

Qin = 1.49 CFS @ 11.86 HRS, VOLUME= .07 AF
Qout= 1.48 CFS @ 11.86 HRS, VOLUME= .07 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.17
.30	.25	.70
.45	.45	1.58
1.05	1.32	6.74
1.20	1.52	7.87
1.35	1.68	8.58
1.41	1.72	8.66
1.46	1.75	8.58
1.50	1.77	8.05

18" PIPE
n= .012
LENGTH= 20 FT
SLOPE= .005 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .42 FT
PEAK VELOCITY= 3.4 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 29 **PIPE**

Qin = .75 CFS @ 11.82 HRS, VOLUME= .04 AF
Qout= .74 CFS @ 11.83 HRS, VOLUME= .04 AF, ATTEN= 1%, LAG= .3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.17
.30	.25	.70
.45	.45	1.58
1.05	1.32	6.74
1.20	1.52	7.87
1.35	1.68	8.58
1.41	1.72	8.66
1.46	1.75	8.58
1.50	1.77	8.05

18" PIPE
n= .012
LENGTH= 20 FT
SLOPE= .005 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .30 FT
PEAK VELOCITY= 2.8 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 30 **PIPE**

Qin = 40.42 CFS @ 11.91 HRS, VOLUME= 1.98 AF
Qout= 36.31 CFS @ 11.96 HRS, VOLUME= 1.98 AF, ATTEN= 10%, LAG= 2.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	.37	1.07
.60	1.01	4.47
.90	1.78	10.01
2.10	5.29	42.78
2.40	6.06	49.94
2.70	6.70	54.45
2.82	6.90	54.96
2.91	7.01	54.45
3.00	7.07	51.09

36" PIPE
n= .012
LENGTH= 560 FT
SLOPE= .005 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.87 FT
PEAK VELOCITY= 7.9 FPS
TRAVEL TIME = 1.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 31 **PIPE**

Qin = 121.1 CFS @ 11.94 HRS, VOLUME= 9.44 AF
Qout= 120.0 CFS @ 11.96 HRS, VOLUME= 9.43 AF, ATTEN= 1%, LAG= 1.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.40	.65	3.56
.80	1.79	14.93
1.20	3.17	33.38
2.80	9.40	142.72
3.20	10.78	166.62
3.60	11.91	181.68
3.76	12.26	183.37
3.88	12.46	181.67
4.00	12.57	170.47

48" PIPE
n= .012
LENGTH= 370 FT
SLOPE= .012 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.39 FT
PEAK VELOCITY= 14.7 FPS
TRAVEL TIME = .4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 33 **PIPE**

Qin = 96.86 CFS @ 11.90 HRS, VOLUME= 5.01 AF
Qout= 91.53 CFS @ 11.92 HRS, VOLUME= 5.01 AF, ATTEN= 6%, LAG= .9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.40	.65	2.91
.80	1.79	12.19
1.20	3.17	27.26
2.80	9.40	116.53
3.20	10.78	136.05
3.60	11.91	148.34
3.76	12.26	149.72
3.88	12.46	148.34
4.00	12.57	139.18

48" PIPE
n= .012
LENGTH= 400 FT
SLOPE= .008 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.40 FT
PEAK VELOCITY= 12.0 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 34 **PIPE**

Qin = 108.9 CFS @ 11.91 HRS, VOLUME= 5.78 AF
Qout= 105.8 CFS @ 11.92 HRS, VOLUME= 5.78 AF, ATTEN= 3%, LAG= .5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.40	.65	3.08
.80	1.79	12.93
1.20	3.17	28.91
2.80	9.40	123.60
3.20	10.78	144.30
3.60	11.91	157.34
3.76	12.26	158.80
3.88	12.46	157.33
4.00	12.57	147.63

48" PIPE
n= .012
LENGTH= 220 FT
SLOPE= .009 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.51 FT
PEAK VELOCITY= 12.9 FPS
TRAVEL TIME = .3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 39 **OVERLAND FLOW**

Qin = 14.19 CFS @ 11.86 HRS, VOLUME= .64 AF
Qout= 12.90 CFS @ 11.89 HRS, VOLUME= .64 AF, ATTEN= 9%, LAG= 1.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.04	3.06
.20	2.16	9.84
.30	3.36	19.63
.43	5.04	36.52
.60	7.44	65.47
.80	10.56	109.45
1.00	14.00	164.39

10' x 1' CHANNEL
SIDE SLOPE= .25 '/'
n= .03
LENGTH= 480 FT
SLOPE= .08 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .24 FT
PEAK VELOCITY= 5.2 FPS
TRAVEL TIME = 1.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 40 **CULVERT**

Qin = 14.23 CFS @ 11.86 HRS, VOLUME= .64 AF
Qout= 14.19 CFS @ 11.86 HRS, VOLUME= .64 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.34
.30	.25	1.41
.45	.45	3.15
1.05	1.32	13.47
1.20	1.52	15.73
1.35	1.68	17.15
1.41	1.72	17.31
1.46	1.75	17.15
1.50	1.77	16.09

18" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .02 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.05 FT
PEAK VELOCITY= 10.2 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 41 **OVERLAND FLOW**

Qin = 5.44 CFS @ 12.25 HRS, VOLUME= .74 AF
Qout= 5.27 CFS @ 12.30 HRS, VOLUME= .74 AF, ATTEN= 3%, LAG= 3.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.64
.20	2.40	12.04
.30	3.90	24.74
.43	6.15	47.78
.60	9.60	89.74
.80	14.40	157.77
1.00	20.00	247.90

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 130 FT
SLOPE= .3 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .12 FT
PEAK VELOCITY= 3.9 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 42 **OVERLAND FLOW**

Qin = 102.8 CFS @ 12.04 HRS, VOLUME= 7.25 AF
Qout= 93.77 CFS @ 12.10 HRS, VOLUME= 7.24 AF, ATTEN= 9%, LAG= 3.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.58
.20	2.40	11.84
.30	3.90	24.33
.43	6.15	46.98
.60	9.60	88.23
.80	14.40	155.11
1.00	20.00	243.74

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 450 FT
SLOPE= .29 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .63 FT
PEAK VELOCITY= 9.5 FPS
TRAVEL TIME = .8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 43 **STONE SWALE**

Qin = 89.29 CFS @ 12.03 HRS, VOLUME= 4.53 AF
Qout= 82.35 CFS @ 12.07 HRS, VOLUME= 4.53 AF, ATTEN= 8%, LAG= 2.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.12	3.62
.40	2.48	12.05
.60	4.09	24.92
.86	6.54	48.58
1.20	10.36	92.28
1.60	15.76	164.13
2.00	22.12	260.50

5' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 600 FT
SLOPE= .075 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.14 FT
PEAK VELOCITY= 8.7 FPS
TRAVEL TIME = 1.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 44 **STONE SWALE**

Qin = 46.82 CFS @ 12.06 HRS, VOLUME= 2.65 AF
Qout= 45.59 CFS @ 12.09 HRS, VOLUME= 2.65 AF, ATTEN= 3%, LAG= 1.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.12	3.96
.40	2.48	13.20
.60	4.09	27.30
.86	6.54	53.21
1.20	10.36	101.08
1.60	15.76	179.80
2.00	22.12	285.36

5' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 500 FT
SLOPE= .09 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .79 FT
PEAK VELOCITY= 7.9 FPS
TRAVEL TIME = 1.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 45 **STONE SWALE**

Qin = 106.5 CFS @ 12.22 HRS, VOLUME= 9.04 AF
Qout= 106.8 CFS @ 12.23 HRS, VOLUME= 9.04 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.72	9.93
.40	3.68	32.41
.60	5.89	65.65
.86	9.12	124.65
1.20	13.96	229.49
1.60	20.56	395.35
2.00	28.12	610.62

8' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 175 FT
SLOPE= .228 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .78 FT
PEAK VELOCITY= 13.1 FPS
TRAVEL TIME = .2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 46 **OVERLAND FLOW**

Qin = 49.02 CFS @ 11.98 HRS, VOLUME= 1.88 AF
Qout= 49.90 CFS @ 12.00 HRS, VOLUME= 1.88 AF, ATTEN= 0%, LAG= 1.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.32
.20	2.40	11.00
.30	3.90	22.59
.43	6.15	43.62
.60	9.60	81.92
.80	14.40	144.02
1.00	20.00	226.30

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 280 FT
SLOPE= .25 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .47 FT
PEAK VELOCITY= 7.5 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 47 **OVERLAND FLOW**

Qin = 37.00 CFS @ 11.88 HRS, VOLUME= 1.66 AF
Qout= 29.35 CFS @ 11.95 HRS, VOLUME= 1.66 AF, ATTEN= 21%, LAG= 4.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.55
.20	2.40	8.43
.30	3.90	17.31
.43	6.15	33.43
.60	9.60	62.79
.80	14.40	110.39
1.00	20.00	173.46

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .04
LENGTH= 900 FT
SLOPE= .094 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .43 FT
PEAK VELOCITY= 5.4 FPS
TRAVEL TIME = 2.8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 48 **CUVERT/PIPE**

Qin = 37.37 CFS @ 11.87 HRS, VOLUME= 1.66 AF
Qout= 37.00 CFS @ 11.88 HRS, VOLUME= 1.66 AF, ATTEN= 1%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.26	.83
.50	.70	3.48
.75	1.24	7.78
1.75	3.67	33.28
2.00	4.21	38.85
2.25	4.65	42.36
2.35	4.79	42.75
2.43	4.87	42.36
2.50	4.91	39.74

30" PIPE

n= .012
LENGTH= 75 FT
SLOPE= .008 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.89 FT
PEAK VELOCITY= 9.2 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 49 **STONE SWALE**

Qin = 15.50 CFS @ 11.87 HRS, VOLUME= .69 AF
Qout= 15.24 CFS @ 11.88 HRS, VOLUME= .69 AF, ATTEN= 2%, LAG= .4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	3.06
.40	1.68	10.58
.60	2.89	22.66
.86	4.82	45.96
1.20	7.96	91.15
1.60	12.56	168.75
2.00	18.12	276.41

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 140 FT
SLOPE= .14 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .47 FT
PEAK VELOCITY= 7.1 FPS
TRAVEL TIME = .3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 50 **CULVERT**

Qin = 15.56 CFS @ 11.87 HRS, VOLUME= .69 AF
Qout= 15.50 CFS @ 11.87 HRS, VOLUME= .69 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.34
.30	.25	1.41
.45	.45	3.15
1.05	1.32	13.47
1.20	1.52	15.73
1.35	1.68	17.15
1.41	1.72	17.31
1.46	1.75	17.15
1.50	1.77	16.09

18" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .02 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.15 FT
PEAK VELOCITY= 10.3 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 52 **OVERLAND FLOW**

Qin = 249.4 CFS @ 12.41 HRS, VOLUME= 25.18 AF
Qout= 240.3 CFS @ 12.51 HRS, VOLUME= 25.03 AF, ATTEN= 4%, LAG= 6.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	2.81	6.91
.50	6.25	23.11
.75	10.31	47.97
1.08	16.53	93.89
1.50	26.25	179.08
2.00	40.00	319.72
2.50	56.25	508.90

10' x 2.5' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 1400 FT
SLOPE= .0321 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.72 FT
PEAK VELOCITY= 7.5 FPS
TRAVEL TIME = 3.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 53 **OVERLAND FLOW**

Qin = 222.6 CFS @ 12.32 HRS, VOLUME= 21.14 AF
Qout= 214.8 CFS @ 12.43 HRS, VOLUME= 21.01 AF, ATTEN= 4%, LAG= 6.4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	9.44
.60	7.80	31.95
.90	13.05	67.09
1.29	21.22	133.05
1.80	34.20	257.52
2.40	52.80	466.21
3.00	75.00	750.46

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 1400 FT
SLOPE= .032 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.63 FT
PEAK VELOCITY= 7.2 FPS
TRAVEL TIME = 3.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 54 **OVERLAND FLOW**

Qin = 133.8 CFS @ 12.28 HRS, VOLUME= 12.17 AF
Qout= 130.1 CFS @ 12.35 HRS, VOLUME= 12.10 AF, ATTEN= 3%, LAG= 4.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	8.67
.60	7.80	29.35
.90	13.05	61.63
1.29	21.22	122.22
1.80	34.20	236.55
2.40	52.80	428.24
3.00	75.00	689.34

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 750 FT
SLOPE= .027 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.35 FT
PEAK VELOCITY= 6.0 FPS
TRAVEL TIME = 2.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 55 **OVERLAND FLOW**

Qin = 135.7 CFS @ 12.26 HRS, VOLUME= 12.18 AF
Qout= 133.8 CFS @ 12.28 HRS, VOLUME= 12.17 AF, ATTEN= 1%, LAG= 1.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	8.34
.60	7.80	28.24
.90	13.05	59.30
1.29	21.22	117.60
1.80	34.20	227.62
2.40	52.80	412.08
3.00	75.00	663.32

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 200 FT
SLOPE= .025 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.36 FT
PEAK VELOCITY= 5.8 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 56 **OVERLAND FLOW**

Qin = 110.0 CFS @ 12.15 HRS, VOLUME= 8.90 AF
Qout= 97.54 CFS @ 12.30 HRS, VOLUME= 8.81 AF, ATTEN= 11%, LAG= 9.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	6.46
.60	7.80	21.87
.90	13.05	45.94
1.29	21.22	91.10
1.80	34.20	176.31
2.40	52.80	319.19
3.00	75.00	513.80

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 1000 FT
SLOPE= .015 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.36 FT
PEAK VELOCITY= 4.5 FPS
TRAVEL TIME = 3.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 57 **OVERLAND FLOW**

Qin = 3.20 CFS @ 13.22 HRS, VOLUME= 2.34 AF
Qout= 3.20 CFS @ 13.53 HRS, VOLUME= 2.27 AF, ATTEN= 0%, LAG= 18.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.43
.20	2.40	8.05
.30	3.90	16.54
.43	6.15	31.93
.60	9.60	59.98
.80	14.40	105.44
1.00	20.00	165.68

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1300 FT
SLOPE= .134 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .11 FT
PEAK VELOCITY= 2.5 FPS
TRAVEL TIME = 8.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 58 **CULVERT**

Qin = 3.20 CFS @ 13.29 HRS, VOLUME= 2.34 AF
Qout= 3.20 CFS @ 13.22 HRS, VOLUME= 2.34 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.26	.93
.50	.70	3.89
.75	1.24	8.70
1.75	3.67	37.20
2.00	4.21	43.43
2.25	4.65	47.36
2.35	4.79	47.80
2.43	4.87	47.36
2.50	4.91	44.44

30" PIPE

n= .012
LENGTH= 50 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .44 FT
PEAK VELOCITY= 5.4 FPS
TRAVEL TIME = .2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 59 **EXISTING SWALE**

Qin = 2.20 CFS @ 11.01 HRS, VOLUME= 1.66 AF
Qout= 2.14 CFS @ 11.11 HRS, VOLUME= 1.65 AF, ATTEN= 3%, LAG= 5.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	1.77	6.40
.60	4.09	21.92
.90	6.95	46.56
1.29	11.49	93.60
1.80	18.82	183.88
2.40	29.45	337.56
3.00	42.27	549.38

5' x 3' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 430 FT
SLOPE= .058 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .10 FT
PEAK VELOCITY= 3.6 FPS
TRAVEL TIME = 2.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 60 **EXISTING CULVERT**

Qin = 72.44 CFS @ 12.28 HRS, VOLUME= 7.29 AF
Qout= 2.20 CFS @ 11.01 HRS, VOLUME= 1.66 AF, ATTEN= 97%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	.04	.04
.20	.11	.18
.30	.20	.41
.70	.59	1.73
.80	.67	2.02
.90	.74	2.21
.94	.77	2.23
.97	.78	2.21
1.00	.79	2.07

12" PIPE
n= .02
LENGTH= 40 FT
SLOPE= .008 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.00 FT
PEAK VELOCITY= 3.0 FPS
TRAVEL TIME = .2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 65

Not described

Qin = 102.0 CFS @ 12.34 HRS, VOLUME= 10.55 AF
Qout= 102.0 CFS @ 12.34 HRS, VOLUME= 10.55 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)

- METHOD
PEAK DEPTH= 0.00 FT
PEAK VELOCITY= 0.0 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 66 **OVERLAND FLOW**

Qin = 76.40 CFS @ 12.40 HRS, VOLUME= 8.85 AF
Qout= 75.87 CFS @ 12.42 HRS, VOLUME= 8.85 AF, ATTEN= 1%, LAG= 1.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	2.20	7.44
.40	4.80	24.61
.60	7.80	50.52
.86	12.30	97.48
1.20	19.20	182.93
1.60	28.80	321.37
2.00	40.00	504.73

10' x 2' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 250 FT
SLOPE= .08 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .74 FT
PEAK VELOCITY= 7.4 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 67 **OVERLAND FLOW**

Qin = 12.65 CFS @ 12.14 HRS, VOLUME= .45 AF
Qout= 11.08 CFS @ 12.22 HRS, VOLUME= .45 AF, ATTEN= 12%, LAG= 5.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.35
.20	2.40	7.77
.30	3.90	15.97
.43	6.15	30.84
.60	9.60	57.93
.80	14.40	101.84
1.00	20.00	160.02

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 400 FT
SLOPE= .125 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .26 FT
PEAK VELOCITY= 3.8 FPS
TRAVEL TIME = 1.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 68 **OVERLAND FLOW**

Qin = 76.48 CFS @ 12.37 HRS, VOLUME= 8.36 AF
Qout= 75.13 CFS @ 12.40 HRS, VOLUME= 8.34 AF, ATTEN= 2%, LAG= 1.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	2.20	4.40
.40	4.80	14.56
.60	7.80	29.89
.86	12.30	57.67
1.20	19.20	108.22
1.60	28.80	190.12
2.00	40.00	298.60

10' x 2' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 350 FT
SLOPE= .028 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .98 FT
PEAK VELOCITY= 5.1 FPS
TRAVEL TIME = 1.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 69 **OVERLAND FLOW**

Qin = 69.14 CFS @ 12.24 HRS, VOLUME= 5.90 AF
Qout= 65.09 CFS @ 12.40 HRS, VOLUME= 5.87 AF, ATTEN= 6%, LAG= 9.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	2.20	4.32
.40	4.80	14.30
.60	7.80	29.35
.86	12.30	56.63
1.20	19.20	106.27
1.60	28.80	186.70
2.00	40.00	293.22

10' x 2' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 1300 FT
SLOPE= .027 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .93 FT
PEAK VELOCITY= 4.9 FPS
TRAVEL TIME = 4.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 70 **OVERLAND FLOW**

Qin = 14.01 CFS @ 12.20 HRS, VOLUME= .52 AF
Qout= 13.39 CFS @ 12.24 HRS, VOLUME= .52 AF, ATTEN= 4%, LAG= 1.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.55
.20	2.40	8.43
.30	3.90	17.31
.43	6.15	33.43
.60	9.60	62.79
.80	14.40	110.39
1.00	20.00	173.46

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .04
LENGTH= 320 FT
SLOPE= .094 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .27 FT
PEAK VELOCITY= 4.2 FPS
TRAVEL TIME = 1.3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 71 **OVERLAND FLOW**

Qin = 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.03
.20	2.40	6.73
.30	3.90	13.83
.43	6.15	26.71
.60	9.60	50.17
.80	14.40	88.19
1.00	20.00	138.58

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .04
LENGTH= 250 FT
SLOPE= .06 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 0.00 FT
PEAK VELOCITY= 0.0 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 84 **STONE SWALE**

Qin = 102.5 CFS @ 12.21 HRS, VOLUME= 8.03 AF
Qout= 101.2 CFS @ 12.23 HRS, VOLUME= 8.03 AF, ATTEN= 1%, LAG= 1.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.72	8.58
.40	3.68	27.99
.60	5.89	56.69
.86	9.12	107.64
1.20	13.96	198.16
1.60	20.56	341.38
2.00	28.12	527.27

8' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 600 FT
SLOPE= .17 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .84 FT
PEAK VELOCITY= 11.7 FPS
TRAVEL TIME = .9 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 85 **CULVERT**

Qin = 102.7 CFS @ 12.21 HRS, VOLUME= 8.03 AF
Qout= 102.5 CFS @ 12.21 HRS, VOLUME= 8.03 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.45	.83	3.98
.90	2.26	16.69
1.35	4.01	37.31
3.15	11.89	159.53
3.60	13.64	186.25
4.05	15.08	203.08
4.23	15.51	204.97
4.37	15.77	203.07
4.50	15.90	190.55

54" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .008 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.31 FT
PEAK VELOCITY= 12.5 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 86 **STONE SWALE**

Qin = 114.6 CFS @ 12.13 HRS, VOLUME= 8.05 AF
Qout= 102.7 CFS @ 12.21 HRS, VOLUME= 8.03 AF, ATTEN= 10%, LAG= 5.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.24
.40	1.68	7.74
.60	2.89	16.58
.86	4.82	33.64
1.20	7.96	66.71
1.60	12.56	123.51
2.00	18.12	202.31

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 1000 FT
SLOPE= .075 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.46 FT
PEAK VELOCITY= 9.5 FPS
TRAVEL TIME = 1.8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 87 **STONE SWALE**

Qin = 34.03 CFS @ 12.00 HRS, VOLUME= 1.91 AF
Qout= 31.03 CFS @ 12.03 HRS, VOLUME= 1.91 AF, ATTEN= 9%, LAG= 2.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.59
.40	1.68	8.94
.60	2.89	19.15
.86	4.82	38.84
1.20	7.96	77.03
1.60	12.56	142.62
2.00	18.12	233.61

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 630 FT
SLOPE= .1 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .78 FT
PEAK VELOCITY= 7.8 FPS
TRAVEL TIME = 1.4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 88 **STONE SWALE**

Qin = 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.0	0.00
.20	10.2	61.23
.40	20.6	195.37
.60	31.4	386.07
.86	46.0	708.57
1.20	65.8	1246.89
1.60	90.2	2038.78
2.00	116.0	2995.05

50' x 2' CHANNEL
SIDE SLOPE= .25 '/'
n= .04
LENGTH= 300 FT
SLOPE= .23 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 0.00 FT
PEAK VELOCITY= 0.0 FPS
TRAVEL TIME = 0.0 MIN
SPAN=

REACH 89 **OVERLAND FLOW**

Qin = 6.07 CFS @ 12.54 HRS, VOLUME= 1.28 AF
Qout= 6.00 CFS @ 12.62 HRS, VOLUME= 1.28 AF, ATTEN= 1%, LAG= 5.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.42
.20	2.40	11.33
.30	3.90	23.28
.43	6.15	44.96
.60	9.60	84.44
.80	14.40	148.45
1.00	20.00	233.27

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .04
LENGTH= 550 FT
SLOPE= .17 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .13 FT
PEAK VELOCITY= 3.9 FPS
TRAVEL TIME = 2.3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 90 **OVERLAND FLOW**

Qin = 79.79 CFS @ 12.03 HRS, VOLUME= 4.09 AF
Qout= 73.91 CFS @ 12.09 HRS, VOLUME= 4.08 AF, ATTEN= 7%, LAG= 3.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.22
.20	2.40	10.65
.30	3.90	21.87
.43	6.15	42.23
.60	9.60	79.32
.80	14.40	139.45
1.00	20.00	219.12

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .04
LENGTH= 750 FT
SLOPE= .15 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .57 FT
PEAK VELOCITY= 8.1 FPS
TRAVEL TIME = 1.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 100

Not described

Qin = 426.0 CFS @ 12.47 HRS, VOLUME= 63.51 AF
Qout= 426.0 CFS @ 12.47 HRS, VOLUME= 63.51 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)

- METHOD
PEAK DEPTH= 0.00 FT
PEAK VELOCITY= 0.0 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 199 **OVERLAND FLOW**

Qin = 145.5 CFS @ 12.14 HRS, VOLUME= 25.98 AF
Qout= 132.9 CFS @ 13.30 HRS, VOLUME= 25.79 AF, ATTEN= 9%, LAG= 69.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.82
.20	2.40	9.33
.30	3.90	19.16
.43	6.15	37.01
.60	9.60	69.51
.80	14.40	122.20
1.00	20.00	192.03

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 2820 FT
SLOPE= .18 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .83 FT
PEAK VELOCITY= 8.7 FPS
TRAVEL TIME = 5.4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 200 **EXISTING CULVERT, ASSUME MAX DISCHARGE**

Qin = 232.0 CFS @ 12.36 HRS, VOLUME= 25.98 AF
Qout= 145.5 CFS @ 12.14 HRS, VOLUME= 25.98 AF, ATTEN= 37%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	.37	2.78
.60	1.01	11.64
.90	1.78	26.03
2.10	5.29	111.29
2.40	6.06	129.93
2.70	6.70	141.67
2.82	6.90	142.98
2.91	7.01	141.66
3.00	7.07	132.92

36" PIPE

n= .02
LENGTH= 47 FT
SLOPE= .094 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 3.00 FT
PEAK VELOCITY= 21.1 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 299 **OVERLAND FLOW**

Qin = 3.83 CFS @ 11.40 HRS, VOLUME= 3.02 AF
Qout= 3.83 CFS @ 11.50 HRS, VOLUME= 2.98 AF, ATTEN= 0%, LAG= 6.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.57
.20	2.40	8.52
.30	3.90	17.50
.43	6.15	33.79
.60	9.60	63.46
.80	14.40	111.56
1.00	20.00	175.29

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 750 FT
SLOPE= .15 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .12 FT
PEAK VELOCITY= 2.8 FPS
TRAVEL TIME = 4.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 300 **EXIISTING CULVERT**

Qin = 85.09 CFS @ 12.48 HRS, VOLUME= 10.94 AF
Qout= 3.83 CFS @ 11.40 HRS, VOLUME= 3.02 AF, ATTEN= 96%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.12	.06	.08
.23	.15	.34
.35	.27	.75
.82	.80	3.20
.93	.92	3.74
1.05	1.01	4.08
1.10	1.04	4.12
1.13	1.06	4.08
1.17	1.07	3.83

14" PIPE

n= .02
LENGTH= 50 FT
SLOPE= .012 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.17 FT
PEAK VELOCITY= 4.1 FPS
TRAVEL TIME = .2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

POND 1 **STORM POND, WILLOWEMOC, 7"/HR TO 2.5' DEPT**

Qin = 120.4 CFS @ 12.01 HRS, VOLUME= 9.11 AF
Qout= 116.0 CFS @ 12.13 HRS, VOLUME= 8.45 AF, ATTEN= 4%, LAG= 7.0 MIN
Qpri= 1.43 CFS @ 12.13 HRS, VOLUME= .41 AF
Qsec= 114.6 CFS @ 12.13 HRS, VOLUME= 8.05 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1996.0	0	0	0
1997.0	12000	6000	6000
2000.0	22000	51000	57000

STOR-IND METHOD
PEAK STORAGE = 59048 CF
PEAK ELEVATION= 2000.1 FT
FLOOD ELEVATION= 2001.0 FT
START ELEVATION= 1996.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 36.7 MIN (8.45 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1997.5'	**EXFILTRATION**
			V= .0097 FPM over (SURFACE AREA - 13667 SF)
2	S	1997.0'	**48" CULVERT X 2**
			n=.012 L=50' S=.01'/' Ke=.5 Cc=.9 Cd=.6
3	2	1998.2'	**5' x .5' ORIFICE/GRATE X 2**
			Q=.6 Width 2/3 SQR(2g) (H^1.5 - [H-Height]^1.5)
4	2	1999.0'	**42" HORIZONTAL ORIFICE/GRATE X 2**
			Q=.6 Area SQR(2gH) (Limited to weir flow @ low head)

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Culvert
  ├──3=Orifice/Grate
  └──4=Orifice/Grate

POND 2 **STORM POND, WILLOWEMOC, 7"/HR TO 2.5' DEPT**

Qin = 128.4 CFS @ 11.94 HRS, VOLUME= 11.60 AF
Qout= 122.6 CFS @ 12.01 HRS, VOLUME= 10.18 AF, ATTEN= 5%, LAG= 3.9 MIN
Qpri= 2.17 CFS @ 12.01 HRS, VOLUME= 1.07 AF
Qsec= 120.4 CFS @ 12.01 HRS, VOLUME= 9.11 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2001.0	0	0	0
2002.0	15000	7500	7500
2005.0	28000	64500	72000

STOR-IND METHOD
PEAK STORAGE = 84825 CF
PEAK ELEVATION= 2005.6 FT
FLOOD ELEVATION= 2006.0 FT
START ELEVATION= 2001.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 57.6 MIN (10.18 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2002.5'	**EXFILTRATION**
			V= .0097 FPM over (SURFACE AREA - 17167 SF)
2	S	2004.5'	**65' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 5 **IRRIGATION POND**

Qin = 110.3 CFS @ 12.01 HRS, VOLUME= 6.91 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN=100%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1937.9	0	0	0
1938.0	120000	6000	6000
1940.0	140000	260000	266000
1942.0	160000	300000	566000

STOR-IND METHOD
PEAK STORAGE = 300553 CF
PEAK ELEVATION= 1940.2 FT
FLOOD ELEVATION= 1942.0 FT
START ELEVATION= 1937.9 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1941.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 7 **STORM POND, LEWBEACH/ELKA, 7"/HR TO 5' DEP**

Qin = 23.51 CFS @ 12.03 HRS, VOLUME= 1.47 AF
Qout= 15.17 CFS @ 12.20 HRS, VOLUME= 1.26 AF, ATTEN= 35%, LAG= 10.5 MIN
Qpri= 1.16 CFS @ 12.20 HRS, VOLUME= .74 AF
Qsec= 14.01 CFS @ 12.20 HRS, VOLUME= .52 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1919.0	0	0	0
1920.0	4800	2400	2400
1925.0	9000	34500	36900

STOR-IND METHOD
PEAK STORAGE = 21812 CF
PEAK ELEVATION= 1922.8 FT
FLOOD ELEVATION= 1926.0 FT
START ELEVATION= 1919.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 108.8 MIN (1.26 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1919.0'	**EXFILTRATION**
			V= .0097 FPM over SURFACE AREA
2	S	1922.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 10 **STORM POND, LEWBEACH, 6.3"/HR TO 2.5' DEPT**

Qin = 90.41 CFS @ 11.89 HRS, VOLUME= 3.98 AF
Qout= 6.77 CFS @ 12.54 HRS, VOLUME= 1.71 AF, ATTEN= 93%, LAG= 38.7 MIN
Qpri= .70 CFS @ 12.54 HRS, VOLUME= .42 AF
Qsec= 6.07 CFS @ 12.54 HRS, VOLUME= 1.28 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1979.0	0	0	0
1980.0	15000	7500	7500
1985.0	25000	100000	107500

STOR-IND METHOD
PEAK STORAGE = 105621 CF
PEAK ELEVATION= 1984.9 FT
FLOOD ELEVATION= 1986.0 FT
START ELEVATION= 1979.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 192.5 MIN (1.69 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1982.5'	**EXFILTRATION**
			V= .0087 FPM over (SURFACE AREA - 20000 SF)
2	S	1984.5'	**12' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 11 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 107.6 CFS @ 12.11 HRS, VOLUME= 9.98 AF
Qout= 110.0 CFS @ 12.15 HRS, VOLUME= 8.90 AF, ATTEN= 0%, LAG= 1.9 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1894.0	0	0	0
1895.0	9000	4500	4500
1900.0	17500	66250	70750

STOR-IND METHOD
PEAK STORAGE = 63543 CF
PEAK ELEVATION= 1899.5 FT
FLOOD ELEVATION= 1901.0 FT
START ELEVATION= 1894.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 53.5 MIN (8.82 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1898.0'	**30' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 12 **STORM POND, ELKA, 7"/HR TO 5' DEPTH**

Qin = 35.42 CFS @ 11.95 HRS, VOLUME= 1.88 AF
Qout= 14.30 CFS @ 12.14 HRS, VOLUME= 1.43 AF, ATTEN= 60%, LAG= 11.2 MIN
Qpri= 1.65 CFS @ 12.14 HRS, VOLUME= .98 AF
Qsec= 12.65 CFS @ 12.14 HRS, VOLUME= .45 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1894.0	0	0	0
1895.0	3700	1850	1850
1900.0	10200	34750	36600

STOR-IND METHOD
PEAK STORAGE = 36054 CF
PEAK ELEVATION= 1899.9 FT
FLOOD ELEVATION= 1901.0 FT
START ELEVATION= 1894.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 145.4 MIN (1.42 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1894.0'	**EXFILTRATION**
			V= .0097 FPM over SURFACE AREA
2	S	1899.0'	**7' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 13 **STORM POND, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 120.0 CFS @ 11.96 HRS, VOLUME= 9.43 AF
Qout= 81.72 CFS @ 12.07 HRS, VOLUME= 8.14 AF, ATTEN= 32%, LAG= 6.5 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2064.0	0	0	0
2065.0	6600	3300	3300
2070.0	15000	54000	57300
2074.0	20000	70000	127300

STOR-IND METHOD
PEAK STORAGE = 96147 CF
PEAK ELEVATION= 2072.2 FT
FLOOD ELEVATION= 2074.8 FT
START ELEVATION= 2064.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 75.4 MIN (8.14 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2067.4'	**42" CULVERT**
			n=.012 L=450' S=.01'/' Ke=.5 Cc=.9 Cd=.6
2	1	2069.0'	**2' x 1' ORIFICE/GRATE**
			Q=.6 Width 2/3 SQR(2g) (H^1.5 - [H-Height]^1.5)
3	1	2070.0'	**42" HORIZONTAL ORIFICE/GRATE**
			Q=.6 Area SQR(2gH) (Limited to weir flow @ low head)

Primary Discharge
└──1=Culvert
├──2=Orifice/Grate
└──3=Orifice/Grate

POND 14 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 28.73 CFS @ 11.94 HRS, VOLUME= 1.51 AF
Qout= 5.44 CFS @ 12.25 HRS, VOLUME= .74 AF, ATTEN= 81%, LAG= 18.7 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1914.0	0	0	0
1915.0	4600	2300	2300
1920.0	9000	34000	36300

STOR-IND METHOD
PEAK STORAGE = 35640 CF
PEAK ELEVATION= 1919.9 FT
FLOOD ELEVATION= 1921.0 FT
START ELEVATION= 1914.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 168.7 MIN (.74 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1919.5'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 15 **STORM POND, ELKA, 7"/HR TO 5' DEPTH**

Qin = 50.75 CFS @ 11.94 HRS, VOLUME= 2.67 AF
Qout= 49.64 CFS @ 11.98 HRS, VOLUME= 2.29 AF, ATTEN= 2%, LAG= 2.5 MIN
Qpri= .61 CFS @ 11.98 HRS, VOLUME= .41 AF
Qsec= 49.02 CFS @ 11.98 HRS, VOLUME= 1.88 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1879.0	0	0	0
1880.0	3100	1550	1550
1885.0	5200	20750	22300

STOR-IND METHOD
PEAK STORAGE = 23623 CF
PEAK ELEVATION= 1885.3 FT
FLOOD ELEVATION= 1886.0 FT
START ELEVATION= 1879.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 63.2 MIN (2.29 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1879.0'	**EXFILTRATION**
			V= .0069 FPM over SURFACE AREA
2	S	1883.5'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 16 **STORM POND, ELKA, 7"/HR TO 5' DEPTH**

Qin = 88.04 CFS @ 12.00 HRS, VOLUME= 5.60 AF
Qout= 42.15 CFS @ 12.23 HRS, VOLUME= 4.17 AF, ATTEN= 52%, LAG= 13.6 MIN
Qpri= 3.77 CFS @ 12.23 HRS, VOLUME= 2.47 AF
Qsec= 38.39 CFS @ 12.23 HRS, VOLUME= 1.70 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1829.0	0	0	0
1830.0	13500	6750	6750
1835.0	24000	93750	100500

STOR-IND METHOD
PEAK STORAGE = 102576 CF
PEAK ELEVATION= 1835.1 FT
FLOOD ELEVATION= 1836.0 FT
START ELEVATION= 1829.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 132.1 MIN (4.13 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1829.0'	**EXFILTRATION**
			V= .0093 FPM over SURFACE AREA
2	S	1834.0'	**17' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 17 **STORM POND, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 89.01 CFS @ 12.04 HRS, VOLUME= 7.98 AF
Qout= 102.8 CFS @ 12.04 HRS, VOLUME= 7.25 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1874.0	0	0	0
1875.0	4500	2250	2250
1880.0	10000	36250	38500

STOR-IND METHOD
PEAK STORAGE = 39851 CF
PEAK ELEVATION= 1880.2 FT
FLOOD ELEVATION= 1881.0 FT
START ELEVATION= 1874.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 43.7 MIN (7.25 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1879.0'	**40' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 20 **STORM POND, ELKA, 7"/HR TO 5' DEPTH**

Qin = 191.9 CFS @ 12.07 HRS, VOLUME= 13.47 AF
Qout= 195.8 CFS @ 12.10 HRS, VOLUME= 13.36 AF, ATTEN= 0%, LAG= 1.7 MIN
Qpri= 194.5 CFS @ 12.10 HRS, VOLUME= 12.69 AF
Qsec= 1.27 CFS @ 12.10 HRS, VOLUME= .67 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1749.0	0	0	0
1750.0	5000	2500	2500
1755.0	10000	37500	40000

STOR-IND METHOD
PEAK STORAGE = 24100 CF
PEAK ELEVATION= 1752.9 FT
FLOOD ELEVATION= 1756.0 FT
START ELEVATION= 1749.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 6.3 MIN (13.36 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1750.0'	**42" CULVERT X 4**
			n=.012 L=50' S=.018'/' Ke=.5 Cc=.9 Cd=.6
2	S	1749.0'	**EXFILTRATION**
			V= .0097 FPM over SURFACE AREA

Primary Discharge
└──1=Culvert

Secondary Discharge
└──2=Exfiltration

POND 21 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 62.97 CFS @ 12.13 HRS, VOLUME= 6.91 AF
Qout= 61.95 CFS @ 12.15 HRS, VOLUME= 6.70 AF, ATTEN= 2%, LAG= 1.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1899.0	0	0	0
1900.0	1000	500	500
1905.0	3900	12250	12750

STOR-IND METHOD
PEAK STORAGE = 13548 CF
PEAK ELEVATION= 1905.3 FT
FLOOD ELEVATION= 1906.0 FT
START ELEVATION= 1899.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 17.4 MIN (6.63 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1903.2'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 22 **STORM POND, LEWBEACH, 6.3"/HR TO 2.5' DEPT**

Qin = 86.75 CFS @ 11.99 HRS, VOLUME= 4.81 AF
Qout= 80.31 CFS @ 12.03 HRS, VOLUME= 4.24 AF, ATTEN= 7%, LAG= 2.4 MIN
Qpri= .52 CFS @ 12.03 HRS, VOLUME= .15 AF
Qsec= 79.79 CFS @ 12.03 HRS, VOLUME= 4.09 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1994.0	0	0	0
1995.0	4500	2250	2250
2000.0	10000	36250	38500

STOR-IND METHOD
PEAK STORAGE = 40044 CF
PEAK ELEVATION= 2000.2 FT
FLOOD ELEVATION= 2001.0 FT
START ELEVATION= 1994.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 55.1 MIN (4.2 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1997.0'	**EXFILTRATION**
			V= .0087 FPM over (SURFACE AREA - 6700 SF)
2	S	1998.0'	**12' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 23 **STORM POND, ELKA, 7"/HR TO 5' DEPTH**

Qin = 47.87 CFS @ 12.04 HRS, VOLUME= 3.02 AF
Qout= 47.23 CFS @ 12.06 HRS, VOLUME= 2.91 AF, ATTEN= 1%, LAG= 1.4 MIN
Qpri= .41 CFS @ 12.06 HRS, VOLUME= .26 AF
Qsec= 46.82 CFS @ 12.06 HRS, VOLUME= 2.65 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1849.0	0	0	0
1850.0	1200	600	600
1855.0	3000	10500	11100

STOR-IND METHOD
PEAK STORAGE = 8465 CF
PEAK ELEVATION= 1853.7 FT
FLOOD ELEVATION= 1856.0 FT
START ELEVATION= 1849.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 20.5 MIN (2.88 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1849.0'	**EXFILTRATION**
			V= .0097 FPM over SURFACE AREA
2	S	1852.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 24 **STORM POND, VLY, ASSUME NO PERC**

Qin = 70.33 CFS @ 11.91 HRS, VOLUME= 3.41 AF
Qout= 69.39 CFS @ 11.94 HRS, VOLUME= 2.85 AF, ATTEN= 1%, LAG= 1.8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1914.0	0	0	0
1915.0	3400	1700	1700
1920.0	7800	28000	29700

STOR-IND METHOD
PEAK STORAGE = 32439 CF
PEAK ELEVATION= 1920.5 FT
FLOOD ELEVATION= 1921.0 FT
START ELEVATION= 1914.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 68.6 MIN (2.82 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1919.0'	**20' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 60 **STORM POND, ONTEORA-SUNY, NO PERC ASSUMED**

Qin = 26.25 CFS @ 11.85 HRS, VOLUME= 2.76 AF
Qout= 3.20 CFS @ 13.29 HRS, VOLUME= 2.34 AF, ATTEN= 88%, LAG= 86.5 MIN
Qpri= 3.20 CFS @ 13.29 HRS, VOLUME= 2.34 AF
Qsec= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1994.0	0	0	0
1995.0	100	50	50
2000.0	1300	3500	3550
2005.0	4500	14500	18050
2010.0	10000	36250	54300

STOR-IND METHOD
PEAK STORAGE = 30374 CF
PEAK ELEVATION= 2006.7 FT
FLOOD ELEVATION= 2011.0 FT
START ELEVATION= 1994.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 116.7 MIN (2.34 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1995.0'	**6" ORIFICE/GRATE**
			Q=.6 PI r^2 SQR(2g) SQR(H-r) (Use H/2 if H<d)
2	S	2007.0'	**12" CULVERT**
			n=.012 L=50' S=.01'/' Ke=.5 Cc=.9 Cd=.6

Primary Discharge
└──1=Orifice/Grate

Secondary Discharge
└──2=Culvert

POND 108 **STORM POND, LEWBEACH, ASSUMED NO PERC**

Qin = 68.95 CFS @ 12.03 HRS, VOLUME= 4.38 AF
Qout= 49.44 CFS @ 12.17 HRS, VOLUME= 3.37 AF, ATTEN= 28%, LAG= 8.4 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1799.0	0	0	0
1800.0	7000	3500	3500
1805.0	17000	60000	63500

STOR-IND METHOD
PEAK STORAGE = 63879 CF
PEAK ELEVATION= 1805.0 FT
FLOOD ELEVATION= 1806.0 FT
START ELEVATION= 1799.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 94.6 MIN (3.37 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1803.2'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 109 **STORM POND, LEWBEACH, ASSUMED NO PERC**

Qin = 26.42 CFS @ 11.96 HRS, VOLUME= 1.41 AF
Qout= 27.74 CFS @ 12.01 HRS, VOLUME= 1.14 AF, ATTEN= 0%, LAG= 2.7 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1774.0	0	0	0
1775.0	1000	500	500
1780.0	4200	13000	13500

STOR-IND METHOD
PEAK STORAGE = 14997 CF
PEAK ELEVATION= 1780.6 FT
FLOOD ELEVATION= 1781.0 FT
START ELEVATION= 1774.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 78.5 MIN (1.14 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1779.2'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 110 **STORM POND, LEWBEACH, 7"/HR TO 5' DEPTH**

Qin = 33.12 CFS @ 11.94 HRS, VOLUME= 1.73 AF
Qout= 32.96 CFS @ 11.99 HRS, VOLUME= 1.46 AF, ATTEN= 0%, LAG= 3.2 MIN
Qpri= .72 CFS @ 11.99 HRS, VOLUME= .45 AF
Qsec= 32.24 CFS @ 11.99 HRS, VOLUME= 1.02 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1794.0	0	0	0
1795.0	1500	750	750
1800.0	4200	14250	15000

STOR-IND METHOD
PEAK STORAGE = 16406 CF
PEAK ELEVATION= 1800.5 FT
FLOOD ELEVATION= 1801.0 FT
START ELEVATION= 1794.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 67.9 MIN (1.45 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1794.0'	**EXFILTRATION**
			V= .0097 FPM over SURFACE AREA
2	S	1799.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

100 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 8.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	1.69	1.4	3%98 28%98 69%74	81	-	15.68	11.86	.72
2	.34	.4	29%98 65%98 6%74	97	-	3.66	11.82	.17
3	.34	.4	29%98 65%98 6%74	97	-	3.66	11.82	.17
4	1.49	2.3	12%98 32%98 56%74	84	-	14.94	11.87	.67
5	5.82	7.3	8%98 6%98 28%70 58%74	76	-	44.90	11.92	2.26
6	29.71	36.3	2%98 2%98 1%98 23%74 73%70	72	-	105.5	12.28	10.53
7	7.23	6.7	8%98 63%74 29%70	75	-	56.32	11.91	2.75
8	2.07	4.7	3%98 19%98 78%74	79	-	19.03	11.89	.85
9	2.60	3.4	2%98 18%98 35%98 46%74	87	-	27.40	11.88	1.21
10	5.35	3.7	2%98 18%98 24%98 57%74	84	-	54.27	11.88	2.39
11	2.82	4.0	6%98 93%74 1%70	76	-	25.05	11.89	1.09
12	22.35	32.7	2%98 1%98 74%74 23%70	74	-	89.77	12.23	8.30
13	7.76	12.6	2%98 1%98 1%98 26%74 70%70	72	-	49.11	11.99	2.76
14	5.92	8.1	77%74 23%70	73	-	41.22	11.93	2.15
15	9.92	8.2	4%98 1%98 3%98 83%74 9%70	75	-	71.85	11.93	3.77
16	7.00	5.9	3%98 1%98 85%74 10%70	75	-	56.77	11.90	2.66
17	4.76	7.4	50%74 25%70 5%98 20%39	67	-	29.47	11.93	1.50
18	8.17	9.3	3%98 78%74 20%70	74	-	56.98	11.96	3.04
20	14.80	4.5	3%98 8%98 29%70 60%74	75	-	127.2	11.89	5.62
21	19.50	12.1	2%98 45%74 53%70	72	-	125.1	11.99	6.93
22	12.70	6.6	2%98 89%74 6%70 2%98 1%98	75	-	99.44	11.91	4.82
23	4.51	17.2	53%70 47%74	72	-	24.49	12.04	1.60

24	7.35	9.4	7%74	93%70			70	-	46.84	11.96	2.49
25	17.54	33.1	0%98	3%98	7%74	90%70	71	-	64.95	12.23	6.08
40	19.05	34.7	5%98	8%98	4%98	47%74 36%70	77	-	78.52	12.25	7.53
41	8.26	8.0	3%98	2%98	14%74	81%70	72	-	56.46	11.93	2.94
42	2.11	9.0	23%74	77%70			71	-	13.80	11.95	.73
55	.10	2.3	100%98				98	-	1.12	11.87	.05
66	.20	1.6	45%98	55%74			85	-	1.98	11.86	.09
77	.09	.7	100%98				98	-	.96	11.82	.05
88	.14	4.6	100%98				98	-	1.56	11.89	.07
101	4.37	.9	3%98	1%98	47%74	50%70	73	-	33.45	11.85	1.59
102	2.20	1.5	12%98	8%98	57%74	23%70	78	-	19.57	11.86	.89
103	1.94	2.3	32%98	17%98	9%98	34%74 8%70	88	-	20.37	11.87	.92
104	3.03	2.6	15%98	4%98	16%98	65%74	82	-	29.79	11.87	1.31
105	21.06	15.1	1%98	3%98	4%98	15%98 67%74 10%70	79	-	142.4	12.01	8.66
106	14.30	16.4	2%98	3%98	3%98	80%74 11%70	76	-	87.27	12.03	5.55
107	5.80	15.8	65%74	35%70			73	-	33.82	12.03	2.11
108	17.25	16.2	3%98	1%98	58%74	38%70	73	-	99.22	12.03	6.27
109	5.53	9.5	74%74	26%70			73	-	37.72	11.96	2.01
110	6.63	8.1	77%74	21%70	2%98	1%98	74	-	47.21	11.93	2.47
111	13.31	19.3	1%98	0%0	0%98	47%74 51%70	72	-	68.66	12.07	4.73
112	7.18	8.7	94%74	6%70			74	-	49.90	11.95	2.67
121	17.81	24.2	2%98	4%98	5%98	42%74 48%70	74	-	85.99	12.13	6.62
200	100.00	42.8	100%74				74	-	335.1	12.35	37.08
300	42.20	52.3	100%74				74	-	122.4	12.47	15.62

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	30.0	-	-	-	-	.012	350	.0100	10.0	.6	33.50
2	24.0	-	-	-	-	.012	190	.0100	8.6	.4	18.45
3	24.0	-	-	-	-	.012	30	.0100	8.3	.1	15.14
4	18.0	-	-	-	-	.012	200	.0100	7.3	.5	11.69
5	-	3.0	2.0	.33	.33	.040	330	.3200	11.7	.5	32.76
6	36.0	-	-	-	-	.012	320	.0100	11.5	.5	62.75
23	12.0	-	-	-	-	.012	20	.0100	4.8	.1	1.56
25	36.0	-	-	-	-	.012	380	.0100	11.5	.6	60.44
26	48.0	-	-	-	-	.012	570	.0060	10.4	.9	80.10
27	12.0	-	-	-	-	.012	20	.0100	4.3	.1	1.11
28	18.0	-	-	-	-	.012	20	.0050	3.8	.1	1.97
29	18.0	-	-	-	-	.012	20	.0050	3.1	.1	.95
30	36.0	-	-	-	-	.012	560	.0050	8.2	1.1	51.31
31	48.0	-	-	-	-	.012	370	.0120	15.4	.4	167.0
33	48.0	-	-	-	-	.012	400	.0080	12.5	.5	125.0
34	48.0	-	-	-	-	.012	220	.0090	13.4	.3	145.3
39	-	10.0	1.0	.25	.25	.030	480	.0800	5.6	1.4	16.66
40	18.0	-	-	-	-	.012	50	.0200	10.3	.1	17.41
41	-	10.0	1.0	.10	.10	.050	130	.3000	6.2	.3	22.45
42	-	10.0	1.0	.10	.10	.050	450	.2900	10.9	.7	161.1
43	-	5.0	2.0	.33	.33	.040	600	.0750	9.7	1.0	119.9
44	-	5.0	2.0	.33	.33	.040	500	.0900	8.8	1.0	66.47
45	-	8.0	2.0	.33	.33	.040	175	.2280	15.2	.2	173.4
46	-	10.0	1.0	.10	.10	.050	280	.2500	8.1	.6	66.94
47	-	10.0	1.0	.10	.10	.040	900	.0940	5.8	2.6	36.83

48	30.0	-	-	-	-	.012	75	.0080	9.2	.1	40.87
49	-	3.0	2.0	.33	.33	.040	140	.1400	7.2	.3	17.00
50	18.0	-	-	-	-	.012	50	.0200	10.3	.1	17.05
52	-	10.0	2.5	.20	.20	.040	1400	.0321	8.5	2.8	387.9
53	-	10.0	3.0	.20	.20	.040	1400	.0320	8.2	2.8	339.3
54	-	10.0	3.0	.20	.20	.040	750	.0270	6.7	1.9	202.0
55	-	10.0	3.0	.20	.20	.040	200	.0250	6.5	.5	209.1
56	-	10.0	3.0	.20	.20	.040	1000	.0150	4.9	3.4	141.1
57	-	10.0	1.0	.10	.10	.050	1300	.1340	3.1	7.0	5.83
58	30.0	-	-	-	-	.012	50	.0100	5.4	.2	3.37
59	-	5.0	3.0	.33	.33	.040	430	.0580	3.6	2.0	2.07
60	12.0	-	-	-	-	.020	40	.0080	3.0	.2	2.07
65	-	-	-	-	-	-	-	-	0.0	0.0	178.0 N
66	-	10.0	2.0	.20	.20	.040	250	.0800	8.4	.5	117.0
67	-	10.0	1.0	.10	.10	.050	400	.1250	5.2	1.3	30.26
68	-	10.0	2.0	.20	.20	.040	350	.0280	5.8	1.0	115.8
69	-	10.0	2.0	.20	.20	.040	1300	.0270	5.4	4.0	97.02
70	-	10.0	1.0	.10	.10	.040	320	.0940	5.1	1.0	25.27
71	-	10.0	1.0	.10	.10	.040	250	.0600	0.0	0.0	0.00
84	-	8.0	2.0	.33	.33	.040	600	.1700	13.3	.8	154.7
85	54.0	-	-	-	-	.012	50	.0080	13.4	.1	157.6
86	-	3.0	2.0	.33	.33	.040	1000	.0750	10.6	1.6	157.9
87	-	3.0	2.0	.33	.33	.040	630	.1000	8.6	1.2	45.31
88	-	50.0	2.0	.25	.25	.040	300	.2300	0.0	0.0	0.00
89	-	10.0	1.0	.10	.10	.040	550	.1700	6.8	1.3	31.58
90	-	10.0	1.0	.10	.10	.040	750	.1500	9.0	1.4	107.9
100	-	-	-	-	-	-	-	-	0.0	0.0	652.8 N
199	-	10.0	1.0	.10	.10	.050	2820	.1800	8.7	5.4	132.9

200	36.0	-	-	-	-	.020	47	.0940	21.4	0.0	132.9
299	-	10.0	1.0	.10	.10	.050	750	.1500	2.8	4.4	3.94
300	14.0	-	-	-	-	.020	50	.0120	4.1	.2	3.99

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)
1	1996.0	2001.0	2000.6	1.53	168.5	159.1	1.67	157.4	6	2.9
2	2001.0	2006.0	2006.0	2.13	179.2	170.9	2.44	168.5	5	3.8
5	1937.9	1942.0	1941.0	9.53	152.2	0.00			100	0.0
7	1919.0	1926.0	1923.3	.57	33.82	29.56	1.22	28.34	13	6.1
10	1979.0	1986.0	1986.0	2.91	127.2	31.58	1.00	30.58	75	12.2
11	1894.0	1901.0	1899.8	1.57	154.5	151.1			2	2.0
12	1894.0	1901.0	1900.9	.98	49.90	31.87	1.84	30.04	36	7.6
13	2064.0	2074.8	2074.0	2.94	167.0	102.5			39	7.8
14	1914.0	1921.0	1920.8	.95	41.22	22.02			47	9.9
15	1879.0	1886.0	1885.8	.59	71.85	69.91	.64	69.27	3	2.3
16	1829.0	1836.0	1835.9	2.71	119.7	84.32	4.06	80.25	30	8.5
17	1874.0	1881.0	1880.9	1.03	173.2	171.9			1	1.1
20	1749.0	1756.0	1754.5	.83	320.0	307.7	306.1	1.53	4	2.7
21	1899.0	1906.0	1906.0	.35	90.11	88.71			2	1.2
22	1994.0	2001.0	2000.9	1.04	125.1	114.8	.63	114.1	8	2.1
23	1849.0	1856.0	1854.2	.22	69.68	68.38	.44	67.94	2	1.3
24	1914.0	1921.0	1920.9	.80	99.44	90.88			9	2.4
60	1994.0	2011.0	2008.0	.91	35.52	5.89	3.37	2.52	83	25.3
108	1799.0	1806.0	1805.9	1.71	99.22	84.41			15	5.7
109	1774.0	1781.0	1780.9	.37	37.72	36.36			4	1.4
110	1794.0	1801.0	1800.9	.41	47.21	45.83	.76	45.06	3	2.2

BIG INDIAN PLATEAU

INCLUDES:

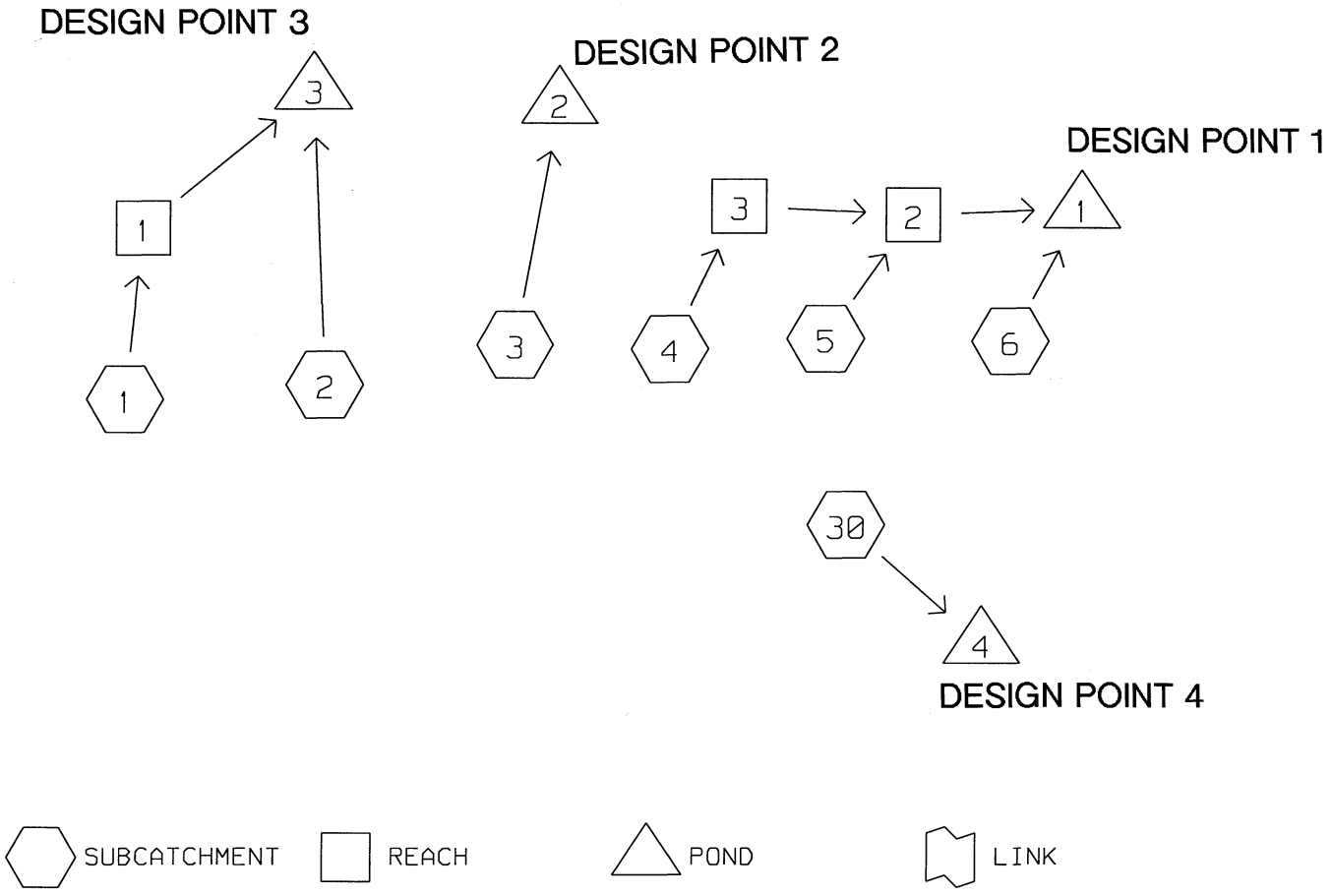
BELLEAYRE HIGHLANDS

AND

BIG INDIAN RESORT and SPA
AND
BIG INDIAN COUNTRY CLUB

PRE-DEVELOPMENT

WATERSHED ROUTING ==========



1 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 3.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	153.20	70.8	1%89 0%87 1%71 98%70	70	-	64.42	12.79	11.18
2	44.40	42.7	0%98 1%89 1%87 5%71 94%70	70	-	27.08	12.40	3.29
3	447.40	103.0	0%98 0%87 1%71 99%70	70	-	141.0	13.25	32.01
4	64.30	56.3	4%71 96%70	70	-	32.04	12.59	4.73
5	213.00	103.6	0%98 1%71 99%70	70	-	67.12	13.23	15.23
6	170.50	80.2	0%0 2%71 98%70	70	-	65.18	12.91	12.37
30	315.72	95.5	0%98 5%71 95%70	70	-	105.7	13.15	22.70

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	-	3.0	3.0	.33	.33	.050	1100	.0900	7.6	2.4	63.89
2	-	10.0	3.0	.20	.20	.045	3600	.0290	5.0	11.9	90.91
3	-	10.0	3.0	.20	.20	.045	3000	.0290	3.6	14.1	28.73

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	138.9	138.9			0	0.0	N
2	0.0	0.0	0.0	0.00	141.0	141.0			0	0.0	N
3	0.0	0.0	0.0	0.00	79.22	79.22			0	0.0	N
4	0.0	0.0	0.0	0.00	105.7	105.7			0	0.0	N

10 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	153.20	70.8	1%89 0%87 1%71 98%70	70	-	198.8	12.73	32.04
2	44.40	42.7	0%98 1%89 1%87 5%71 94%70	70	-	83.06	12.37	9.40
3	447.40	103.0	0%98 0%87 1%71 99%70	70	-	435.9	13.15	92.15
4	64.30	56.3	4%71 96%70	70	-	98.98	12.54	13.53
5	213.00	103.6	0%98 1%71 99%70	70	-	207.6	13.17	43.86
6	170.50	80.2	0%0 2%71 98%70	70	-	201.4	12.86	35.51
30	315.72	95.5	0%98 5%71 95%70	70	-	325.5	13.06	65.27

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	-	3.0	3.0	.33	.33	.050	1100	.0900	10.2	1.8	197.8
2	-	10.0	3.0	.20	.20	.045	3600	.0290	6.9	8.7	282.6
3	-	10.0	3.0	.20	.20	.045	3000	.0290	5.1	9.8	93.24

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	454.7	454.7			0	0.0	N
2	0.0	0.0	0.0	0.00	435.9	435.9			0	0.0	N
3	0.0	0.0	0.0	0.00	247.7	247.7			0	0.0	N
4	0.0	0.0	0.0	0.00	325.5	325.5			0	0.0	N

25 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.30 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	153.20	70.8	1%89 0%87 1%71 98%70	70	-	216.7	12.73	34.84
2	44.40	42.7	0%98 1%89 1%87 5%71 94%70	70	-	90.48	12.36	10.21
3	447.40	103.0	0%98 0%87 1%71 99%70	70	-	475.2	13.15	100.23
4	64.30	56.3	4%71 96%70	70	-	107.9	12.54	14.71
5	213.00	103.6	0%98 1%71 99%70	70	-	226.3	13.17	47.71
6	170.50	80.2	0%0 2%71 98%70	70	-	219.6	12.86	38.61
30	315.72	95.5	0%98 5%71 95%70	70	-	354.9	13.05	70.99

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	-	3.0	3.0	.33	.33	.050	1100	.0900	10.4	1.8	215.6
2	-	10.0	3.0	.20	.20	.045	3600	.0290	7.1	8.5	308.1
3	-	10.0	3.0	.20	.20	.045	3000	.0290	5.2	9.6	101.7

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	496.8	496.8			0	0.0	N
2	0.0	0.0	0.0	0.00	475.2	475.2			0	0.0	N
3	0.0	0.0	0.0	0.00	270.8	270.8			0	0.0	N
4	0.0	0.0	0.0	0.00	354.9	354.9			0	0.0	N

SUBCATCHMENT 1

PEAK= 216.7 CFS @ 12.73 HRS, VOLUME= 34.84 AF

ACRES	CN		SCS TR-20 METHOD
1.71	89	C SOIL, GRAVEL ROAD	TYPE II 24-HOUR
.39	87	C SOIL, DIRT ROAD	RAINFALL= 6.30 IN
1.66	71	C SOIL, MEADOW	SPAN= 10-20 HRS, dt=.1 HRS
149.44	70	C SOIL, FOREST, GOOD CONDITION	
153.20	70		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	70.8
Forest w/Heavy Litter Kv=2.5 L=5200' s=.24 '/' V=1.22 fps		

SUBCATCHMENT 2

PEAK= 90.48 CFS @ 12.36 HRS, VOLUME= 10.21 AF

ACRES	CN		SCS TR-20 METHOD
.19	98	BUILDINGS	TYPE II 24-HOUR
.27	89	C SOIL, GRAVEL ROAD	RAINFALL= 6.30 IN
.32	87	C SOIL, DIRT ROAD	SPAN= 10-20 HRS, dt=.1 HRS
2.10	71	C SOIL, MEADOW	
41.52	70	C SOIL, FOREST, GOOD CONDITION	
44.40	70		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	42.7
Forest w/Heavy Litter Kv=2.5 L=3200' s=.25 '/' V=1.25 fps		

SUBCATCHMENT 3

PEAK= 475.2 CFS @ 13.15 HRS, VOLUME=100.23 AF

ACRES	CN		SCS TR-20 METHOD
.02	98	BUILDINGS	TYPE II 24-HOUR
.65	87	C SOIL, DIRT ROAD	RAINFALL= 6.30 IN
3.14	71	C SOIL, MEADOW	SPAN= 10-20 HRS, dt=.1 HRS
443.59	70	C SOIL, FOREST, GOOD CONDITION	
447.40	70		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	103.0
Forest w/Heavy Litter Kv=2.5 L=8600' s=.31 '/' V=1.39 fps		

SUBCATCHMENT 4

PEAK= 107.9 CFS @ 12.54 HRS, VOLUME= 14.71 AF

ACRES	CN		
2.60	71	C SOIL, MEADOW, GOOD CONDITION	SCS TR-20 METHOD
61.70	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
64.30	70		RAINFALL= 6.30 IN
			SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	35.3
Forest w/Heavy Litter Kv=2.5 L=2800' s=.28 '/' V=1.32 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	21.0
Short Grass Pasture Kv=7 L=1500' s=.029 '/' V=1.19 fps		
	Total Length= 4300 ft Total Tc=	56.3

SUBCATCHMENT 5

PEAK= 226.3 CFS @ 13.17 HRS, VOLUME= 47.71 AF

ACRES	CN		
.32	98	BUILDINGS	SCS TR-20 METHOD
2.60	71	C SOIL, MEADOW, GOOD CONDITION	TYPE II 24-HOUR
210.08	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
213.00	70		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	53.3
Forest w/Heavy Litter Kv=2.5 L=4000' s=.25 '/' V=1.25 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	50.3
Short Grass Pasture Kv=7 L=3600' s=.029 '/' V=1.19 fps		
	Total Length= 7600 ft Total Tc=	103.6

SUBCATCHMENT 6

PEAK= 219.6 CFS @ 12.86 HRS, VOLUME= 38.61 AF

ACRES	CN		
0.00	0		SCS TR-20 METHOD
2.60	71	C SOIL, MEADOW, GOOD CONDITION	TYPE II 24-HOUR
167.90	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
170.50	70		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	29.9
Forest w/Heavy Litter Kv=2.5 L=2650' s=.35 '/' V=1.48 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	50.3
Short Grass Pasture Kv=7 L=3600' s=.029 '/' V=1.19 fps		
	Total Length= 6250 ft Total Tc=	80.2

SUBCATCHMENT 30

PEAK= 354.9 CFS @ 13.05 HRS, VOLUME= 70.99 AF

ACRES	CN		
.32	98	BUILDINGS	SCS TR-20 METHOD
14.50	71	C SOIL, MEADOW, GOOD CONDITION	TYPE II 24-HOUR
300.90	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
315.72	70		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	29.2
Forest w/Heavy Litter Kv=2.5 L=2700' s=.38 '/' V=1.54 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	66.3
Short Grass Pasture Kv=7 L=6100' s=.048 '/' V=1.53 fps		
	Total Length= 8800 ft Total Tc=	95.5

REACH 1 **ROADSIDE DITCH**

Qin = 216.7 CFS @ 12.73 HRS, VOLUME= 34.84 AF
Qout= 215.6 CFS @ 12.78 HRS, VOLUME= 34.75 AF, ATTEN= 1%, LAG= 3.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	1.17	4.02
.60	2.89	14.53
.90	5.15	32.31
1.29	8.91	68.11
1.80	15.22	140.21
2.40	24.65	267.98
3.00	36.27	449.37

3' x 3' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 1100 FT
SLOPE= .09 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.15 FT
PEAK VELOCITY= 10.4 FPS
TRAVEL TIME = 1.8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 2 **EXISTING SWALE**

Qin = 314.5 CFS @ 13.00 HRS, VOLUME= 62.20 AF
Qout= 308.1 CFS @ 13.26 HRS, VOLUME= 61.33 AF, ATTEN= 2%, LAG= 15.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	7.99
.60	7.80	27.04
.90	13.05	56.77
1.29	21.22	112.59
1.80	34.20	217.91
2.40	52.80	394.51
3.00	75.00	635.04

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .045
LENGTH= 3600 FT
SLOPE= .029 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.11 FT
PEAK VELOCITY= 7.1 FPS
TRAVEL TIME = 8.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 3 **EXISTING SWALE**

Qin = 107.9 CFS @ 12.54 HRS, VOLUME= 14.71 AF
Qout= 101.7 CFS @ 12.84 HRS, VOLUME= 14.49 AF, ATTEN= 6%, LAG= 17.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	7.99
.60	7.80	27.04
.90	13.05	56.77
1.29	21.22	112.59
1.80	34.20	217.91
2.40	52.80	394.51
3.00	75.00	635.04

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .045
LENGTH= 3000 FT
SLOPE= .029 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.22 FT
PEAK VELOCITY= 5.2 FPS
TRAVEL TIME = 9.6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

POND 1

Not described

Qin = 496.8 CFS @ 13.12 HRS, VOLUME= 99.94 AF
Qout= 496.8 CFS @ 13.12 HRS, VOLUME= 99.94 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 2

Not described

Qin = 475.2 CFS @ 13.15 HRS, VOLUME=100.23 AF
Qout= 475.2 CFS @ 13.15 HRS, VOLUME=100.23 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 3

Not described

Qin = 270.8 CFS @ 12.65 HRS, VOLUME= 44.96 AF
Qout= 270.8 CFS @ 12.65 HRS, VOLUME= 44.96 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 4

Not described

Qin = 354.9 CFS @ 13.05 HRS, VOLUME= 70.99 AF
Qout= 354.9 CFS @ 13.05 HRS, VOLUME= 70.99 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

100 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 8.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	153.20	70.8	1%89 0%87 1%71 98%70	70	-	321.8	12.72	51.26
2	44.40	42.7	0%98 1%89 1%87 5%71 94%70	70	-	134.1	12.35	14.97
3	447.40	103.0	0%98 0%87 1%71 99%70	70	-	706.9	13.13	147.94
4	64.30	56.3	4%71 96%70	70	-	160.0	12.53	21.61
5	213.00	103.6	0%98 1%71 99%70	70	-	336.4	13.15	70.41
6	170.50	80.2	0%0 2%71 98%70	70	-	326.1	12.84	56.87
30	315.72	95.5	0%98 5%71 95%70	70	-	528.6	13.04	104.71

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	-	3.0	3.0	.33	.33	.050	1100	.0900	11.4	1.6	320.3
2	-	10.0	3.0	.20	.20	.045	3600	.0290	7.8	7.7	457.7
3	-	10.0	3.0	.20	.20	.045	3000	.0290	5.8	8.6	152.5

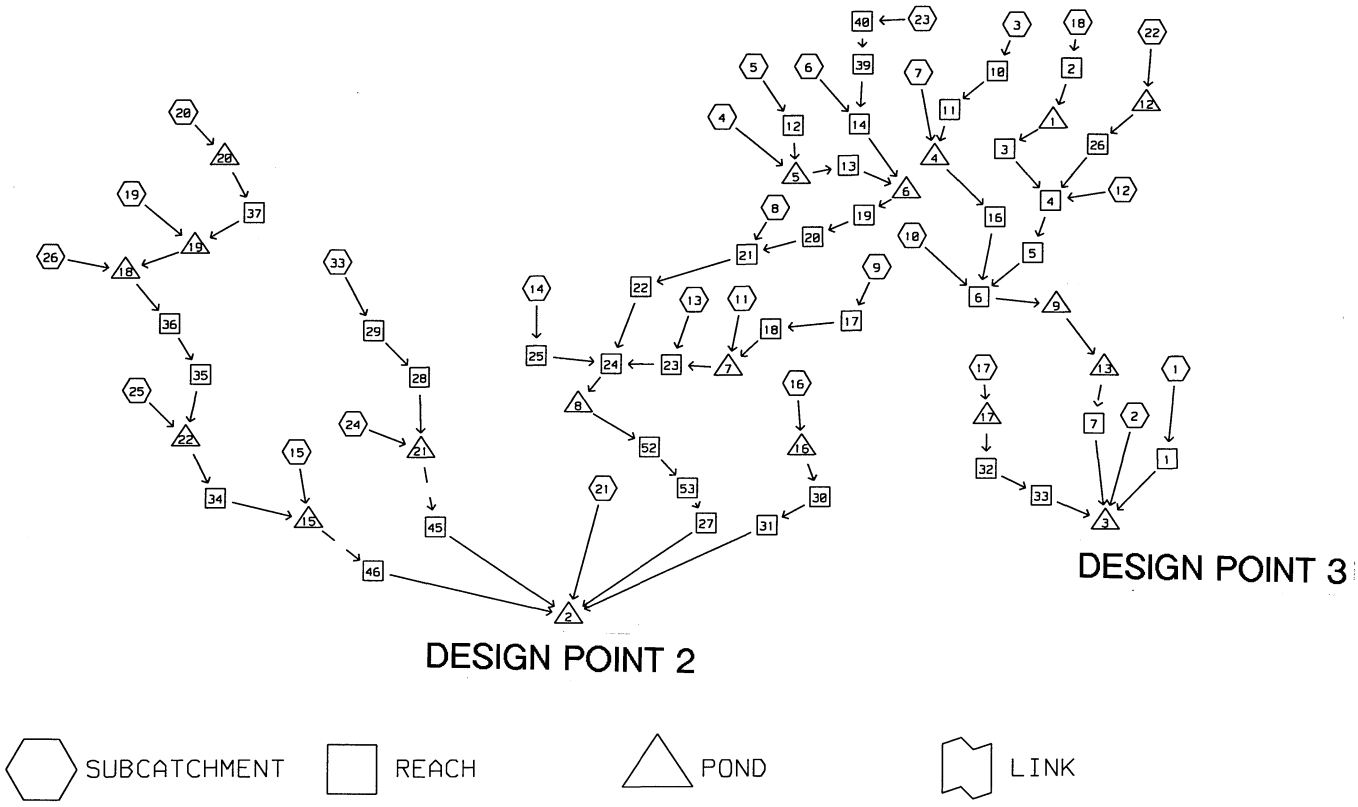
POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	0.0	0.0	0.0	0.00	746.0	746.0			0	0.0	N
2	0.0	0.0	0.0	0.00	706.9	706.9			0	0.0	N
3	0.0	0.0	0.0	0.00	404.0	404.0			0	0.0	N
4	0.0	0.0	0.0	0.00	528.6	528.6			0	0.0	N

BELLEAYRE HIGHLANDS

POST-DEVELOPMENT

WATERSHED ROUTING ==========



1 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 3.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	110.58	73.5	1%98 0%98 1%98 2%71 2%74 93%70	71	-	48.39	12.82	8.53
2	32.70	21.9	0%98 1%98 1%98 7%71 0%74 91%70	71	-	33.66	12.12	2.59
3	17.26	32.1	0%98 1%98 9%74 90%70	71	-	13.85	12.25	1.36
4	5.05	27.4	5%98 10%74 86%70	72	-	4.79	12.19	.42
5	3.08	2.5	13%98 8%98 55%74 23%70	78	-	8.29	11.88	.35
6	1.81	4.1	9%98 5%98 65%74 22%70	76	-	4.35	11.89	.19
7	2.87	4.4	8%98 4%98 57%74 31%70	76	-	6.82	11.90	.30
8	6.45	2.4	5%98 4%98 49%74 42%70	75	-	15.09	11.88	.64
9	2.89	1.4	10%98 3%98 64%74 23%70	76	-	6.84	11.87	.30
10	3.17	2.5	14%98 3%98 66%74 17%70	77	-	8.16	11.88	.35
11	2.87	1.3	16%98 10%98 57%74 17%70	79	-	7.72	11.86	.34
12	4.06	4.1	8%98 36%74 57%70	74	-	8.82	11.90	.38
13	6.43	4.5	11%98 5%98 39%74 46%70	76	-	15.21	11.90	.67
14	11.96	25.7	4%98 30%74 66%70	72	-	11.74	12.17	1.00
15	14.07	10.1	3%98 0%98 1%98 86%74 9%70	75	-	25.93	11.98	1.39
16	2.30	1.5	6%98 10%98 9%98 75%74	80	-	6.52	11.87	.29
17	4.00	1.5	5%98 11%98 2%98 25%98 55%74 4%70	84	-	13.21	11.86	.59
18	4.42	24.9	5%74 95%70	70	-	3.87	12.16	.33
19	5.20	7.1	83%74 18%70	73	-	9.06	11.93	.46
20	3.44	8.6	100%74	74	-	6.08	11.96	.32
21	343.07	88.3	0%98 0%98 1%98 5%74 3%71 92%70	70	-	122.2	13.02	24.77

22	14.96	30.5	3%98 74%70	2%98	2%98	19%74	73	-	14.13	12.23	1.32
23	9.37	26.4	8%74	92%70			70	-	7.94	12.18	.70
24	7.21	7.9	1%98 34%70	3%98	2%98	60%74	74	-	12.78	11.95	.68
25	1.79	5.5	2%98 6%70	12%98	8%98	72%74	79	-	4.65	11.90	.21
26	4.73	8.2	2%98	78%74	19%70		74	-	8.37	11.95	.44
33	1.50	1.0	14%98	5%98	7%98	73%74	80	-	4.13	11.86	.19

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	-	3.0	3.0	.33	.33	.050	1100	.0900	7.1	2.6	48.02
2	18.0	-	-	-	-	.012	50	.0200	7.6	.1	3.86
3	-	3.0	2.0	.33	.33	.040	1150	.0910	0.0	0.0	0.00
4	36.0	-	-	-	-	.012	50	.0100	7.0	.1	8.67
5	-	3.0	2.0	.33	.33	.040	260	.0760	4.7	.9	7.63
6	42.0	-	-	-	-	.012	50	.0080	7.5	.1	15.38
7	-	10.0	1.0	.10	.10	.050	2650	.2160	2.8	15.7	.80
10	24.0	-	-	-	-	.012	100	.0350	13.1	.1	13.70
11	-	3.0	2.0	.33	.33	.040	170	.0590	5.0	.6	13.59
12	18.0	-	-	-	-	.012	50	.0350	11.6	.1	8.24
13	-	3.0	2.0	.33	.33	.040	400	.0250	2.5	2.7	3.15
14	24.0	-	-	-	-	.012	50	.0130	8.0	.1	8.42
16	-	3.0	2.0	.33	.33	.040	370	.2160	7.7	.8	12.60
17	21.0	-	-	-	-	.012	50	.0100	6.9	.1	6.80
18	-	3.0	2.0	.33	.33	.040	600	.0750	4.4	2.3	5.57
19	-	3.0	2.0	.33	.33	.040	230	.3400	7.3	.5	6.09
20	-	3.0	2.0	.33	.33	.040	500	.0500	3.7	2.3	5.47
21	30.0	-	-	-	-	.012	50	.0500	14.7	.1	15.03
22	-	10.0	1.0	.10	.10	.035	300	.3500	7.3	.7	14.01
23	-	3.0	2.0	.33	.33	.040	1000	.0650	5.0	3.3	11.72
24	24.0x9	-	-	-	-	.012	30	.0100	5.2	.1	25.12
25	-	3.0	2.0	.33	.33	.040	530	.0280	3.7	2.4	11.30
26	-	3.0	2.0	.33	.33	.050	320	.2600	4.6	1.2	.56
27	-	10.0	2.0	.10	.10	.050	1050	.1100	4.2	4.2	17.82
28	-	10.0	1.0	.10	.10	.040	550	.2600	3.8	2.4	3.39

29	18.0	-	-	-	-	.012	60	.0100	6.0	.2	4.11
30	-	10.0	1.0	.10	.10	.050	1350	.3300	3.5	6.5	.12
31	-	10.0	1.0	.10	.10	.050	2400	.0830	1.7	23.0	.11
32	-	10.0	1.0	.10	.10	.050	1750	.2900	3.3	9.0	.42
33	-	10.0	1.0	.10	.10	.050	400	.0600	1.5	4.5	.42
34	-	10.0	1.0	.10	.10	.045	600	.1700	0.0	0.0	0.00
35	-	3.0	2.0	.33	.33	.040	600	.1100	3.8	2.7	.37
36	24.0	-	-	-	-	.012	60	.0100	3.1	.3	.37
37	-	10.0	1.0	.10	.10	.045	290	.2400	0.0	0.0	0.00
39	-	3.0	2.0	.33	.33	.040	275	.1200	5.6	.8	7.80
40	24.0	-	-	-	-	.012	50	.0120	7.7	.1	7.92
45	-	10.0	1.0	.10	.10	.050	2650	.2500	3.0	14.6	2.98
46	-	10.0	1.0	.10	.10	.050	2200	.2700	3.1	11.7	.63
52	-	200.0	1.0	.33	.33	.050	200	.5000	4.5	.7	23.01
53	-	200.0	1.0	.10	.10	.050	800	.4500	4.3	3.1	19.35

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2344.9	2351.0	2346.6	.33	3.86	0.00			100	0.0	
2	0.0	0.0	0.0	0.00	133.3	133.3			0	0.0	N
3	0.0	0.0	0.0	0.00	53.47	53.47			0	0.0	N
4	2319.9	2325.0	2322.6	.34	14.46	12.67			12	8.5	
5	2344.9	2351.5	2349.8	.36	9.35	3.36			64	36.6	
6	2339.9	2346.0	2344.7	.47	8.42	6.46			23	30.9	
7	2189.0	2196.0	2194.3	.50	12.92	.44			97	181.9	
8	0.0	4.0	3.4	.41	25.12	22.49			10	8.0	
9	2209.9	2217.0	2212.4	.20	15.38	13.88			10	35.2	
12	2329.0	2336.0	2334.1	1.23	14.13	.56			96	410.0	
13	2199.0	2207.0	2204.1	1.04	13.88	2.78	1.83	.95	80	97.0	
15	2169.0	2176.0	2174.1	.93	25.93	1.27	.58	.69	95	118.2	
16	2184.0	2191.0	2189.0	.26	6.52	.12			98	330.5	
17	2174.0	2181.0	2179.3	.45	13.21	.44			97	124.7	
18	2366.0	2371.0	2368.3	.30	8.37	.37			96	142.6	
19	2384.0	2391.0	2386.6	.46	9.06	0.00			100	0.0	
20	2454.0	2461.0	2457.5	.32	6.08	0.00			100	0.0	
21	2189.0	2196.5	2194.5	.37	16.12	7.03	.08	6.95	56	11.1	
22	2284.0	2296.0	2288.7	.37	4.65	0.00	0.00	0.00	100	0.0	

10 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	110.58	73.5	1%98 0%98 1%98 2%71 2%74 93%70	71	-	144.6	12.77	23.91
2	32.70	21.9	0%98 1%98 1%98 7%71 0%74 91%70	71	-	97.98	12.11	7.21
3	17.26	32.1	0%98 1%98 9%74 90%70	71	-	40.88	12.23	3.79
4	5.05	27.4	5%98 10%74 86%70	72	-	13.60	12.17	1.15
5	3.08	2.5	13%98 8%98 55%74 23%70	78	-	19.29	11.87	.83
6	1.81	4.1	9%98 5%98 65%74 22%70	76	-	10.69	11.89	.46
7	2.87	4.4	8%98 4%98 57%74 31%70	76	-	16.80	11.89	.74
8	6.45	2.4	5%98 4%98 49%74 42%70	75	-	37.37	11.88	1.61
9	2.89	1.4	10%98 3%98 64%74 23%70	76	-	16.54	11.86	.74
10	3.17	2.5	14%98 3%98 66%74 17%70	77	-	19.37	11.88	.84
11	2.87	1.3	16%98 10%98 57%74 17%70	79	-	17.56	11.86	.80
12	4.06	4.1	8%98 36%74 57%70	74	-	22.69	11.89	.99
13	6.43	4.5	11%98 5%98 39%74 46%70	76	-	37.51	11.89	1.65
14	11.96	25.7	4%98 30%74 66%70	72	-	33.63	12.15	2.72
15	14.07	10.1	3%98 0%98 1%98 86%74 9%70	75	-	65.64	11.97	3.51
16	2.30	1.5	6%98 10%98 9%98 75%74	80	-	14.54	11.86	.66
17	4.00	1.5	5%98 11%98 2%98 25%98 55%74 4%70	84	-	27.45	11.86	1.25
18	4.42	24.9	5%74 95%70	70	-	11.82	12.14	.94
19	5.20	7.1	83%74 18%70	73	-	24.50	11.92	1.22
20	3.44	8.6	100%74	74	-	15.61	11.95	.83
21	343.07	88.3	0%98 0%98 1%98 5%74 3%71 92%70	70	-	377.8	12.97	71.17

22	14.96	30.5	3%98 74%70	2%98	2%98	19%74	73	-	39.17	12.21	3.50
23	9.37	26.4	8%74	92%70			70	-	23.98	12.16	1.99
24	7.21	7.9	1%98 34%70	3%98	2%98	60%74	74	-	33.67	11.93	1.75
25	1.79	5.5	2%98 6%70	12%98	8%98	72%74	79	-	10.83	11.90	.50
26	4.73	8.2	2%98	78%74	19%70		74	-	21.80	11.94	1.15
33	1.50	1.0	14%98	5%98	7%98	73%74	80	-	8.96	11.85	.43

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	-	3.0	3.0	.33	.33	.050	1100	.0900	9.3	2.0	143.8
2	18.0	-	-	-	-	.012	50	.0200	10.0	.1	11.79
3	-	3.0	2.0	.33	.33	.040	1150	.0910	0.0	0.0	0.00
4	36.0	-	-	-	-	.012	50	.0100	9.5	.1	24.68
5	-	3.0	2.0	.33	.33	.040	260	.0760	6.5	.7	24.39
6	42.0	-	-	-	-	.012	50	.0080	10.8	.1	58.81
7	-	10.0	1.0	.10	.10	.050	2650	.2160	7.1	6.2	50.39
10	24.0	-	-	-	-	.012	100	.0350	16.4	.1	40.82
11	-	3.0	2.0	.33	.33	.040	170	.0590	6.8	.4	40.54
12	18.0	-	-	-	-	.012	50	.0350	13.6	.1	19.20
13	-	3.0	2.0	.33	.33	.040	400	.0250	4.0	1.7	16.81
14	24.0	-	-	-	-	.012	50	.0130	10.0	.1	25.24
16	-	3.0	2.0	.33	.33	.040	370	.2160	10.8	.6	39.47
17	21.0	-	-	-	-	.012	50	.0100	8.1	.1	16.48
18	-	3.0	2.0	.33	.33	.040	600	.0750	5.7	1.8	14.54
19	-	3.0	2.0	.33	.33	.040	230	.3400	13.0	.3	43.77
20	-	3.0	2.0	.33	.33	.040	500	.0500	6.4	1.3	41.44
21	30.0	-	-	-	-	.012	50	.0500	20.4	0.0	46.04
22	-	10.0	1.0	.10	.10	.035	300	.3500	10.6	.5	47.07
23	-	3.0	2.0	.33	.33	.040	1000	.0650	7.2	2.3	43.05
24	24.0x9	-	-	-	-	.012	30	.0100	7.7	.1	95.68
25	-	3.0	2.0	.33	.33	.040	530	.0280	4.9	1.8	32.44
26	-	3.0	2.0	.33	.33	.050	320	.2600	8.5	.6	23.08
27	-	10.0	2.0	.10	.10	.050	1050	.1100	6.6	2.7	89.12
28	-	10.0	1.0	.10	.10	.040	550	.2600	5.2	1.8	8.37

29	18.0	-	-	-	-	.012	60	.0100	7.1	.1	9.21
30	-	10.0	1.0	.10	.10	.050	1350	.3300	4.0	5.6	5.20
31	-	10.0	1.0	.10	.10	.050	2400	.0830	2.0	20.2	2.53
32	-	10.0	1.0	.10	.10	.050	1750	.2900	5.3	5.5	13.98
33	-	10.0	1.0	.10	.10	.050	400	.0600	2.9	2.3	11.82
34	-	10.0	1.0	.10	.10	.045	600	.1700	2.8	3.6	.06
35	-	3.0	2.0	.33	.33	.040	600	.1100	5.3	1.9	7.24
36	24.0	-	-	-	-	.012	60	.0100	7.0	.1	7.54
37	-	10.0	1.0	.10	.10	.045	290	.2400	3.3	1.5	.81
39	-	3.0	2.0	.33	.33	.040	275	.1200	7.6	.6	23.77
40	24.0	-	-	-	-	.012	50	.0120	9.6	.1	23.95
45	-	10.0	1.0	.10	.10	.050	2650	.2500	6.4	6.9	29.96
46	-	10.0	1.0	.10	.10	.050	2200	.2700	7.2	5.1	41.23
52	-	200.0	1.0	.33	.33	.050	200	.5000	4.7	.7	94.99
53	-	200.0	1.0	.10	.10	.050	800	.4500	4.4	3.0	91.04

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2344.9	2351.0	2349.7	.94	11.79	0.00			100	471.4	
2	0.0	0.0	0.0	0.00	423.8	423.8			0	0.0	N
3	0.0	0.0	0.0	0.00	211.2	211.2			0	0.0	N
4	2319.9	2325.0	2324.3	.56	42.55	39.78			7	5.3	
5	2344.9	2351.5	2350.6	.43	23.51	19.04			19	6.9	
6	2339.9	2346.0	2345.6	.56	40.63	44.18			0	0.0	
7	2189.0	2196.0	2195.3	.61	31.59	21.50			32	7.3	
8	0.0	4.0	3.7	.45	95.68	97.04			0	.7	
9	2209.9	2217.0	2214.2	.35	58.81	57.13			3	2.4	
12	2329.0	2336.0	2335.0	1.48	39.17	22.53			42	18.1	
13	2199.0	2207.0	2205.9	1.51	57.13	54.36	2.24	52.13	5	4.9	
15	2169.0	2176.0	2175.2	1.17	65.64	50.26	1.02	49.24	23	5.4	
16	2184.0	2191.0	2189.9	.31	14.54	7.71			47	8.2	
17	2174.0	2181.0	2180.1	.53	27.45	18.45			33	5.0	
18	2366.0	2371.0	2369.5	.52	21.80	7.50			66	12.0	
19	2384.0	2391.0	2388.6	.96	24.50	1.29			95	183.1	
20	2454.0	2461.0	2459.9	.60	15.61	.81			95	93.6	
21	2189.0	2196.5	2195.7	.46	41.70	39.56	.12	39.43	5	2.3	
22	2284.0	2296.0	2293.7	1.31	11.08	1.74	.06	1.68	84	319.1	

25 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.30 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	110.58	73.5	1%98 0%98 1%98 2%71 2%74 93%70	71	-	157.3	12.77	25.95
2	32.70	21.9	0%98 1%98 1%98 7%71 0%74 91%70	71	-	106.4	12.11	7.81
3	17.26	32.1	0%98 1%98 9%74 90%70	71	-	44.44	12.23	4.11
4	5.05	27.4	5%98 10%74 86%70	72	-	14.74	12.17	1.24
5	3.08	2.5	13%98 8%98 55%74 23%70	78	-	20.65	11.87	.89
6	1.81	4.1	9%98 5%98 65%74 22%70	76	-	11.48	11.89	.50
7	2.87	4.4	8%98 4%98 57%74 31%70	76	-	18.05	11.89	.79
8	6.45	2.4	5%98 4%98 49%74 42%70	75	-	40.18	11.87	1.73
9	2.89	1.4	10%98 3%98 64%74 23%70	76	-	17.75	11.86	.80
10	3.17	2.5	14%98 3%98 66%74 17%70	77	-	20.77	11.88	.90
11	2.87	1.3	16%98 10%98 57%74 17%70	79	-	18.78	11.86	.85
12	4.06	4.1	8%98 36%74 57%70	74	-	24.45	11.89	1.06
13	6.43	4.5	11%98 5%98 39%74 46%70	76	-	40.31	11.89	1.78
14	11.96	25.7	4%98 30%74 66%70	72	-	36.48	12.15	2.94
15	14.07	10.1	3%98 0%98 1%98 86%74 9%70	75	-	70.67	11.97	3.78
16	2.30	1.5	6%98 10%98 9%98 75%74	80	-	15.53	11.86	.70
17	4.00	1.5	5%98 11%98 2%98 25%98 55%74 4%70	84	-	29.17	11.86	1.33
18	4.42	24.9	5%74 95%70	70	-	12.86	12.14	1.02
19	5.20	7.1	83%74 18%70	73	-	26.49	11.92	1.32
20	3.44	8.6	100%74	74	-	16.84	11.95	.90
21	343.07	88.3	0%98 0%98 1%98 5%74 3%71 92%70	70	-	411.8	12.96	77.40

22	14.96	30.5	3%98 74%70	2%98	2%98	19%74	73	-	42.42	12.21	3.79
23	9.37	26.4	8%74	92%70			70	-	26.10	12.16	2.17
24	7.21	7.9	1%98 34%70	3%98	2%98	60%74	74	-	36.35	11.93	1.89
25	1.79	5.5	2%98 6%70	12%98	8%98	72%74	79	-	11.59	11.90	.53
26	4.73	8.2	2%98	78%74	19%70		74	-	23.53	11.94	1.24
33	1.50	1.0	14%98	5%98	7%98	73%74	80	-	9.58	11.85	.46

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	-	3.0	3.0	.33	.33	.050	1100	.0900	9.5	1.9	156.5
2	18.0	-	-	-	-	.012	50	.0200	10.1	.1	12.83
3	-	3.0	2.0	.33	.33	.040	1150	.0910	3.4	5.6	.38
4	36.0	-	-	-	-	.012	50	.0100	9.9	.1	27.98
5	-	3.0	2.0	.33	.33	.040	260	.0760	6.8	.6	28.18
6	42.0	-	-	-	-	.012	50	.0080	11.0	.1	67.18
7	-	10.0	1.0	.10	.10	.050	2650	.2160	7.4	6.0	58.10
10	24.0	-	-	-	-	.012	100	.0350	16.6	.1	44.37
11	-	3.0	2.0	.33	.33	.040	170	.0590	6.9	.4	44.05
12	18.0	-	-	-	-	.012	50	.0350	13.7	.1	20.56
13	-	3.0	2.0	.33	.33	.040	400	.0250	4.2	1.6	20.57
14	24.0	-	-	-	-	.012	50	.0130	10.1	.1	27.45
16	-	3.0	2.0	.33	.33	.040	370	.2160	11.1	.6	42.90
17	21.0	-	-	-	-	.012	50	.0100	8.1	.1	17.69
18	-	3.0	2.0	.33	.33	.040	600	.0750	5.8	1.7	15.67
19	-	3.0	2.0	.33	.33	.040	230	.3400	13.3	.3	46.34
20	-	3.0	2.0	.33	.33	.040	500	.0500	6.6	1.3	43.11
21	30.0	-	-	-	-	.012	50	.0500	20.6	0.0	48.13
22	-	10.0	1.0	.10	.10	.035	300	.3500	10.8	.5	50.04
23	-	3.0	2.0	.33	.33	.040	1000	.0650	7.5	2.2	49.24
24	24.0x9	-	-	-	-	.012	30	.0100	7.9	.1	105.1
25	-	3.0	2.0	.33	.33	.040	530	.0280	5.0	1.8	35.18
26	-	3.0	2.0	.33	.33	.050	320	.2600	8.7	.6	26.24
27	-	10.0	2.0	.10	.10	.050	1050	.1100	6.8	2.6	100.7
28	-	10.0	1.0	.10	.10	.040	550	.2600	5.3	1.7	8.97

29	18.0	-	-	-	-	.012	60	.0100	7.2	.1	9.84
30	-	10.0	1.0	.10	.10	.050	1350	.3300	4.2	5.3	6.38
31	-	10.0	1.0	.10	.10	.050	2400	.0830	2.2	18.3	3.30
32	-	10.0	1.0	.10	.10	.050	1750	.2900	5.7	5.2	16.49
33	-	10.0	1.0	.10	.10	.050	400	.0600	3.1	2.1	13.66
34	-	10.0	1.0	.10	.10	.045	600	.1700	2.8	3.6	.07
35	-	3.0	2.0	.33	.33	.040	600	.1100	5.4	1.8	8.07
36	24.0	-	-	-	-	.012	60	.0100	7.3	.1	8.36
37	-	10.0	1.0	.10	.10	.045	290	.2400	3.3	1.5	1.16
39	-	3.0	2.0	.33	.33	.040	275	.1200	7.8	.6	25.88
40	24.0	-	-	-	-	.012	50	.0120	9.7	.1	26.07
45	-	10.0	1.0	.10	.10	.050	2650	.2500	6.6	6.7	33.14
46	-	10.0	1.0	.10	.10	.050	2200	.2700	7.6	4.8	48.31
52	-	200.0	1.0	.33	.33	.050	200	.5000	4.9	.7	106.4
53	-	200.0	1.0	.10	.10	.050	800	.4500	4.7	2.8	103.0

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2344.9	2351.0	2349.8	.96	12.83	.38			97	394.0	
2	0.0	0.0	0.0	0.00	460.9	460.9			0	0.0	N
3	0.0	0.0	0.0	0.00	233.0	233.0			0	0.0	N
4	2319.9	2325.0	2324.5	.59	46.20	43.22			6	5.3	
5	2344.9	2351.5	2350.7	.43	25.30	20.49			19	5.2	
6	2339.9	2346.0	2345.6	.56	44.06	45.00			0	0.0	
7	2189.0	2196.0	2195.4	.62	33.92	23.58			30	6.4	
8	0.0	4.0	3.7	.45	105.1	107.0			0	0.0	
9	2209.9	2217.0	2214.7	.39	67.18	65.35			3	3.4	
12	2329.0	2336.0	2335.1	1.52	42.42	26.31			38	15.7	
13	2199.0	2207.0	2206.1	1.57	65.35	62.27	2.30	59.97	5	5.0	
15	2169.0	2176.0	2175.4	1.22	70.67	63.87	1.12	62.75	10	4.1	
16	2184.0	2191.0	2189.9	.31	15.53	8.70			44	7.3	
17	2174.0	2181.0	2180.3	.55	29.17	23.25			20	4.3	
18	2366.0	2371.0	2369.7	.55	23.53	8.31			65	11.7	
19	2384.0	2391.0	2388.7	.99	26.49	1.72			94	126.5	
20	2454.0	2461.0	2459.9	.60	16.84	1.16			93	61.9	
21	2189.0	2196.5	2195.8	.47	44.92	42.58	.13	42.45	5	2.3	
22	2284.0	2296.0	2293.9	1.34	12.14	2.26	.07	2.20	81	250.5	

SUBCATCHMENT 1

PEAK= 157.3 CFS @ 12.77 HRS, VOLUME= 25.95 AF

ACRES	CN		
1.59	98	GRAVEL ROAD	SCS TR-20 METHOD
.26	98	DRIVEWAY	TYPE II 24-HOUR
.95	98	ROAD	RAINFALL= 6.30 IN
2.21	71	C SOIL, MEADOW, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
2.62	74	C SOIL, GRASS, GOOD CONDITION	
102.95	70	C SOIL, FOREST, GOOD CONDITION	
110.58	71		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	73.5
Forest w/Heavy Litter Kv=2.5 L=5400' s=.24 '/' V=1.22 fps		

SUBCATCHMENT 2

PEAK= 106.4 CFS @ 12.11 HRS, VOLUME= 7.81 AF

ACRES	CN		
.13	98	BUILDINGS	SCS TR-20 METHOD
.27	98	DRIVEWAY/PARKING	TYPE II 24-HOUR
.18	98	GRAVEL ROAD	RAINFALL= 6.30 IN
2.38	71	C SOIL, MEADOW, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
.12	74	C SOIL, GRASS, GOOD CONDITION	
29.62	70	C SOIL, FOREST, GOOD CONDITION	
32.70	71		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.5
Paved Kv=20.3282 L=80' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.1
Short Grass Pasture Kv=7 L=550' s=.18 '/' V=2.97 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	18.3
Forest w/Heavy Litter Kv=2.5 L=1500' s=.3 '/' V=1.37 fps		

	Total Length= 2130 ft	Total Tc= 21.9

SUBCATCHMENT 3

PEAK= 44.44 CFS @ 12.23 HRS, VOLUME= 4.11 AF

ACRES	CN		SCS TR-20 METHOD
.04	98	DRIVEWAYS	TYPE II 24-HOUR
.14	98	BUILDINGS	RAINFALL= 6.30 IN
1.55	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
15.53	70	C SOIL, FOREST, GOOD CONDITION	
17.26	71		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	30.6
Forest w/Heavy Litter Kv=2.5 L=2100' s=.21 '/' V=1.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.6
Short Grass Pasture Kv=7 L=120' s=.21 '/' V=3.21 fps		
CHANNEL FLOW	**Segment ID:**	.9
a=18 sq-ft Pw=15.8' r=1.139'		
s=.054 '/' n=.04 V=9.42 fps L=500' Capacity=169.5 cfs		
	Total Length= 2720 ft Total Tc=	32.1

SUBCATCHMENT 4

PEAK= 14.74 CFS @ 12.17 HRS, VOLUME= 1.24 AF

ACRES	CN		SCS TR-20 METHOD
.24	98	ROAD	TYPE II 24-HOUR
.48	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
4.33	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
5.05	72		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	26.4
Forest w/Heavy Litter Kv=2.5 L=1860' s=.22 '/' V=1.17 fps		
CHANNEL FLOW	**Segment ID:**	1.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.086 '/' n=.04 V=11.88 fps L=700' Capacity=213.9 cfs		
	Total Length= 2560 ft Total Tc=	27.4

SUBCATCHMENT 5

PEAK= 20.65 CFS @ 11.87 HRS, VOLUME= .89 AF

ACRES	CN		SCS TR-20 METHOD
.40	98	ROAD	TYPE II 24-HOUR
.26	98	BUILDINGS	RAINFALL= 6.30 IN
1.70	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
.72	70	C SOIL, FOREST, GOOD CONDITION	
3.08	78		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	0.0
Paved Kv=20.3282 L=20' s=.14 '/' V=7.61 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.9
Short Grass Pasture Kv=7 L=300' s=.14 '/' V=2.62 fps		
CHANNEL FLOW	**Segment ID:**	.6
a=18 sq-ft Pw=15.8' r=1.139'		
s=.05 '/' n=.04 V=9.06 fps L=300' Capacity=163.1 cfs		
	Total Length= 620 ft Total Tc=	2.5

SUBCATCHMENT 6

PEAK= 11.48 CFS @ 11.89 HRS, VOLUME= .50 AF

ACRES	CN		SCS TR-20 METHOD
.16	98	ROAD/DRIVEWAYS	TYPE II 24-HOUR
.09	98	BUILDINGS	RAINFALL= 6.30 IN
1.17	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
.39	70	C SOIL, FOREST, GOOD CONDITION	
1.81	76		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	0.0
Paved Kv=20.3282 L=20' s=.2 '/' V=9.09 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.7
Forest w/Heavy Litter Kv=2.5 L=180' s=.2 '/' V=1.12 fps		
CHANNEL FLOW	**Segment ID:**	1.4
a=18 sq-ft Pw=15.8' r=1.139'		
s=.021 '/' n=.04 V=5.87 fps L=480' Capacity=105.7 cfs		
	Total Length= 680 ft Total Tc=	4.1

SUBCATCHMENT 7

PEAK= 18.05 CFS @ 11.89 HRS, VOLUME= .79 AF

ACRES	CN		
.23	98	ROAD/DRIVEWAYS	SCS TR-20 METHOD
.11	98	BUILDINGS	TYPE II 24-HOUR
1.65	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
.88	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
2.87	76		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.2
Paved Kv=20.3282 L=30' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Short Grass Pasture Kv=7 L=40' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.2
Forest w/Heavy Litter Kv=2.5 L=180' s=.144 '/' V=.95 fps		
CHANNEL FLOW	**Segment ID:**	.7
a=18 sq-ft Pw=15.8' r=1.139'		
s=.052 '/' n=.04 V=9.24 fps L=380' Capacity=166.3 cfs		

	Total Length= 630 ft Total Tc=	4.4

SUBCATCHMENT 8

PEAK= 40.18 CFS @ 11.87 HRS, VOLUME= 1.73 AF

ACRES	CN		
.34	98	PAVEMENT	SCS TR-20 METHOD
.29	98	BUILDINGS	TYPE II 24-HOUR
3.13	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
2.69	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
6.45	75		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=30' s=.05 '/' V=4.55 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.3
Forest w/Heavy Litter Kv=2.5 L=100' s=.25 '/' V=1.25 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.0
Short Grass Pasture Kv=7 L=200' s=.25 '/' V=3.5 fps		

	Total Length= 330 ft Total Tc=	2.4

SUBCATCHMENT 9

PEAK= 17.75 CFS @ 11.86 HRS, VOLUME= .80 AF

ACRES	CN		SCS TR-20 METHOD
.28	98	ROADS/DRIVEWAYS	TYPE II 24-HOUR
.09	98	BUILDINGS	RAINFALL= 6.30 IN
1.86	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
.66	70	C SOIL, FOREST, GOOD CONDITION	
2.89	76		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=30' s=.05 '/' V=4.55 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.1
Short Grass Pasture Kv=7 L=250' s=.296 '/' V=3.81 fps		
CHANNEL FLOW	**Segment ID:**	.2
a=18 sq-ft Pw=15.1' r=1.192'		
s=.081 '/' n=.04 V=11.89 fps L=160' Capacity=214 cfs		
	Total Length= 440 ft Total Tc=	1.4

SUBCATCHMENT 10

PEAK= 20.77 CFS @ 11.88 HRS, VOLUME= .90 AF

ACRES	CN		SCS TR-20 METHOD
.45	98	ROADS/DRIVEWAYS	TYPE II 24-HOUR
.10	98	BUILDINGS	RAINFALL= 6.30 IN
2.09	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
.53	70	C SOIL, FOREST, GOOD CONDITION	
3.17	77		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.2
Paved Kv=20.3282 L=30' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.9
Short Grass Pasture Kv=7 L=200' s=.283 '/' V=3.72 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.9
Forest w/Heavy Litter Kv=2.5 L=70' s=.283 '/' V=1.33 fps		
CHANNEL FLOW	**Segment ID:**	.5
a=18 sq-ft Pw=15.3' r=1.176'		
s=.043 '/' n=.03 V=11.45 fps L=350' Capacity=206 cfs		
	Total Length= 650 ft Total Tc=	2.5

SUBCATCHMENT 11

PEAK= 18.78 CFS @ 11.86 HRS, VOLUME= .85 AF

ACRES	CN		SCS TR-20 METHOD
.46	98	ROAD	TYPE II 24-HOUR
.28	98	BUILDINGS	RAINFALL= 6.30 IN
1.63	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
.50	70	C SOIL, FOREST, GOOD CONDITION	
2.87	79		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Paved Kv=20.3282 L=80' s=.05 '/' V=4.55 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.0
Short Grass Pasture Kv=7 L=200' s=.25 '/' V=3.5 fps		
	Total Length= 280 ft Total Tc=	1.3

SUBCATCHMENT 12

PEAK= 24.45 CFS @ 11.89 HRS, VOLUME= 1.06 AF

ACRES	CN		SCS TR-20 METHOD
.31	98	ROAD	TYPE II 24-HOUR
1.45	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
2.30	70	C SOIL,FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
4.06	74		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.8
Short Grass Pasture Kv=7 L=170' s=.262 '/' V=3.58 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.3
Forest w/Heavy Litter Kv=2.5 L=250' s=.262 '/' V=1.28 fps		
	Total Length= 420 ft Total Tc=	4.1

SUBCATCHMENT 13

PEAK= 40.31 CFS @ 11.89 HRS, VOLUME= 1.78 AF

ACRES	CN		
.69	98	ROAD	SCS TR-20 METHOD
.32	98	BUILDINGS	TYPE II 24-HOUR
2.48	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
2.94	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
6.43	76		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.5
Forest w/Heavy Litter Kv=2.5 L=100' s=.197 '/' V=1.11 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.3
Short Grass Pasture Kv=7 L=240' s=.197 '/' V=3.11 fps		
CHANNEL FLOW	**Segment ID:**	1.6
a=18 sq-ft Pw=15.8' r=1.139'		
s=.059 '/' n=.045 V=8.75 fps L=850' Capacity=157.5 cfs		
	Total Length= 1210 ft Total Tc=	4.5

SUBCATCHMENT 14

PEAK= 36.48 CFS @ 12.15 HRS, VOLUME= 2.94 AF

ACRES	CN		
.43	98	ROAD	SCS TR-20 METHOD
3.63	74	C SOIL, GRASS, GOOD CONDITION	TYPE II 24-HOUR
7.90	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
11.96	72		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	25.5
Forest w/Heavy Litter Kv=2.5 L=1950' s=.259 '/' V=1.27 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.2
Short Grass Pasture Kv=7 L=80' s=.688 '/' V=5.81 fps		
	Total Length= 2030 ft Total Tc=	25.7

SUBCATCHMENT 15

PEAK= 70.67 CFS @ 11.97 HRS, VOLUME= 3.78 AF

ACRES	CN	
.48	98	ROAD
.07	98	DRIVEWAYS
.16	98	BUILDINGS
12.08	74	C SOIL, GRASS, GOOD CONDITION
1.28	70	C SOIL, FOREST, GOOD CONDITION
14.07	75	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Paved Kv=20.3282 L=50' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.6
Short Grass Pasture Kv=7 L=480' s=.195 '/' V=3.09 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	5.1
Forest w/Heavy Litter Kv=2.5 L=340' s=.195 '/' V=1.1 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.1
Short Grass Pasture Kv=7 L=270' s=.093 '/' V=2.13 fps		
	Total Length= 1140 ft Total Tc=	10.1

SUBCATCHMENT 16

PEAK= 15.53 CFS @ 11.86 HRS, VOLUME= .70 AF

ACRES	CN	
.14	98	ROAD
.23	98	DRIVEWAYS
.21	98	BUILDINGS
1.72	74	C SOIL, GRASS, GOOD CONDITION
2.30	80	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.2
Short Grass Pasture Kv=7 L=220' s=.2 '/' V=3.13 fps		
CHANNEL FLOW	**Segment ID:**	.2
a=18 sq-ft Pw=15.8' r=1.139'		
s=.05 '/' n=.045 V=8.05 fps L=120' Capacity=145 cfs		
	Total Length= 360 ft Total Tc=	1.5

SUBCATCHMENT 17

PEAK= 29.17 CFS @ 11.86 HRS, VOLUME= 1.33 AF

ACRES	CN	
.18	98	ROAD
.43	98	PARKING
.07	98	BUILDINGS
.98	98	TENNIS COURT AREA
2.19	74	C SOIL, GRASS, GOOD CONDITION
.15	70	C SOIL, WOODS, GOOD CONDITION
4.00	84	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Short Grass Pasture Kv=7 L=60' s=.25 '/' V=3.5 fps		
CHANNEL FLOW	**Segment ID:**	1.1
a=18 sq-ft Pw=15.8' r=1.139'		
s=.06 '/' n=.045 V=8.82 fps L=570' Capacity=158.8 cfs		
	Total Length= 650 ft Total Tc=	1.5

SUBCATCHMENT 18

PEAK= 12.86 CFS @ 12.14 HRS, VOLUME= 1.02 AF

ACRES	CN	
.20	74	C SOIL, GRASS, GOOD CONDITION
4.22	70	C SOIL, FOREST, GOOD CONDITION
4.42	70	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	24.1
Forest w/Heavy Litter Kv=2.5 L=1800' s=.247 '/' V=1.24 fps		
CHANNEL FLOW	**Segment ID:**	.8
a=18 sq-ft Pw=15.8' r=1.139'		
s=.031 '/' n=.045 V=6.34 fps L=320' Capacity=114.2 cfs		
	Total Length= 2120 ft Total Tc=	24.9

SUBCATCHMENT 19

PEAK= 26.49 CFS @ 11.92 HRS, VOLUME= 1.32 AF

ACRES	CN		
4.29	74	C SOIL, LAWN, GOOD CONDITION	SCS TR-20 METHOD
.91	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
			RAINFALL= 6.30 IN
5.20	73		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.3
Forest w/Heavy Litter Kv=2.5 L=130' s=.14 '/' V=.94 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.8
Short Grass Pasture Kv=7 L=760' s=.14 '/' V=2.62 fps		
	Total Length= 890 ft Total Tc=	7.1

SUBCATCHMENT 20

PEAK= 16.84 CFS @ 11.95 HRS, VOLUME= .90 AF

ACRES	CN		
3.44	74	C SOIL, LAWN, GOOD CONDITION	SCS TR-20 METHOD
			TYPE II 24-HOUR
			RAINFALL= 6.30 IN
			SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	8.6
Short Grass Pasture Kv=7 L=1370' s=.145 '/' V=2.67 fps		

SUBCATCHMENT 21

PEAK= 411.8 CFS @ 12.96 HRS, VOLUME= 77.40 AF

ACRES	CN		
.12	98	BUILDINGS	SCS TR-20 METHOD
.05	98	DRIVEWAY	TYPE II 24-HOUR
2.34	98	ROAD	RAINFALL= 6.30 IN
15.98	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
8.96	71	C SOIL, MEADOW, GOOD CONDITION	
315.62	70	C SOIL, FOREST, GOOD CONDITION	
343.07	70		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	31.4
Forest w/Heavy Litter Kv=2.5 L=2400' s=.26 '/' V=1.27 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.5
Short Grass Pasture Kv=7 L=100' s=.19 '/' V=3.05 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	56.4
Short Grass Pasture Kv=7 L=4100' s=.03 '/' V=1.21 fps		
	Total Length= 6600 ft Total Tc=	88.3

SUBCATCHMENT 22

PEAK= 42.42 CFS @ 12.21 HRS, VOLUME= 3.79 AF

ACRES	CN	
.52	98	BUILDINGS
.25	98	DRIVEWAY
.24	98	ROAD
2.87	74	C SOIL, GRASS, GOOD CONDITION
11.08	70	C SOIL, FOREST, GOOD CONDITION
14.96	73	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	23.5
Forest w/Heavy Litter Kv=2.5 L=1800' s=.26 '/' V=1.27 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.0
Short Grass Pasture Kv=7 L=700' s=.057 '/' V=1.67 fps		
	Total Length= 2500 ft Total Tc=	30.5

SUBCATCHMENT 23

PEAK= 26.10 CFS @ 12.16 HRS, VOLUME= 2.17 AF

ACRES	CN	
.76	74	C SOIL, LAWN, GOOD CONDITION
8.61	70	C SOIL, FOREST, GOOD CONDITION
9.37	70	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	24.9
Forest w/Heavy Litter Kv=2.5 L=1750' s=.22 '/' V=1.17 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Short Grass Pasture Kv=7 L=50' s=.22 '/' V=3.28 fps		
CHANNEL FLOW	**Segment ID:**	1.2
a=18 sq-ft Pw=15.8' r=1.139'		
s=.054 '/' n=.04 V=9.42 fps L=700' Capacity=169.5 cfs		
	Total Length= 2500 ft Total Tc=	26.4

SUBCATCHMENT 24

PEAK= 36.35 CFS @ 11.93 HRS, VOLUME= 1.89 AF

ACRES	CN		SCS TR-20 METHOD
.10	98	ROAD	TYPE II 24-HOUR
.19	98	DRIVEWAYS	RAINFALL= 6.30 IN
.15	98	BUILDINGS	SPAN= 10-20 HRS, dt=.1 HRS
4.29	74	C SOIL, GRASS, GOOD CONDITION	
2.48	70	C SOIL, FOREST, GOOD CONDITION	
7.21	74		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Paved Kv=20.3282 L=50' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.9
Short Grass Pasture Kv=7 L=680' s=.173 '/' V=2.91 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.6
Forest w/Heavy Litter Kv=2.5 L=100' s=.173 '/' V=1.04 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.1
Short Grass Pasture Kv=7 L=200' s=.05 '/' V=1.57 fps		
	Total Length= 1030 ft Total Tc=	7.9

SUBCATCHMENT 25

PEAK= 11.59 CFS @ 11.90 HRS, VOLUME= .53 AF

ACRES	CN		SCS TR-20 METHOD
.04	98	ROAD	TYPE II 24-HOUR
.21	98	DRIVEWAYS	RAINFALL= 6.30 IN
.15	98	BUILDINGS	SPAN= 10-20 HRS, dt=.1 HRS
1.29	74	C SOIL, GRASS, GOOD CONDITION	
.10	70	C SOIL, FOREST, GOOD CONDITION	
1.79	79		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Paved Kv=20.3282 L=130' s=.097 '/' V=6.33 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.7
Forest w/Heavy Litter Kv=2.5 L=80' s=.097 '/' V=.78 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.5
Short Grass Pasture Kv=7 L=460' s=.097 '/' V=2.18 fps		
	Total Length= 670 ft Total Tc=	5.5

SUBCATCHMENT 26

PEAK= 23.53 CFS @ 11.94 HRS, VOLUME= 1.24 AF

ACRES	CN		
.10	98	ROAD	SCS TR-20 METHOD
3.71	74	C SOIL, LAWN, GOOD CONDITION	TYPE II 24-HOUR
.92	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
4.73	74		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	5.0
Short Grass Pasture Kv=7 L=780' s=.14 '/' V=2.62 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.1
Forest w/Heavy Litter Kv=2.5 L=120' s=.14 '/' V=.94 fps		
CHANNEL FLOW	**Segment ID:**	1.1
a=18 sq-ft Pw=15.8' r=1.139'		
s=.05 '/' n=.04 V=9.06 fps L=600' Capacity=163.1 cfs		
	Total Length= 1500 ft Total Tc=	8.2

SUBCATCHMENT 33

PEAK= 9.58 CFS @ 11.85 HRS, VOLUME= .46 AF

ACRES	CN		
.21	98	BUILDINGS	SCS TR-20 METHOD
.08	98	DRIVEWAYS	TYPE II 24-HOUR
.11	98	ROAD	RAINFALL= 6.30 IN
1.10	74	C SOIL, GRASS, GOOD CONDIYION	SPAN= 10-20 HRS, dt=.1 HRS
1.50	80		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.5
Short Grass Pasture Kv=7 L=100' s=.2 '/' V=3.13 fps		
CHANNEL FLOW	**Segment ID:**	.5
a=18 sq-ft Pw=15.8' r=1.139'		
s=.0625 '/' n=.03 V=13.51 fps L=400' Capacity=243.1 cfs		
	Total Length= 500 ft Total Tc=	1.0

REACH 1 **ROADSIDE DITCH**

Qin = 157.3 CFS @ 12.77 HRS, VOLUME= 25.95 AF
Qout= 156.5 CFS @ 12.82 HRS, VOLUME= 25.88 AF, ATTEN= 1%, LAG= 3.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	1.17	4.02
.60	2.89	14.53
.90	5.15	32.31
1.29	8.91	68.11
1.80	15.22	140.21
2.40	24.65	267.98
3.00	36.27	449.37

3' x 3' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 1100 FT
SLOPE= .09 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.88 FT
PEAK VELOCITY= 9.5 FPS
TRAVEL TIME = 1.9 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 2

Qin = 12.86 CFS @ 12.14 HRS, VOLUME= 1.02 AF
Qout= 12.83 CFS @ 12.14 HRS, VOLUME= 1.02 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.34
.30	.25	1.41
.45	.45	3.15
1.05	1.32	13.47
1.20	1.52	15.73
1.35	1.68	17.15
1.41	1.72	17.31
1.46	1.75	17.15
1.50	1.77	16.09

18" PIPE

n= .012
LENGTH= 50 FT
SLOPE= .02 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.00 FT
PEAK VELOCITY= 10.1 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 3 **STONE SWALE**

Qin = .38 CFS @ 18.71 HRS, VOLUME= .07 AF
Qout= .38 CFS @ 18.91 HRS, VOLUME= .06 AF, ATTEN= 0%, LAG= 12.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.47
.40	1.68	8.53
.60	2.89	18.27
.86	4.82	37.06
1.20	7.96	73.49
1.60	12.56	136.05
2.00	18.12	222.85

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 1150 FT
SLOPE= .091 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .03 FT
PEAK VELOCITY= 3.4 FPS
TRAVEL TIME = 5.6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 4 **CULVERT**

Qin = 28.09 CFS @ 12.50 HRS, VOLUME= 3.67 AF
Qout= 27.98 CFS @ 12.50 HRS, VOLUME= 3.67 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	.37	1.51
.60	1.01	6.33
.90	1.78	14.15
2.10	5.29	60.50
2.40	6.06	70.63
2.70	6.70	77.01
2.82	6.90	77.72
2.91	7.01	77.01
3.00	7.07	72.26

36" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.26 FT
PEAK VELOCITY= 9.9 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 5 **ROADSIDE SWALE**

Qin = 27.98 CFS @ 12.50 HRS, VOLUME= 3.67 AF
Qout= 28.18 CFS @ 12.52 HRS, VOLUME= 3.66 AF, ATTEN= 0%, LAG= 1.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.25
.40	1.68	7.79
.60	2.89	16.69
.86	4.82	33.86
1.20	7.96	67.16
1.60	12.56	124.33
2.00	18.12	203.66

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 260 FT
SLOPE= .076 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .78 FT
PEAK VELOCITY= 6.8 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 6 **CULVERT**

Qin = 67.32 CFS @ 12.46 HRS, VOLUME= 9.26 AF
Qout= 67.18 CFS @ 12.46 HRS, VOLUME= 9.26 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.35	.50	2.04
.70	1.37	8.54
1.05	2.43	19.09
2.45	7.19	81.62
2.80	8.25	95.29
3.15	9.12	103.90
3.29	9.39	104.86
3.40	9.54	103.90
3.50	9.62	97.49

42" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .008 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.11 FT
PEAK VELOCITY= 11.0 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 7 **OVERLAND FLOW**

Qin = 59.97 CFS @ 12.60 HRS, VOLUME= 6.75 AF
Qout= 58.10 CFS @ 12.77 HRS, VOLUME= 6.69 AF, ATTEN= 3%, LAG= 10.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.09
.20	2.40	10.22
.30	3.90	20.99
.43	6.15	40.55
.60	9.60	76.15
.80	14.40	133.87
1.00	20.00	210.35

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 2650 FT
SLOPE= .216 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .51 FT
PEAK VELOCITY= 7.4 FPS
TRAVEL TIME = 6.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 10 **CULVERT**

Qin = 44.44 CFS @ 12.23 HRS, VOLUME= 4.11 AF
Qout= 44.37 CFS @ 12.23 HRS, VOLUME= 4.11 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.16	.96
.40	.45	4.02
.60	.79	8.98
1.40	2.35	38.39
1.60	2.69	44.82
1.80	2.98	48.87
1.88	3.06	49.32
1.94	3.11	48.86
2.00	3.14	45.85

24" PIPE
n= .012
LENGTH= 100 FT
SLOPE= .035 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.58 FT
PEAK VELOCITY= 16.6 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 11 **ROADSIDE SWALE**

Qin = 44.37 CFS @ 12.23 HRS, VOLUME= 4.11 AF
Qout= 44.05 CFS @ 12.24 HRS, VOLUME= 4.11 AF, ATTEN= 1%, LAG= .7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.99
.40	1.68	6.87
.60	2.89	14.71
.86	4.82	29.84
1.20	7.96	59.17
1.60	12.56	109.55
2.00	18.12	179.44

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 170 FT
SLOPE= .059 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.02 FT
PEAK VELOCITY= 6.9 FPS
TRAVEL TIME = .4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 12 **CULVERT**

Qin = 20.65 CFS @ 11.87 HRS, VOLUME= .89 AF
Qout= 20.56 CFS @ 11.88 HRS, VOLUME= .89 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.44
.30	.25	1.86
.45	.45	4.17
1.05	1.32	17.82
1.20	1.52	20.81
1.35	1.68	22.69
1.41	1.72	22.90
1.46	1.75	22.69
1.50	1.77	21.29

18" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .035 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.16 FT
PEAK VELOCITY= 13.7 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 13 **ROADSIDE SWALE**

Qin = 20.49 CFS @ 11.98 HRS, VOLUME= 1.79 AF
Qout= 20.57 CFS @ 12.04 HRS, VOLUME= 1.78 AF, ATTEN= 0%, LAG= 3.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.29
.40	1.68	4.47
.60	2.89	9.57
.86	4.82	19.42
1.20	7.96	38.52
1.60	12.56	71.31
2.00	18.12	116.80

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 400 FT
SLOPE= .025 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .92 FT
PEAK VELOCITY= 4.2 FPS
TRAVEL TIME = 1.6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 14 **CULVERT**

Qin = 27.37 CFS @ 12.18 HRS, VOLUME= 2.66 AF
Qout= 27.45 CFS @ 12.18 HRS, VOLUME= 2.66 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.16	.58
.40	.45	2.45
.60	.79	5.47
1.40	2.35	23.39
1.60	2.69	27.31
1.80	2.98	29.78
1.88	3.06	30.06
1.94	3.11	29.78
2.00	3.14	27.94

24" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .013 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.61 FT
PEAK VELOCITY= 10.1 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 16 **STONE SWALE**

Qin = 43.22 CFS @ 12.33 HRS, VOLUME= 4.70 AF
Qout= 42.90 CFS @ 12.34 HRS, VOLUME= 4.70 AF, ATTEN= 1%, LAG= 1.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	3.80
.40	1.68	13.14
.60	2.89	28.14
.86	4.82	57.09
1.20	7.96	113.22
1.60	12.56	209.60
2.00	18.12	343.33

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 370 FT
SLOPE= .216 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .73 FT
PEAK VELOCITY= 11.1 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 17 **CULVERT**

Qin = 17.75 CFS @ 11.86 HRS, VOLUME= .80 AF
Qout= 17.69 CFS @ 11.86 HRS, VOLUME= .80 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.18	.13	.36
.35	.34	1.50
.53	.61	3.36
1.23	1.80	14.37
1.40	2.06	16.78
1.58	2.28	18.29
1.65	2.35	18.46
1.70	2.38	18.29
1.75	2.41	17.17

21" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.40 FT
PEAK VELOCITY= 8.1 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 18 **ROADSIDE SWALE**

Qin = 17.69 CFS @ 11.86 HRS, VOLUME= .80 AF
Qout= 15.67 CFS @ 11.90 HRS, VOLUME= .80 AF, ATTEN= 11%, LAG= 2.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.24
.40	1.68	7.74
.60	2.89	16.58
.86	4.82	33.64
1.20	7.96	66.71
1.60	12.56	123.51
2.00	18.12	202.31

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 600 FT
SLOPE= .075 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .61 FT
PEAK VELOCITY= 5.8 FPS
TRAVEL TIME = 1.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 19 **STONE SWALE**

Qin = 45.00 CFS @ 12.14 HRS, VOLUME= 4.00 AF
Qout= 46.34 CFS @ 12.13 HRS, VOLUME= 3.99 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	4.77
.40	1.68	16.48
.60	2.89	35.31
.86	4.82	71.63
1.20	7.96	142.04
1.60	12.56	262.97
2.00	18.12	430.75

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 230 FT
SLOPE= .34 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .68 FT
PEAK VELOCITY= 13.3 FPS
TRAVEL TIME = .3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 20 **ROADSIDE SWALE**

Qin = 46.34 CFS @ 12.13 HRS, VOLUME= 3.99 AF
Qout= 43.11 CFS @ 12.23 HRS, VOLUME= 3.98 AF, ATTEN= 7%, LAG= 5.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.83
.40	1.68	6.32
.60	2.89	13.54
.86	4.82	27.47
1.20	7.96	54.47
1.60	12.56	100.85
2.00	18.12	165.19

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 500 FT
SLOPE= .05 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.09 FT
PEAK VELOCITY= 6.6 FPS
TRAVEL TIME = 1.3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 21 **CULVERT**

Qin = 47.85 CFS @ 12.21 HRS, VOLUME= 5.72 AF
Qout= 48.13 CFS @ 12.21 HRS, VOLUME= 5.72 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.26	2.07
.50	.70	8.70
.75	1.24	19.46
1.75	3.67	83.19
2.00	4.21	97.12
2.25	4.65	105.90
2.35	4.79	106.88
2.43	4.87	105.89
2.50	4.91	99.36

30" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .05 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.20 FT
PEAK VELOCITY= 20.6 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 22 **OVERLAND FLOW**

Qin = 48.13 CFS @ 12.21 HRS, VOLUME= 5.72 AF
Qout= 50.04 CFS @ 12.21 HRS, VOLUME= 5.72 AF, ATTEN= 0%, LAG= .4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	5.61
.20	2.40	18.59
.30	3.90	38.18
.43	6.15	73.73
.60	9.60	138.47
.80	14.40	243.44
1.00	20.00	382.52

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .035
LENGTH= 300 FT
SLOPE= .35 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .35 FT
PEAK VELOCITY= 10.8 FPS
TRAVEL TIME = .5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 23 **ROADSIDE SWALE**

Qin = 58.83 CFS @ 11.92 HRS, VOLUME= 2.93 AF
Qout= 49.24 CFS @ 12.00 HRS, VOLUME= 2.92 AF, ATTEN= 16%, LAG= 4.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.09
.40	1.68	7.21
.60	2.89	15.44
.86	4.82	31.32
1.20	7.96	62.11
1.60	12.56	114.98
2.00	18.12	188.34

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 1000 FT
SLOPE= .065 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.08 FT
PEAK VELOCITY= 7.5 FPS
TRAVEL TIME = 2.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 24 **CULVERT**

Qin = 105.4 CFS @ 12.12 HRS, VOLUME= 11.57 AF
Qout= 105.1 CFS @ 12.13 HRS, VOLUME= 11.57 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.47	4.60
.40	4.03	19.32
.60	7.13	43.19
1.40	21.14	184.67
1.60	24.25	215.60
1.80	26.80	235.08
1.88	27.58	237.26
1.94	28.03	235.07
2.00	28.27	220.57

24" PIPE X 9
n= .012
LENGTH= 30 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .95 FT
PEAK VELOCITY= 7.9 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 25 **ROADSIDE SWALE**

Qin = 36.48 CFS @ 12.15 HRS, VOLUME= 2.94 AF
Qout= 35.18 CFS @ 12.21 HRS, VOLUME= 2.94 AF, ATTEN= 4%, LAG= 3.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.37
.40	1.68	4.73
.60	2.89	10.13
.86	4.82	20.55
1.20	7.96	40.76
1.60	12.56	75.47
2.00	18.12	123.61

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 530 FT
SLOPE= .028 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.12 FT
PEAK VELOCITY= 5.0 FPS
TRAVEL TIME = 1.8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 26 **STONE SWALE**

Qin = 26.31 CFS @ 12.47 HRS, VOLUME= 2.55 AF
Qout= 26.24 CFS @ 12.50 HRS, VOLUME= 2.54 AF, ATTEN= 0%, LAG= 1.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	3.34
.40	1.68	11.53
.60	2.89	24.70
.86	4.82	50.11
1.20	7.96	99.37
1.60	12.56	183.97
2.00	18.12	301.35

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 320 FT
SLOPE= .26 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .62 FT
PEAK VELOCITY= 8.7 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 27 **GIGGLE HOLLOW OVERLAND FLOW**

Qin = 103.0 CFS @ 12.22 HRS, VOLUME= 11.13 AF
Qout= 100.7 CFS @ 12.31 HRS, VOLUME= 11.08 AF, ATTEN= 2%, LAG= 5.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	2.40	7.29
.40	5.60	25.31
.60	9.60	54.34
.86	16.00	110.44
1.20	26.40	219.32
1.60	41.60	406.41
2.00	60.00	666.09

10' x 2' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1050 FT
SLOPE= .11 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .82 FT
PEAK VELOCITY= 6.8 FPS
TRAVEL TIME = 2.6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 28 **OVERLAND FLOW**

Qin = 9.84 CFS @ 11.85 HRS, VOLUME= .46 AF
Qout= 8.97 CFS @ 11.89 HRS, VOLUME= .46 AF, ATTEN= 9%, LAG= 2.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	4.23
.20	2.40	14.02
.30	3.90	28.79
.43	6.15	55.60
.60	9.60	104.43
.80	14.40	183.59
1.00	20.00	288.48

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .04
LENGTH= 550 FT
SLOPE= .26 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .15 FT
PEAK VELOCITY= 5.3 FPS
TRAVEL TIME = 1.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 29 **CULVERT**

Qin = 9.58 CFS @ 11.85 HRS, VOLUME= .46 AF
Qout= 9.84 CFS @ 11.85 HRS, VOLUME= .46 AF, ATTEN= 0%, LAG= .4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.24
.30	.25	1.00
.45	.45	2.23
1.05	1.32	9.53
1.20	1.52	11.12
1.35	1.68	12.13
1.41	1.72	12.24
1.46	1.75	12.13
1.50	1.77	11.38

18" PIPE

n= .012
LENGTH= 60 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.01 FT
PEAK VELOCITY= 7.2 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 30 **OVERLAND FLOW**

Qin = 8.70 CFS @ 11.98 HRS, VOLUME= .44 AF
Qout= 6.38 CFS @ 12.14 HRS, VOLUME= .44 AF, ATTEN= 27%, LAG= 9.4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.82
.20	2.40	12.63
.30	3.90	25.95
.43	6.15	50.12
.60	9.60	94.12
.80	14.40	165.47
1.00	20.00	260.00

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1350 FT
SLOPE= .33 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .13 FT
PEAK VELOCITY= 4.2 FPS
TRAVEL TIME = 5.3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 31 **OVERLAND FLOW**

Qin = 6.38 CFS @ 12.14 HRS, VOLUME= .44 AF
Qout= 3.30 CFS @ 12.63 HRS, VOLUME= .43 AF, ATTEN= 48%, LAG= 29.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	1.91
.20	2.40	6.34
.30	3.90	13.01
.43	6.15	25.13
.60	9.60	47.20
.80	14.40	82.98
1.00	20.00	130.40

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 2400 FT
SLOPE= .083 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .13 FT
PEAK VELOCITY= 2.2 FPS
TRAVEL TIME = 18.3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 32 **OVERLAND FLOW**

Qin = 23.25 CFS @ 11.93 HRS, VOLUME= .89 AF
Qout= 16.49 CFS @ 12.11 HRS, VOLUME= .88 AF, ATTEN= 29%, LAG= 10.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.58
.20	2.40	11.84
.30	3.90	24.33
.43	6.15	46.98
.60	9.60	88.23
.80	14.40	155.11
1.00	20.00	243.74

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1750 FT
SLOPE= .29 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .24 FT
PEAK VELOCITY= 5.7 FPS
TRAVEL TIME = 5.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 33 **OVERLAND FLOW**

Qin = 16.49 CFS @ 12.11 HRS, VOLUME= .88 AF
Qout= 13.66 CFS @ 12.19 HRS, VOLUME= .88 AF, ATTEN= 17%, LAG= 4.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	1.63
.20	2.40	5.39
.30	3.90	11.06
.43	6.15	21.37
.60	9.60	40.13
.80	14.40	70.55
1.00	20.00	110.87

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 400 FT
SLOPE= .06 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .34 FT
PEAK VELOCITY= 3.1 FPS
TRAVEL TIME = 2.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 34 **OVERLAND FLOW**

Qin = .07 CFS @ 16.09 HRS, VOLUME= .03 AF
Qout= .07 CFS @ 16.22 HRS, VOLUME= .03 AF, ATTEN= 0%, LAG= 7.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.04
.20	2.40	10.07
.30	3.90	20.69
.43	6.15	39.97
.60	9.60	75.06
.80	14.40	131.96
1.00	20.00	207.35

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .045
LENGTH= 600 FT
SLOPE= .17 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 0.00 FT
PEAK VELOCITY= 2.8 FPS
TRAVEL TIME = 3.6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 35 **ROADSIDE SWALE**

Qin = 8.36 CFS @ 12.13 HRS, VOLUME= 1.61 AF
Qout= 8.07 CFS @ 12.22 HRS, VOLUME= 1.60 AF, ATTEN= 3%, LAG= 5.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.71
.40	1.68	9.37
.60	2.89	20.08
.86	4.82	40.74
1.20	7.96	80.79
1.60	12.56	149.58
2.00	18.12	245.01

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 600 FT
SLOPE= .11 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .37 FT
PEAK VELOCITY= 5.4 FPS
TRAVEL TIME = 1.8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 36 **CULVERT**

Qin = 8.31 CFS @ 12.13 HRS, VOLUME= 1.61 AF
Qout= 8.36 CFS @ 12.13 HRS, VOLUME= 1.61 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.16	.51
.40	.45	2.15
.60	.79	4.80
1.40	2.35	20.52
1.60	2.69	23.96
1.80	2.98	26.12
1.88	3.06	26.36
1.94	3.11	26.12
2.00	3.14	24.51

24" PIPE
n= .012
LENGTH= 60 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .78 FT
PEAK VELOCITY= 7.3 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 37 **OVERLAND FLOW**

Qin = 1.16 CFS @ 12.98 HRS, VOLUME= .31 AF
Qout= 1.16 CFS @ 13.04 HRS, VOLUME= .31 AF, ATTEN= 0%, LAG= 3.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.62
.20	2.40	11.97
.30	3.90	24.59
.43	6.15	47.49
.60	9.60	89.19
.80	14.40	156.79
1.00	20.00	246.37

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .045
LENGTH= 290 FT
SLOPE= .24 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .03 FT
PEAK VELOCITY= 3.3 FPS
TRAVEL TIME = 1.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 39 **STONE SWALE**

Qin = 26.07 CFS @ 12.16 HRS, VOLUME= 2.17 AF
Qout= 25.88 CFS @ 12.18 HRS, VOLUME= 2.16 AF, ATTEN= 1%, LAG= 1.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.83
.40	1.68	9.79
.60	2.89	20.97
.86	4.82	42.55
1.20	7.96	84.39
1.60	12.56	156.23
2.00	18.12	255.91

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 275 FT
SLOPE= .12 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .66 FT
PEAK VELOCITY= 7.8 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 40 **CULVERT**

Qin = 26.10 CFS @ 12.16 HRS, VOLUME= 2.17 AF
Qout= 26.07 CFS @ 12.16 HRS, VOLUME= 2.17 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.16	.56
.40	.45	2.35
.60	.79	5.26
1.40	2.35	22.48
1.60	2.69	26.24
1.80	2.98	28.61
1.88	3.06	28.88
1.94	3.11	28.61
2.00	3.14	26.85

24" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .012 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.57 FT
PEAK VELOCITY= 9.7 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 45 **OVERLAND FLOW**

Qin = 42.45 CFS @ 11.96 HRS, VOLUME= 1.96 AF
Qout= 33.14 CFS @ 12.16 HRS, VOLUME= 1.94 AF, ATTEN= 22%, LAG= 12.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.32
.20	2.40	11.00
.30	3.90	22.59
.43	6.15	43.62
.60	9.60	81.92
.80	14.40	144.02
1.00	20.00	226.30

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 2650 FT
SLOPE= .25 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .36 FT
PEAK VELOCITY= 6.6 FPS
TRAVEL TIME = 6.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 46 **OVERLAND FLOW**

Qin = 62.75 CFS @ 12.04 HRS, VOLUME= 2.46 AF
Qout= 48.31 CFS @ 12.21 HRS, VOLUME= 2.45 AF, ATTEN= 23%, LAG= 10.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.45
.20	2.40	11.43
.30	3.90	23.47
.43	6.15	45.33
.60	9.60	85.14
.80	14.40	149.67
1.00	20.00	235.18

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 2200 FT
SLOPE= .27 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .45 FT
PEAK VELOCITY= 7.6 FPS
TRAVEL TIME = 4.8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 52 **RIP RAP SLOPE**

Qin = 107.0 CFS @ 12.12 HRS, VOLUME= 11.16 AF
Qout= 106.4 CFS @ 12.18 HRS, VOLUME= 11.16 AF, ATTEN= 1%, LAG= 3.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.0	0.00
.10	20.0	90.59
.20	40.1	287.71
.30	60.3	565.75
.43	86.6	1031.41
.60	121.1	1798.35
.80	161.9	2907.16
1.00	203.0	4220.40

200' x 1' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 200 FT
SLOPE= .5 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .11 FT
PEAK VELOCITY= 4.9 FPS
TRAVEL TIME = .7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 53 **OVERLAND FLOW**

Qin = 106.4 CFS @ 12.18 HRS, VOLUME= 11.16 AF
Qout= 103.0 CFS @ 12.22 HRS, VOLUME= 11.13 AF, ATTEN= 3%, LAG= 2.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.0	0.00
.10	20.1	86.05
.20	40.4	273.64
.30	60.9	538.76
.43	87.8	983.89
.60	123.6	1719.41
.80	166.4	2787.20
1.00	210.0	4057.65

200' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 800 FT
SLOPE= .45 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .11 FT
PEAK VELOCITY= 4.7 FPS
TRAVEL TIME = 2.8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

POND 1 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 12.83 CFS @ 12.14 HRS, VOLUME= 1.02 AF
Qout= .38 CFS @ 18.71 HRS, VOLUME= .07 AF, ATTEN= 97%, LAG= 394.0 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2344.9	0	0	0
2345.0	2180	109	109
2350.0	15250	43575	43684

STOR-IND METHOD
PEAK STORAGE = 41605 CF
PEAK ELEVATION= 2349.8 FT
FLOOD ELEVATION= 2351.0 FT
START ELEVATION= 2344.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 449.8 MIN (.07 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2349.7'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 2

Not described

Qin = 460.9 CFS @ 12.85 HRS, VOLUME= 93.31 AF
Qout= 460.9 CFS @ 12.85 HRS, VOLUME= 93.31 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 3

Not described

Qin = 233.0 CFS @ 12.77 HRS, VOLUME= 41.26 AF
Qout= 233.0 CFS @ 12.77 HRS, VOLUME= 41.26 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 4 **STORM POND, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 46.20 CFS @ 12.24 HRS, VOLUME= 4.90 AF
Qout= 43.22 CFS @ 12.33 HRS, VOLUME= 4.70 AF, ATTEN= 6%, LAG= 5.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2319.9	0	0	0
2320.0	3500	175	175
2324.0	7840	22680	22855

STOR-IND METHOD
PEAK STORAGE = 25615 CF
PEAK ELEVATION= 2324.5 FT
FLOOD ELEVATION= 2325.0 FT
START ELEVATION= 2319.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 26.9 MIN (4.65 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2321.0'	**36" CULVERT**
			n=.012 L=60' S=.005'/' Ke=.5 Cc=.9 Cd=.6

POND 5 **STORM POND, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 25.30 CFS @ 11.89 HRS, VOLUME= 2.14 AF
Qout= 20.49 CFS @ 11.98 HRS, VOLUME= 1.79 AF, ATTEN= 19%, LAG= 5.2 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2344.9	0	0	0
2345.0	2200	110	110
2350.0	4350	16375	16485

STOR-IND METHOD
PEAK STORAGE = 18750 CF
PEAK ELEVATION= 2350.7 FT
FLOOD ELEVATION= 2351.5 FT
START ELEVATION= 2344.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 70.8 MIN (1.79 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2349.5'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 6 **STORM POND, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 44.06 CFS @ 12.16 HRS, VOLUME= 4.45 AF
Qout= 45.00 CFS @ 12.14 HRS, VOLUME= 4.00 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2339.9	0	0	0
2340.0	2200	110	110
2345.0	6500	21750	21860

STOR-IND METHOD
PEAK STORAGE = 24540 CF
PEAK ELEVATION= 2345.6 FT
FLOOD ELEVATION= 2346.0 FT
START ELEVATION= 2339.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 47.3 MIN (4 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2344.4'	**20' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 7 **STORM POND, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 33.92 CFS @ 11.87 HRS, VOLUME= 1.65 AF
Qout= 23.58 CFS @ 11.98 HRS, VOLUME= 1.15 AF, ATTEN= 30%, LAG= 6.4 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2189.0	0	0	0
2190.0	3000	1500	1500
2195.0	6500	23750	25250

STOR-IND METHOD
PEAK STORAGE = 27122 CF
PEAK ELEVATION= 2195.4 FT
FLOOD ELEVATION= 2196.0 FT
START ELEVATION= 2189.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 109.2 MIN (1.15 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2194.2'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 8 **STORM TRENCH, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 105.1 CFS @ 12.13 HRS, VOLUME= 11.57 AF
Qout= 107.0 CFS @ 12.12 HRS, VOLUME= 11.16 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
0.0	0	0	0
.1	1800	90	90
3.5	9000	18360	18450

STOR-IND METHOD
PEAK STORAGE = 19625 CF
PEAK ELEVATION= 3.7 FT
FLOOD ELEVATION= 4.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 17.9 MIN (11.16 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	3.3'	**300' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.65, 1.94, 2.1, 0, 0, 0, 0, 0

POND 9 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 67.18 CFS @ 12.46 HRS, VOLUME= 9.26 AF
Qout= 65.35 CFS @ 12.51 HRS, VOLUME= 9.12 AF, ATTEN= 3%, LAG= 3.4 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2209.5	0	0	0
2210.0	2000	500	500
2215.0	5000	17500	18000

STOR-IND METHOD
PEAK STORAGE = 17075 CF
PEAK ELEVATION= 2214.7 FT
FLOOD ELEVATION= 2217.0 FT
START ELEVATION= 2209.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 10.8 MIN (9.02 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2211.0'	**42" CULVERT**
			n=.012 L=200' S=.01'/' Ke=.5 Cc=.9 Cd=.6

POND 12 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 42.42 CFS @ 12.21 HRS, VOLUME= 3.79 AF
Qout= 26.31 CFS @ 12.47 HRS, VOLUME= 2.55 AF, ATTEN= 38%, LAG= 15.7 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2329.0	0	0	0
2330.0	7000	3500	3500
2335.0	17500	61250	64750

STOR-IND METHOD
PEAK STORAGE = 66054 CF
PEAK ELEVATION= 2335.1 FT
FLOOD ELEVATION= 2336.0 FT
START ELEVATION= 2329.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 118.5 MIN (2.55 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2334.0'	**12' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 13 **STORM POND, ELKA, 7"/HR, 6' DEPTH**

Qin = 65.35 CFS @ 12.51 HRS, VOLUME= 9.12 AF
Qout= 62.27 CFS @ 12.60 HRS, VOLUME= 8.06 AF, ATTEN= 5%, LAG= 5.0 MIN
Qpri= 2.30 CFS @ 12.60 HRS, VOLUME= 1.31 AF
Qsec= 59.97 CFS @ 12.60 HRS, VOLUME= 6.75 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2199.0	0	0	0
2200.0	8000	4000	4000
2205.0	12000	50000	54000
2206.0	14000	13000	67000

STOR-IND METHOD
PEAK STORAGE = 68339 CF
PEAK ELEVATION= 2206.1 FT
FLOOD ELEVATION= 2207.0 FT
START ELEVATION= 2199.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 57.3 MIN (8.06 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2199.0'	**EXFILTRATION**
			V= .0097 FPM over SURFACE AREA
2	S	2204.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└─1=Exfiltration

Secondary Discharge
└─2=Broad-Crested Rectangular Weir

POND 15 **STORM POND, LEWBEACH, 7"/HR TO 2.5'DEPTH**

Qin = 70.67 CFS @ 11.97 HRS, VOLUME= 3.81 AF
Qout= 63.87 CFS @ 12.04 HRS, VOLUME= 2.89 AF, ATTEN= 10%, LAG= 4.1 MIN
Qpri= 1.12 CFS @ 12.04 HRS, VOLUME= .42 AF
Qsec= 62.75 CFS @ 12.04 HRS, VOLUME= 2.46 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2169.0	0	0	0
2170.0	3700	1850	1850
2175.0	15300	47500	49350

STOR-IND METHOD
PEAK STORAGE = 52926 CF
PEAK ELEVATION= 2175.4 FT
FLOOD ELEVATION= 2176.0 FT
START ELEVATION= 2169.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 96.4 MIN (2.89 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2172.5'	**EXFILTRATION**
			V= .0097 FPM over (SURFACE AREA - 9500 SF)
2	S	2174.0'	**20' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 16 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 15.53 CFS @ 11.86 HRS, VOLUME= .70 AF
Qout= 8.70 CFS @ 11.98 HRS, VOLUME= .44 AF, ATTEN= 44%, LAG= 7.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2184.0	0	0	0
2185.0	1500	750	750
2190.0	3700	13000	13750

STOR-IND METHOD
PEAK STORAGE = 13578 CF
PEAK ELEVATION= 2189.9 FT
FLOOD ELEVATION= 2191.0 FT
START ELEVATION= 2184.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 120.5 MIN (.44 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2189.0'	**5' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 17 **STORM POND, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 29.17 CFS @ 11.86 HRS, VOLUME= 1.33 AF
Qout= 23.25 CFS @ 11.93 HRS, VOLUME= .89 AF, ATTEN= 20%, LAG= 4.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2174.0	0	0	0
2175.0	2500	1250	1250
2180.0	6000	21250	22500

STOR-IND METHOD
PEAK STORAGE = 23975 CF
PEAK ELEVATION= 2180.3 FT
FLOOD ELEVATION= 2181.0 FT
START ELEVATION= 2174.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 112.3 MIN (.89 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2179.2'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 18 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 23.53 CFS @ 11.94 HRS, VOLUME= 1.94 AF
Qout= 8.31 CFS @ 12.13 HRS, VOLUME= 1.61 AF, ATTEN= 65%, LAG= 11.7 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2366.0	0	0	0
2367.0	6500	3250	3250
2370.0	9000	23250	26500

STOR-IND METHOD
PEAK STORAGE = 24004 CF
PEAK ELEVATION= 2369.7 FT
FLOOD ELEVATION= 2371.0 FT
START ELEVATION= 2366.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 97.2 MIN (1.61 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2368.0'	**18" ORIFICE/GRATE**
			Q=.6 PI r^2 SQR(2g) SQR(H-r) (Use H/2 if H<d)

POND 19 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 26.49 CFS @ 11.92 HRS, VOLUME= 1.63 AF
Qout= 1.72 CFS @ 14.03 HRS, VOLUME= .71 AF, ATTEN= 94%, LAG= 126.5 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2384.0	0	0	0
2385.0	6500	3250	3250
2390.0	15000	53750	57000

STOR-IND METHOD
PEAK STORAGE = 43161 CF
PEAK ELEVATION= 2388.7 FT
FLOOD ELEVATION= 2391.0 FT
START ELEVATION= 2384.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 251 MIN (.71 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2388.0'	**12" CULVERT**
			n=.012 L=120' S=.01'/' Ke=.5 Cc=.9 Cd=.6

POND 20 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 16.84 CFS @ 11.95 HRS, VOLUME= .90 AF
Qout= 1.16 CFS @ 12.98 HRS, VOLUME= .31 AF, ATTEN= 93%, LAG= 61.9 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2454.0	0	0	0
2455.0	3500	1750	1750
2460.0	6500	25000	26750

STOR-IND METHOD
PEAK STORAGE = 26222 CF
PEAK ELEVATION= 2459.9 FT
FLOOD ELEVATION= 2461.0 FT
START ELEVATION= 2454.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 226.9 MIN (.31 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2459.8'	**20' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 21 **STORM POND, LEWBEACH, 2.2"/HR TO 2.5'DEPTH**

Qin = 44.92 CFS @ 11.92 HRS, VOLUME= 2.34 AF
Qout= 42.58 CFS @ 11.96 HRS, VOLUME= 2.01 AF, ATTEN= 5%, LAG= 2.3 MIN
Qpri= .13 CFS @ 11.96 HRS, VOLUME= .05 AF
Qsec= 42.45 CFS @ 11.96 HRS, VOLUME= 1.96 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2189.0	0	0	0
2190.0	1500	750	750
2195.0	5300	17000	17750

STOR-IND METHOD
PEAK STORAGE = 20561 CF
PEAK ELEVATION= 2195.8 FT
FLOOD ELEVATION= 2196.5 FT
START ELEVATION= 2189.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 64.2 MIN (2.01 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2192.5'	**EXFILTRATION**
			V= .003 FPM over (SURFACE AREA - 3400 SF)
2	S	2194.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 22 **STORM POND, LEWBEACH, 2.2"/HR TO 2.5'DEPTH**

Qin = 12.14 CFS @ 11.92 HRS, VOLUME= 2.13 AF
Qout= 2.26 CFS @ 16.09 HRS, VOLUME= .85 AF, ATTEN= 81%, LAG= 250.5 MIN
Qpri= .07 CFS @ 16.09 HRS, VOLUME= .03 AF
Qsec= 2.20 CFS @ 16.09 HRS, VOLUME= .82 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2284.0	0	0	0
2285.0	1400	700	700
2290.0	7000	21000	21700
2295.0	12000	47500	69200

STOR-IND METHOD
PEAK STORAGE = 58299 CF
PEAK ELEVATION= 2293.9 FT
FLOOD ELEVATION= 2296.0 FT
START ELEVATION= 2284.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 299.7 MIN (.85 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2292.5'	**EXFILTRATION**
			V= .003 FPM over (SURFACE AREA - 9500 SF)
2	S	2293.0'	**12" CULVERT**
			n=.012 L=50' S=.01'/' Ke=.5 Cc=.9 Cd=.6

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Culvert

100 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 8.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	110.58	73.5	1%98 0%98 1%98 2%71 2%74 93%70	71	-	231.7	12.75	37.92
2	32.70	21.9	0%98 1%98 1%98 7%71 0%74 91%70	71	-	155.5	12.10	11.35
3	17.26	32.1	0%98 1%98 9%74 90%70	71	-	65.20	12.22	5.98
4	5.05	27.4	5%98 10%74 86%70	72	-	21.43	12.17	1.79
5	3.08	2.5	13%98 8%98 55%74 23%70	78	-	28.41	11.87	1.24
6	1.81	4.1	9%98 5%98 65%74 22%70	76	-	16.04	11.89	.70
7	2.87	4.4	8%98 4%98 57%74 31%70	76	-	25.23	11.89	1.11
8	6.45	2.4	5%98 4%98 49%74 42%70	75	-	56.26	11.87	2.45
9	2.89	1.4	10%98 3%98 64%74 23%70	76	-	24.70	11.86	1.12
10	3.17	2.5	14%98 3%98 66%74 17%70	77	-	28.74	11.87	1.25
11	2.87	1.3	16%98 10%98 57%74 17%70	79	-	25.69	11.85	1.18
12	4.06	4.1	8%98 36%74 57%70	74	-	34.59	11.89	1.51
13	6.43	4.5	11%98 5%98 39%74 46%70	76	-	56.36	11.89	2.49
14	11.96	25.7	4%98 30%74 66%70	72	-	53.05	12.14	4.25
15	14.07	10.1	3%98 0%98 1%98 86%74 9%70	75	-	99.59	11.97	5.35
16	2.30	1.5	6%98 10%98 9%98 75%74	80	-	21.13	11.86	.95
17	4.00	1.5	5%98 11%98 2%98 25%98 55%74 4%70	84	-	38.88	11.86	1.79
18	4.42	24.9	5%74 95%70	70	-	18.99	12.14	1.50
19	5.20	7.1	83%74 18%70	73	-	38.00	11.92	1.89
20	3.44	8.6	100%74	74	-	24.00	11.94	1.28
21	343.07	88.3	0%98 0%98 1%98 5%74 3%71 92%70	70	-	611.8	12.95	114.09

22	14.96	30.5	3%98 74%70	2%98	2%98	19%74	73	-	61.26	12.20	5.43
23	9.37	26.4	8%74	92%70			70	-	38.52	12.15	3.17
24	7.21	7.9	1%98 34%70	3%98	2%98	60%74	74	-	51.81	11.93	2.68
25	1.79	5.5	2%98 6%70	12%98	8%98	72%74	79	-	15.95	11.90	.74
26	4.73	8.2	2%98	78%74	19%70		74	-	33.53	11.94	1.76
33	1.50	1.0	14%98	5%98	7%98	73%74	80	-	13.12	11.84	.63

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
1	-	3.0	3.0	.33	.33	.050	1100	.0900	10.5	1.7	230.6
2	18.0	-	-	-	-	.012	50	.0200	10.2	.1	16.10
3	-	3.0	2.0	.33	.33	.040	1150	.0910	3.4	5.6	2.03
4	36.0	-	-	-	-	.012	50	.0100	11.2	.1	51.38
5	-	3.0	2.0	.33	.33	.040	260	.0760	7.9	.5	51.43
6	42.0	-	-	-	-	.012	50	.0080	11.5	.1	102.6
7	-	10.0	1.0	.10	.10	.050	2650	.2160	8.4	5.2	92.33
10	24.0	-	-	-	-	.012	100	.0350	16.6	.1	46.19
11	-	3.0	2.0	.33	.33	.040	170	.0590	7.0	.4	46.13
12	18.0	-	-	-	-	.012	50	.0350	13.7	.1	22.19
13	-	3.0	2.0	.33	.33	.040	400	.0250	4.5	1.5	28.52
14	24.0	-	-	-	-	.012	50	.0130	10.0	.1	31.09
16	-	3.0	2.0	.33	.33	.040	370	.2160	11.4	.5	48.37
17	21.0	-	-	-	-	.012	50	.0100	8.0	.1	17.44
18	-	3.0	2.0	.33	.33	.040	600	.0750	5.9	1.7	17.25
19	-	3.0	2.0	.33	.33	.040	230	.3400	14.3	.3	59.72
20	-	3.0	2.0	.33	.33	.040	500	.0500	7.1	1.2	55.19
21	30.0	-	-	-	-	.012	50	.0500	22.4	0.0	78.71
22	-	10.0	1.0	.10	.10	.035	300	.3500	12.0	.4	76.22
23	-	3.0	2.0	.33	.33	.040	1000	.0650	8.4	2.0	77.04
24	24.0x9	-	-	-	-	.012	30	.0100	8.7	.1	177.2
25	-	3.0	2.0	.33	.33	.040	530	.0280	5.5	1.6	51.30
26	-	3.0	2.0	.33	.33	.050	320	.2600	10.4	.5	48.03
27	-	10.0	2.0	.10	.10	.050	1050	.1100	7.8	2.2	161.5
28	-	10.0	1.0	.10	.10	.040	550	.2600	5.6	1.6	11.38

29	18.0	-	-	-	-	.012	60	.0100	6.8	.1	12.21
30	-	10.0	1.0	.10	.10	.050	1350	.3300	5.6	4.0	13.09
31	-	10.0	1.0	.10	.10	.050	2400	.0830	2.9	13.9	7.60
32	-	10.0	1.0	.10	.10	.050	1750	.2900	6.6	4.4	26.08
33	-	10.0	1.0	.10	.10	.050	400	.0600	3.7	1.8	24.55
34	-	10.0	1.0	.10	.10	.045	600	.1700	2.8	3.6	.15
35	-	3.0	2.0	.33	.33	.040	600	.1100	6.2	1.6	12.91
36	24.0	-	-	-	-	.012	60	.0100	8.1	.1	12.98
37	-	10.0	1.0	.10	.10	.045	290	.2400	4.7	1.0	9.27
39	-	3.0	2.0	.33	.33	.040	275	.1200	7.9	.6	27.38
40	24.0	-	-	-	-	.012	50	.0120	9.7	.1	26.85
45	-	10.0	1.0	.10	.10	.050	2650	.2500	7.5	5.9	51.56
46	-	10.0	1.0	.10	.10	.050	2200	.2700	8.7	4.2	75.27
52	-	200.0	1.0	.33	.33	.050	200	.5000	6.2	.5	177.9
53	-	200.0	1.0	.10	.10	.050	800	.4500	5.9	2.3	168.4

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2344.9	2351.0	2349.9	.99	16.10	2.10			87	55.1	
2	0.0	0.0	0.0	0.00	686.8	686.8			0	0.0	N
3	0.0	0.0	0.0	0.00	348.7	348.7			0	0.0	N
4	2319.9	2325.0	2324.8	.63	49.01	48.47			1	9.8	
5	2344.9	2351.5	2351.1	.46	29.61	28.88			2	3.2	
6	2339.9	2346.0	2345.9	.59	56.37	57.41			0	.7	
7	2189.0	2196.0	2196.0	.69	42.04	38.86			8	3.7	
8	0.0	4.0	4.0	.48	177.2	179.1			0	.3	
9	2209.9	2217.0	2216.9	.57	102.6	99.85			3	4.3	
12	2329.0	2336.0	2335.8	1.72	61.26	49.45			19	9.5	
13	2199.0	2207.0	2206.9	1.81	99.85	96.36	2.56	93.79	3	5.9	
15	2169.0	2176.0	2176.0	1.35	99.59	92.07	1.31	90.77	8	2.7	
16	2184.0	2191.0	2190.6	.35	21.13	18.52			12	3.7	
17	2174.0	2181.0	2180.9	.60	38.88	35.36			9	3.1	
18	2366.0	2371.0	2370.9	.77	33.61	13.14			61	12.4	
19	2384.0	2391.0	2390.1	1.33	38.00	4.40			88	55.3	
20	2454.0	2461.0	2460.3	.65	24.00	10.77			55	11.1	
21	2189.0	2196.5	2196.5	.52	62.80	59.52	.15	59.37	5	2.7	
22	2284.0	2296.0	2295.5	1.71	19.75	5.60	.15	5.45	72	154.1	

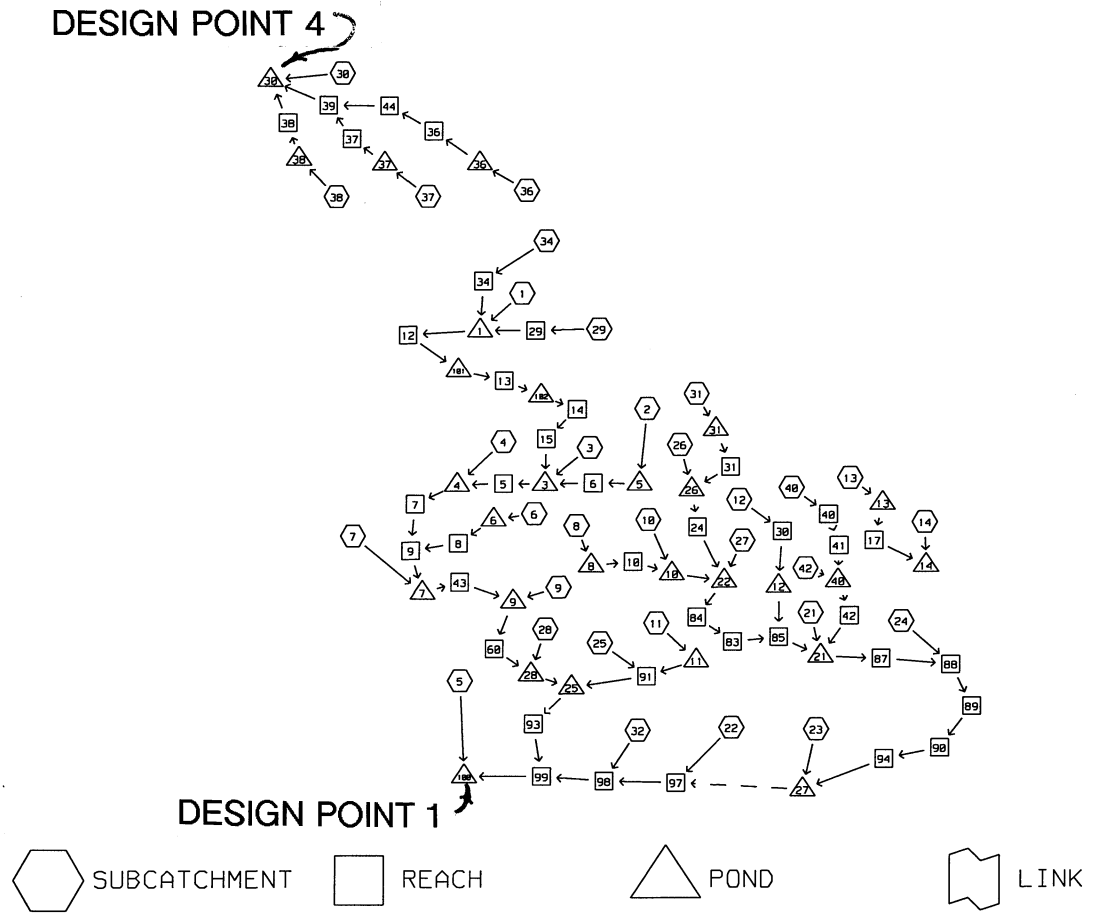
BIG INDIAN RESORT and SPA

AND

BIG INDIAN COUNTRY CLUB

POST-DEVELOPMENT

WATERSHED ROUTING ==========



1 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 3.50 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	5.73	3.9	64%98 36%74	89	-	23.12	11.89	1.01
2	2.13	3.8	13%98 27%74 60%70	75	-	4.92	11.89	.21
3	6.47	6.0	6%98 6%98 8%98 56%74 25%70	78	-	15.61	11.91	.74
4	1.52	3.2	13%98 1%98 3%98 70%74 14%70	77	-	3.92	11.89	.17
5	140.30	31.1	0%98 0%98 4%74 95%70	70	-	107.3	12.24	10.46
6	2.62	2.7	14%98 3%98 5%98 43%74 35%70	78	-	7.07	11.88	.30
7	3.21	2.9	3%98 2%98 3%98 76%74 16%70	75	-	7.53	11.89	.32
8	5.97	2.6	9%98 0%98 1%98 46%74 44%70	75	-	14.00	11.88	.59
9	9.64	8.1	3%98 2%98 2%98 75%74 18%70	75	-	17.89	11.95	.95
10	12.09	7.3	5%98 1%98 62%74 30%70 2%98	75	-	23.29	11.93	1.19
11	2.46	1.7	9%98 50%74 41%70	75	-	5.64	11.87	.24
12	10.42	15.8	3%98 64%74 25%70 4%98 3%98	76	-	16.89	12.04	1.08
13	4.55	4.3	67%74 32%70 1%98	73	-	9.29	11.90	.41
14	1.61	3.8	0%0100%74	74	-	3.53	11.89	.15
21	5.16	5.2	7%98 1%98 1%98 26%74 65%70	74	-	10.63	11.91	.48
22	46.48	29.1	0%0 3%98 7%74 90%70	71	-	39.77	12.21	3.67
23	10.33	7.6	0%98 5%98 12%74 82%70	72	-	16.53	11.94	.87
24	19.50	10.8	7%98 2%98 1%98 28%74 62%70	74	-	33.69	11.99	1.83
25	21.08	5.5	2%98 0%98 0%98 86%74 12%70	74	-	42.70	11.91	1.98

26	14.23	5.4	2%98	71%74	27%70		73	-	27.43	11.91	1.27
27	3.88	2.1	2%98	3%70	95%74		74	-	8.59	11.88	.36
28	2.64	2.3	31%74	69%70			71	-	5.00	11.88	.21
29	5.19	5.8	7%98	14%98	4%98	66%74 9%70	80	-	13.89	11.91	.65
30	293.59	95.5	0%98	4%74	5%71	91%70	70	-	98.31	13.15	21.11
31	20.89	8.4	1%98	3%98	1%98	1%98 80%74 15%70	75	-	38.91	11.96	2.06
32	93.51	61.6	0%98	1%98	2%98	9%74 87%70	71	-	46.74	12.65	7.26
34	6.50	5.0	100%39				39	-	.01	20.00	0.00
36	9.48	4.6	100%74				74	-	20.15	11.90	.89
37	6.65	3.8	100%74				74	-	14.59	11.89	.62
38	6.00	7.1	1%98	0%98	2%70	98%74	74	-	11.06	11.93	.56
40	3.97	2.4	91%74	9%70			74	-	8.84	11.88	.37
42	3.48	3.4	6%98	1%98	1%98	50%74 42%70	74	-	7.72	11.89	.33

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
5	-	3.0	2.0	.33	.33	.030	800	.1100	0.0	0.0	0.00
6	-	3.0	2.0	.33	.33	.030	1300	.0143	0.0	0.0	0.00
7	-	3.0	2.0	.33	.33	.050	330	.1500	0.0	0.0	0.00
8	-	3.0	2.0	.33	.33	.050	130	.3000	5.0	.4	.14
9	-	3.0	2.0	.33	.33	.050	500	.0900	2.7	3.1	.14
10	-	3.0	2.0	.33	.33	.030	1250	.0710	0.0	0.0	0.00
12	-	8.0	2.0	.33	.33	.040	370	.0130	0.0	0.0	0.00
13	-	8.0	2.0	.33	.33	.040	250	.0200	0.0	0.0	0.00
14	-	10.0	1.0	.10	.10	.045	170	.1500	0.0	0.0	0.00
15	-	3.0	2.0	.33	.33	.030	600	.0167	0.0	0.0	0.00
17	-	3.0	2.0	.33	.33	.050	170	.2000	0.0	0.0	0.00
24	-	5.0	2.0	.33	.33	.040	300	.2500	0.0	0.0	0.00
29	30.0	-	-	-	-	.012	70	.0100	8.2	.1	13.64
30	36.0	-	-	-	-	.012	50	.0070	7.5	.1	16.78
31	-	5.0	2.0	.33	.33	.040	200	.1200	0.0	0.0	0.00
34	18.0	-	-	-	-	.012	280	.0200	3.7	1.3	.01
36	-	10.0	1.0	.10	.10	.050	1500	.4400	4.0	6.2	1.25
37	-	10.0	1.0	.10	.10	.050	1750	.4400	0.0	0.0	0.00
38	-	10.0	1.0	.10	.10	.050	2500	.3000	0.0	0.0	0.00
39	-	8.0	2.0	.20	.20	.040	2700	.0480	2.6	17.4	1.09
40	30.0	-	-	-	-	.012	50	.0050	5.6	.1	8.73
41	-	3.0	2.0	.33	.33	.050	300	.2300	6.1	.8	7.97
42	-	3.0	2.0	.33	.33	.050	300	.2500	0.0	0.0	0.00
43	-	3.0	2.0	.33	.33	.050	450	.0730	2.5	3.1	.59
44	-	8.0	2.0	.20	.20	.040	1200	.0480	2.6	7.7	1.21

60	-	10.0	1.0	.10	.10	.050	250	.5200	4.4	1.0	1.61
83	42.0x2	-	-	-	-	.012	50	.0100	4.5	.2	1.40
84	-	3.0	2.5	.33	.33	.040	80	.0800	3.6	.4	1.40
85	-	3.0	2.5	.33	.33	.045	800	.1000	3.6	3.7	1.82
87	-	3.0	3.0	.33	.33	.045	2100	.0840	3.7	9.5	2.12
88	-	3.0	3.0	.33	.33	.045	1400	.0530	5.4	4.3	27.89
89	42.0	-	-	-	-	.012	50	.0500	17.1	0.0	27.83
90	-	5.0	3.0	.33	.33	.050	1500	.1000	5.9	4.3	24.42
91	-	3.0	2.0	.33	.33	.040	1050	.0890	7.5	2.3	35.10
93	-	10.0	1.0	.10	.10	.050	1300	.3500	4.2	5.2	5.59
94	48.0	-	-	-	-	.012	100	.0250	12.5	.1	24.39
97	-	10.0	3.0	.20	.20	.045	500	.0200	4.0	2.1	63.00
98	-	10.0	3.0	.20	.20	.045	3650	.0260	4.7	12.9	82.02
99	-	10.0	3.0	.20	.20	.045	3500	.0290	4.8	12.0	79.24

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2312.9	2317.0	2314.4	1.66	36.54	0.00			100	0.0	
3	2279.0	2290.5	2287.2	.74	15.61	0.00			100	0.0	
4	2179.0	2190.5	2183.8	.17	3.92	0.00			100	0.0	
5	2294.0	2301.0	2296.5	.21	4.92	0.00			100	0.0	
6	2199.0	2208.0	2204.2	.25	7.07	.14			98	293.6	
7	2109.0	2116.0	2110.6	.15	7.53	.59	.59	0.00	92	39.0	
8	2179.0	2186.0	2182.8	.59	14.00	.02	.02	0.00	100	487.0	
9	2064.0	2071.5	2069.2	.70	18.46	1.62			91	95.1	
10	2099.0	2106.0	2103.1	.38	23.29	14.35			38	7.4	
11	1999.0	2007.0	2002.9	.24	5.64	0.00			100	0.0	
12	2044.0	2051.5	2049.1	.85	16.78	.71			96	202.6	
13	2194.0	2201.0	2197.3	.40	9.29	0.00	0.00	0.00	100	0.0	
14	2154.0	2161.0	2155.4	.15	3.53	0.00			100	0.0	
21	1929.0	1936.5	1933.1	.27	10.63	2.14			80	206.9	
22	2069.0	2078.5	2074.1	.82	16.08	1.39			91	124.9	
25	1909.0	1917.0	1914.3	.96	35.10	6.17	.14	6.03	82	22.7	
26	2139.0	2146.5	2143.0	.70	27.43	1.19	1.19	0.00	96	119.1	
27	1504.0	1512.5	1508.9	.43	27.45	27.31	.86	26.45	1	2.1	
28	1929.0	1936.5	1931.5	.28	5.00	1.38	0.00	1.38	72	198.4	
30	0.0	0.0	0.0	0.00	98.35	98.35			0	0.0	N
31	2159.0	2166.5	2163.6	2.00	38.91	.18	.18	0.00	100	482.6	
36	2272.0	2276.0	2274.6	.53	20.15	1.28			94	63.4	
37	2297.0	2301.0	2298.4	.62	14.59	0.00			100	0.0	
38	2164.0	2171.0	2168.5	.56	11.06	0.00			100	0.0	
40	2014.0	2021.0	2018.1	.67	15.67	.09	.09	0.00	99	486.3	

100	1304.0	1316.0	1314.5	.84	107.5	139.3	.79	138.5	0	0.0
101	2307.9	2311.0	2307.9	0.00	0.00	0.00			0	0.0
102	2302.9	2306.0	2302.9	0.00	0.00	0.00			0	0.0

10 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	5.73	3.9	64%98 36%74	89	-	44.51	11.88	1.97
2	2.13	3.8	13%98 27%74 60%70	75	-	12.33	11.89	.53
3	6.47	6.0	6%98 6%98 8%98 56%74 25%70	78	-	37.25	11.91	1.75
4	1.52	3.2	13%98 1%98 3%98 70%74 14%70	77	-	9.34	11.88	.40
5	140.30	31.1	0%98 0%98 4%74 95%70	70	-	326.8	12.22	29.82
6	2.62	2.7	14%98 3%98 5%98 43%74 35%70	78	-	16.46	11.88	.71
7	3.21	2.9	3%98 2%98 3%98 76%74 16%70	75	-	18.72	11.88	.80
8	5.97	2.6	9%98 0%98 1%98 46%74 44%70	75	-	34.72	11.88	1.49
9	9.64	8.1	3%98 2%98 2%98 75%74 18%70	75	-	45.96	11.94	2.41
10	12.09	7.3	5%98 1%98 62%74 30%70 2%98	75	-	59.90	11.92	3.02
11	2.46	1.7	9%98 50%74 41%70	75	-	13.92	11.87	.61
12	10.42	15.8	3%98 64%74 25%70 4%98 3%98	76	-	42.76	12.03	2.67
13	4.55	4.3	67%74 32%70 1%98	73	-	24.55	11.89	1.07
14	1.61	3.8	0%0100%74	74	-	9.07	11.89	.39
21	5.16	5.2	7%98 1%98 1%98 26%74 65%70	74	-	27.66	11.90	1.25
22	46.48	29.1	0%0 3%98 7%74 90%70	71	-	116.8	12.20	10.22
23	10.33	7.6	0%98 5%98 12%74 82%70	72	-	45.97	11.93	2.36
24	19.50	10.8	7%98 2%98 1%98 28%74 62%70	74	-	87.59	11.98	4.73
25	21.08	5.5	2%98 0%98 0%98 86%74 12%70	74	-	111.4	11.90	5.11

26	14.23	5.4	2%98	71%74	27%70		73	-	73.35	11.90	3.35
27	3.88	2.1	2%98	3%70	95%74		74	-	21.71	11.87	.94
28	2.64	2.3	31%74	69%70			71	-	13.63	11.88	.58
29	5.19	5.8	7%98	14%98	4%98	66%74 9%70	80	-	31.72	11.90	1.48
30	293.59	95.5	0%98	4%74	5%71	91%70	70	-	302.7	13.06	60.70
31	20.89	8.4	1%98	3%98	1%98	1%98 80%74 15%70	75	-	98.37	11.94	5.21
32	93.51	61.6	0%98	1%98	2%98	9%74 87%70	71	-	139.5	12.61	20.32
34	6.50	5.0	100%39				39	-	1.82	11.99	.20
36	9.48	4.6	100%74				74	-	52.12	11.89	2.30
37	6.65	3.8	100%74				74	-	37.44	11.89	1.61
38	6.00	7.1	1%98	0%98	2%70	98%74	74	-	29.16	11.92	1.46
40	3.97	2.4	91%74	9%70			74	-	22.39	11.88	.96
42	3.48	3.4	6%98	1%98	1%98	50%74 42%70	74	-	19.72	11.88	.84

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
5	-	3.0	2.0	.33	.33	.030	800	.1100	5.0	2.7	3.01
6	-	3.0	2.0	.33	.33	.030	1300	.0143	0.0	0.0	0.00
7	-	3.0	2.0	.33	.33	.050	330	.1500	3.5	1.6	1.83
8	-	3.0	2.0	.33	.33	.050	130	.3000	5.6	.4	4.90
9	-	3.0	2.0	.33	.33	.050	500	.0900	3.7	2.2	4.52
10	-	3.0	2.0	.33	.33	.030	1250	.0710	4.0	5.2	1.71
12	-	8.0	2.0	.33	.33	.040	370	.0130	1.4	4.5	1.93
13	-	8.0	2.0	.33	.33	.040	250	.0200	0.0	0.0	0.00
14	-	10.0	1.0	.10	.10	.045	170	.1500	0.0	0.0	0.00
15	-	3.0	2.0	.33	.33	.030	600	.0167	0.0	0.0	0.00
17	-	3.0	2.0	.33	.33	.050	170	.2000	4.1	.7	.62
24	-	5.0	2.0	.33	.33	.040	300	.2500	11.6	.4	51.60
29	30.0	-	-	-	-	.012	70	.0100	9.9	.1	31.23
30	36.0	-	-	-	-	.012	50	.0070	9.3	.1	42.50
31	-	5.0	2.0	.33	.33	.040	200	.1200	7.5	.4	27.54
34	18.0	-	-	-	-	.012	280	.0200	6.2	.8	1.76
36	-	10.0	1.0	.10	.10	.050	1500	.4400	8.1	3.1	31.17
37	-	10.0	1.0	.10	.10	.050	1750	.4400	4.0	7.3	1.40
38	-	10.0	1.0	.10	.10	.050	2500	.3000	4.0	10.3	5.59
39	-	8.0	2.0	.20	.20	.040	2700	.0480	4.1	10.9	18.72
40	30.0	-	-	-	-	.012	50	.0050	7.0	.1	22.18
41	-	3.0	2.0	.33	.33	.050	300	.2300	7.9	.6	21.01
42	-	3.0	2.0	.33	.33	.050	300	.2500	5.1	1.0	4.31
43	-	3.0	2.0	.33	.33	.050	450	.0730	2.5	3.1	1.06
44	-	8.0	2.0	.20	.20	.040	1200	.0480	4.6	4.3	26.50

60	-	10.0	1.0	.10	.10	.050	250	.5200	8.5	.5	35.42
83	42.0x2	-	-	-	-	.012	50	.0100	11.1	.1	87.28
84	-	3.0	2.5	.33	.33	.040	80	.0800	9.3	.1	86.65
85	-	3.0	2.5	.33	.33	.045	800	.1000	9.5	1.4	98.55
87	-	3.0	3.0	.33	.33	.045	2100	.0840	9.0	3.9	99.17
88	-	3.0	3.0	.33	.33	.045	1400	.0530	7.7	3.0	108.0
89	42.0	-	-	-	-	.012	50	.0500	25.3	0.0	107.9
90	-	5.0	3.0	.33	.33	.050	1500	.1000	8.8	2.9	104.8
91	-	3.0	2.0	.33	.33	.040	1050	.0890	10.0	1.8	93.02
93	-	10.0	1.0	.10	.10	.050	1300	.3500	9.8	2.2	83.48
94	48.0	-	-	-	-	.012	100	.0250	19.4	.1	104.7
97	-	10.0	3.0	.20	.20	.045	500	.0200	5.5	1.5	207.0
98	-	10.0	3.0	.20	.20	.045	3650	.0260	6.7	9.0	300.9
99	-	10.0	3.0	.20	.20	.045	3500	.0290	7.1	8.2	313.8

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	---Qout--- ATTEN. (%)	---Qout--- LAG (MIN)	
1	2312.9	2317.0	2315.2	2.81	76.07	1.93			97	206.5	
3	2279.0	2290.5	2289.3	1.10	37.25	3.10			92	38.0	
4	2179.0	2190.5	2189.1	.57	9.34	1.86			80	121.1	
5	2294.0	2301.0	2299.3	.53	12.33	0.00			100	0.0	
6	2199.0	2208.0	2205.8	.35	16.46	5.04			69	9.5	
7	2109.0	2116.0	2114.3	.76	19.07	2.49	1.06	1.43	87	165.1	
8	2179.0	2186.0	2184.8	.97	34.72	1.90	.15	1.75	95	61.2	
9	2064.0	2071.5	2070.4	.90	46.60	39.34			16	5.8	
10	2099.0	2106.0	2104.5	.55	59.90	53.55			11	3.3	
11	1999.0	2007.0	2005.2	.42	13.92	.67			95	76.5	
12	2044.0	2051.5	2050.3	1.08	42.50	26.84			37	10.9	
13	2194.0	2201.0	2199.6	.79	24.55	.79	.16	.62	97	133.1	
14	2154.0	2161.0	2157.5	.58	9.07	0.00			100	0.0	
21	1929.0	1936.5	1934.7	.40	106.1	109.1			0	.6	
22	2069.0	2078.5	2076.3	1.43	106.2	85.21			20	6.1	
25	1909.0	1917.0	1915.7	1.32	96.92	94.47	.43	94.04	3	3.4	
26	2139.0	2146.5	2145.2	1.20	73.35	59.15	1.67	57.48	19	7.1	
27	1504.0	1512.5	1510.2	.57	109.4	108.9	.99	108.0	0	1.0	
28	1929.0	1936.5	1933.5	.66	37.71	19.30	.48	18.83	49	9.4	
30	0.0	0.0	0.0	0.00	312.4	312.4			0	0.0	N
31	2159.0	2166.5	2164.9	2.65	98.37	26.21	.39	25.82	73	14.5	
36	2272.0	2276.0	2275.4	.74	52.12	37.60			28	5.4	
37	2297.0	2301.0	2299.2	1.11	37.44	1.41			96	105.1	
38	2164.0	2171.0	2169.6	.73	29.16	9.92			66	12.7	
40	2014.0	2021.0	2019.8	1.01	40.72	4.71	.32	4.39	88	25.2	

100	1304.0	1316.0	1315.1	.90	398.3	398.6	.81	397.8	0	.1
101	2307.9	2311.0	2309.6	.92	1.93	0.00			100	0.0
102	2302.9	2306.0	2302.9	0.00	0.00	0.00			0	0.0

25 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 6.30 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	5.73	3.9	64%98 36%74	89	-	47.05	11.88	2.09
2	2.13	3.8	13%98 27%74 60%70	75	-	13.27	11.89	.57
3	6.47	6.0	6%98 6%98 8%98 56%74 25%70	78	-	39.95	11.91	1.88
4	1.52	3.2	13%98 1%98 3%98 70%74 14%70	77	-	10.02	11.88	.43
5	140.30	31.1	0%98 0%98 4%74 95%70	70	-	355.8	12.22	32.38
6	2.62	2.7	14%98 3%98 5%98 43%74 35%70	78	-	17.62	11.88	.76
7	3.21	2.9	3%98 2%98 3%98 76%74 16%70	75	-	20.13	11.88	.86
8	5.97	2.6	9%98 0%98 1%98 46%74 44%70	75	-	37.33	11.88	1.61
9	9.64	8.1	3%98 2%98 2%98 75%74 18%70	75	-	49.54	11.94	2.59
10	12.09	7.3	5%98 1%98 62%74 30%70 2%98	75	-	64.55	11.92	3.25
11	2.46	1.7	9%98 50%74 41%70	75	-	14.96	11.87	.66
12	10.42	15.8	3%98 64%74 25%70 4%98 3%98	76	-	46.04	12.03	2.88
13	4.55	4.3	67%74 32%70 1%98	73	-	26.51	11.89	1.16
14	1.61	3.8	0%0100%74	74	-	9.77	11.89	.42
21	5.16	5.2	7%98 1%98 1%98 26%74 65%70	74	-	29.83	11.90	1.35
22	46.48	29.1	0%0 3%98 7%74 90%70	71	-	126.9	12.19	11.08
23	10.33	7.6	0%98 5%98 12%74 82%70	72	-	49.79	11.93	2.55
24	19.50	10.8	7%98 2%98 1%98 28%74 62%70	74	-	94.46	11.98	5.10
25	21.08	5.5	2%98 0%98 0%98 86%74 12%70	74	-	120.2	11.90	5.52

26	14.23	5.4	2%98	71%74	27%70		73	-	79.24	11.90	3.62
27	3.88	2.1	2%98	3%70	95%74		74	-	23.37	11.87	1.02
28	2.64	2.3	31%74	69%70			71	-	14.74	11.88	.63
29	5.19	5.8	7%98	14%98	4%98	66%74 9%70	80	-	33.92	11.90	1.58
30	293.59	95.5	0%98	4%74	5%71	91%70	70	-	330.0	13.05	66.02
31	20.89	8.4	1%98	3%98	1%98	1%98 80%74 15%70	75	-	106.0	11.94	5.62
32	93.51	61.6	0%98	1%98	2%98	9%74 87%70	71	-	151.8	12.61	22.05
34	6.50	5.0	100%39				39	-	2.51	11.98	.24
36	9.48	4.6	100%74				74	-	56.18	11.89	2.48
37	6.65	3.8	100%74				74	-	40.34	11.89	1.74
38	6.00	7.1	1%98	0%98	2%70	98%74	74	-	31.47	11.92	1.57
40	3.97	2.4	91%74	9%70			74	-	24.11	11.88	1.04
42	3.48	3.4	6%98	1%98	1%98	50%74 42%70	74	-	21.24	11.88	.91

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
5	-	3.0	2.0	.33	.33	.030	800	.1100	5.5	2.4	4.48
6	-	3.0	2.0	.33	.33	.030	1300	.0143	0.0	0.0	0.00
7	-	3.0	2.0	.33	.33	.050	330	.1500	3.7	1.5	2.72
8	-	3.0	2.0	.33	.33	.050	130	.3000	6.0	.4	5.85
9	-	3.0	2.0	.33	.33	.050	500	.0900	3.9	2.2	5.33
10	-	3.0	2.0	.33	.33	.030	1250	.0710	4.0	5.2	2.50
12	-	8.0	2.0	.33	.33	.040	370	.0130	1.4	4.4	2.42
13	-	8.0	2.0	.33	.33	.040	250	.0200	1.7	2.4	.23
14	-	10.0	1.0	.10	.10	.045	170	.1500	0.0	0.0	0.00
15	-	3.0	2.0	.33	.33	.030	600	.0167	0.0	0.0	0.00
17	-	3.0	2.0	.33	.33	.050	170	.2000	4.1	.7	1.04
24	-	5.0	2.0	.33	.33	.040	300	.2500	12.4	.4	62.34
29	30.0	-	-	-	-	.012	70	.0100	10.0	.1	33.40
30	36.0	-	-	-	-	.012	50	.0070	9.4	.1	45.76
31	-	5.0	2.0	.33	.33	.040	200	.1200	7.9	.4	34.29
34	18.0	-	-	-	-	.012	280	.0200	6.8	.7	2.55
36	-	10.0	1.0	.10	.10	.050	1500	.4400	8.6	2.9	35.35
37	-	10.0	1.0	.10	.10	.050	1750	.4400	4.0	7.3	1.86
38	-	10.0	1.0	.10	.10	.050	2500	.3000	4.5	9.2	7.92
39	-	8.0	2.0	.20	.20	.040	2700	.0480	4.4	10.2	21.97
40	30.0	-	-	-	-	.012	50	.0050	7.1	.1	23.89
41	-	3.0	2.0	.33	.33	.050	300	.2300	8.0	.6	22.63
42	-	3.0	2.0	.33	.33	.050	300	.2500	6.0	.8	6.86
43	-	3.0	2.0	.33	.33	.050	450	.0730	2.5	3.1	1.08
44	-	8.0	2.0	.20	.20	.040	1200	.0480	4.9	4.1	30.66

60	-	10.0	1.0	.10	.10	.050	250	.5200	9.0	.5	40.60
83	42.0x2	-	-	-	-	.012	50	.0100	11.4	.1	101.2
84	-	3.0	2.5	.33	.33	.040	80	.0800	9.6	.1	100.9
85	-	3.0	2.5	.33	.33	.045	800	.1000	10.0	1.3	118.3
87	-	3.0	3.0	.33	.33	.045	2100	.0840	9.5	3.7	121.7
88	-	3.0	3.0	.33	.33	.045	1400	.0530	8.1	2.9	131.6
89	42.0	-	-	-	-	.012	50	.0500	26.4	0.0	131.6
90	-	5.0	3.0	.33	.33	.050	1500	.1000	9.3	2.7	127.6
91	-	3.0	2.0	.33	.33	.040	1050	.0890	10.2	1.7	100.5
93	-	10.0	1.0	.10	.10	.050	1300	.3500	10.0	2.2	93.46
94	48.0	-	-	-	-	.012	100	.0250	20.2	.1	127.5
97	-	10.0	3.0	.20	.20	.045	500	.0200	5.7	1.5	234.8
98	-	10.0	3.0	.20	.20	.045	3650	.0260	6.9	8.8	340.1
99	-	10.0	3.0	.20	.20	.045	3500	.0290	7.3	8.0	354.1

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2312.9	2317.0	2315.3	2.88	81.35	2.42			97	163.7	
3	2279.0	2290.5	2289.4	1.12	39.95	4.48			89	26.8	
4	2179.0	2190.5	2189.2	.57	10.02	2.63			74	82.5	
5	2294.0	2301.0	2299.7	.57	13.27	0.00			100	0.0	
6	2199.0	2208.0	2206.1	.37	17.62	5.86			67	9.1	
7	2109.0	2116.0	2114.4	.79	20.69	3.64	1.08	2.56	82	110.8	
8	2179.0	2186.0	2184.9	.99	37.33	2.76	.16	2.60	93	37.9	
9	2064.0	2071.5	2070.6	.92	50.19	44.25			12	5.5	
10	2099.0	2106.0	2104.7	.57	64.55	57.16			11	3.3	
11	1999.0	2007.0	2005.2	.42	14.96	.93			94	51.5	
12	2044.0	2051.5	2050.4	1.10	45.76	30.71			33	9.6	
13	2194.0	2201.0	2199.6	.79	26.51	1.21	.17	1.04	95	84.1	
14	2154.0	2161.0	2158.0	.70	9.77	0.00			100	0.0	
21	1929.0	1936.5	1934.9	.42	129.4	131.1			0	.8	
22	2069.0	2078.5	2076.6	1.52	121.2	100.2			17	5.9	
25	1909.0	1917.0	1915.9	1.36	107.7	104.0	.45	103.5	3	3.0	
26	2139.0	2146.5	2145.4	1.23	79.32	68.06	1.70	66.36	14	6.9	
27	1504.0	1512.5	1510.5	.60	132.9	132.6	1.02	131.6	0	1.0	
28	1929.0	1936.5	1933.9	.73	42.44	21.68	.65	21.03	49	10.3	
30	0.0	0.0	0.0	0.00	340.9	340.9			0	0.0	N
31	2159.0	2166.5	2165.2	2.76	106.0	37.64	.44	37.20	64	12.0	
36	2272.0	2276.0	2275.5	.76	56.18	41.89			25	4.5	
37	2297.0	2301.0	2299.2	1.14	40.34	1.87			95	78.6	
38	2164.0	2171.0	2169.8	.76	31.47	13.42			57	11.8	
40	2014.0	2021.0	2019.9	1.04	43.86	7.86	.34	7.52	82	15.0	

100	1304.0	1316.0	1315.3	.91	448.3	447.3	.82	446.5	0	.3
101	2307.9	2311.0	2310.0	1.16	2.42	.28			88	316.1
102	2302.9	2306.0	2302.9	0.00	.23	0.00			100	0.0

SUBCATCHMENT 1

PEAK= 47.05 CFS @ 11.88 HRS, VOLUME= 2.09 AF

ACRES	CN		
3.66	98	OPEN WATER	SCS TR-20 METHOD
2.07	74	C SOIL, LAWN, GOOD CONDITION	TYPE II 24-HOUR
			RAINFALL= 6.30 IN
5.73	89		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.9
Short Grass Pasture Kv=7 L=340' s=.0441 '/' V=1.47 fps		

SUBCATCHMENT 2

PEAK= 13.27 CFS @ 11.89 HRS, VOLUME= .57 AF

ACRES	CN		
.28	98	ROAD	SCS TR-20 METHOD
.57	74	C SOIL,GRASS, GOOD CONDITION	TYPE II 24-HOUR
1.28	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
2.13	75		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Short Grass Pasture Kv=7 L=35' s=.05 '/' V=1.57 fps		
CHANNEL FLOW	**Segment ID:**	3.4
a=18 sq-ft Pw=15.8' r=1.139'		
s=.015 '/' n=.04 V=4.96 fps L=1000' Capacity=89.3 cfs		
	Total Length= 1035 ft Total Tc=	3.8

SUBCATCHMENT 3

PEAK= 39.95 CFS @ 11.91 HRS, VOLUME= 1.88 AF

ACRES	CN		
.38	98	ROAD	SCS TR-20 METHOD
.37	98	DRIVEWAYS	TYPE II 24-HOUR
.52	98	BUILDINGS	RAINFALL= 6.30 IN
3.60	74	C SOIL, GRASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
1.60	70	C SOIL, FOREST, GOOD CONDITION	
6.47	78		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.2
Short Grass Pasture Kv=7 L=130' s=.062 '/' V=1.74 fps		
CHANNEL FLOW	**ROADSIDE SWALE**	4.8
a=18 sq-ft Pw=15.8' r=1.139'		
s=.0143 '/' n=.04 V=4.85 fps L=1400' Capacity=87.2 cfs		
	Total Length= 1530 ft Total Tc=	6.0

SUBCATCHMENT 4

PEAK= 10.02 CFS @ 11.88 HRS, VOLUME= .43 AF

ACRES	CN	
.19	98	ROAD
.02	98	DRIVEWAYS
.04	98	BUILDINGS
1.06	74	C SOIL, GRASS, GOOD CONDITION
.21	70	C SOIL, FOREST, GOOD CONDITION
1.52	77	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.3
Short Grass Pasture Kv=7 L=200' s=.125 '/' V=2.47 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.3
Short Grass Pasture Kv=7 L=220' s=.16 '/' V=2.8 fps		
CHANNEL FLOW	**ROADSIDE SWALE**	.6
a=18 sq-ft Pw=15.8' r=1.139'		
s=.111 '/' n=.04 V=13.5 fps L=450' Capacity=243 cfs		
	Total Length= 870 ft Total Tc=	3.2

SUBCATCHMENT 5

PEAK= 355.8 CFS @ 12.22 HRS, VOLUME= 32.38 AF

ACRES	CN	
.10	98	BUILDINGS
.11	98	DRIVEWAYS
6.26	74	C SOIL, LAWN, GOOD CONDITION
133.83	70	C SOIL, FOREST, GOOD CONDITION
140.30	70	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	19.2
Forest w/Heavy Litter Kv=2.5 L=1700' s=.35 '/' V=1.48 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	11.9
Short Grass Pasture Kv=7 L=850' s=.029 '/' V=1.19 fps		
	Total Length= 2550 ft Total Tc=	31.1

SUBCATCHMENT 6

PEAK= 17.62 CFS @ 11.88 HRS, VOLUME= .76 AF

ACRES	CN	
.36	98	ROAD
.08	98	DRIVEWAYS
.14	98	BUILDINGS
1.13	74	C SOIL, GRASS, GOOD CONDITION
.91	70	C SOIL, FOREST, GOOD CONDITION
2.62	78	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Short Grass Pasture Kv=7 L=50' s=.222 '/' V=3.3 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.4
Forest w/Heavy Litter Kv=2.5 L=100' s=.222 '/' V=1.18 fps		
CHANNEL FLOW	**ROADSIDE SWALE**	1.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.04 '/' n=.04 V=8.1 fps L=500' Capacity=145.9 cfs		

	Total Length= 650 ft Total Tc=	2.7

SUBCATCHMENT 7

PEAK= 20.13 CFS @ 11.88 HRS, VOLUME= .86 AF

ACRES	CN	
.10	98	ROAD
.08	98	DRIVEWAYS
.09	98	BUILDINGS
2.43	74	C SOIL, LAWN, GOOD CONDITION
.51	70	C SOIL, FOREST, GOOD CONDITION
3.21	75	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.8
Short Grass Pasture Kv=7 L=180' s=.3 '/' V=3.83 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.2
Forest w/Heavy Litter Kv=2.5 L=20' s=.3 '/' V=1.37 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.8
Short Grass Pasture Kv=7 L=260' s=.12 '/' V=2.42 fps		

	Total Length= 470 ft Total Tc=	2.9

SUBCATCHMENT 8

PEAK= 37.33 CFS @ 11.88 HRS, VOLUME= 1.61 AF

ACRES	CN	
.56	98	ROAD
.02	98	DRIVEWAYS
.04	98	BUILDINGS
2.73	74	C SOIL, LAWN, GOOD CONDITION
2.62	70	C SOIL, FOREST, GOOD CONDITION
5.97	75	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.5
Forest w/Heavy Litter Kv=2.5 L=140' s=.385 '/' V=1.55 fps		
CHANNEL FLOW	**Segment ID:**	1.1
a=18 sq-ft Pw=15.8' r=1.139'		
s=.061 '/' n=.03 V=13.34 fps L=900' Capacity=240.2 cfs		
	Total Length= 1040 ft Total Tc=	2.6

SUBCATCHMENT 9

PEAK= 49.54 CFS @ 11.94 HRS, VOLUME= 2.59 AF

ACRES	CN	
.25	98	ROAD
.20	98	DRIVEWAYS
.20	98	BUILDINGS
7.22	74	C SOIL, LAWN, GOOD CONDITION
1.77	70	C SOIL, FOREST, GOOD CONDITION
9.64	75	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.9
Short Grass Pasture Kv=7 L=350' s=.2 '/' V=3.13 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Forest w/Heavy Litter Kv=2.5 L=30' s=.2 '/' V=1.12 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	5.7
Short Grass Pasture Kv=7 L=480' s=.04 '/' V=1.4 fps		
	Total Length= 870 ft Total Tc=	8.1

SUBCATCHMENT 10

PEAK= 64.55 CFS @ 11.92 HRS, VOLUME= 3.25 AF

ACRES	CN		
.64	98	ROAD	SCS TR-20 METHOD
.10	98	DRIVEWAYS	TYPE II 24-HOUR
7.54	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
3.60	70	C SOIL, FOREST, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
.21	98	BUILDINGS	
12.09	75		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.3
Short Grass Pasture Kv=7 L=1330' s=.19 '/' V=3.05 fps		

SUBCATCHMENT 11

PEAK= 14.96 CFS @ 11.87 HRS, VOLUME= .66 AF

ACRES	CN		
.22	98	ROAD	SCS TR-20 METHOD
1.24	74	C SOIL, LAWN, GOOD CONDITION	TYPE II 24-HOUR
1.00	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
2.46	75		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	0.0
Paved Kv=20.3282 L=10' s=.03 '/' V=3.52 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.7
Short Grass Pasture Kv=7 L=380' s=.29 '/' V=3.77 fps		

	Total Length= 390 ft Total Tc=	1.7

SUBCATCHMENT 12

PEAK= 46.04 CFS @ 12.03 HRS, VOLUME= 2.88 AF

ACRES	CN	
.34	98	ROAD
6.66	74	C SOIL, LAWN, GOOD CONDITION
2.63	70	C SOIL, FOREST, GOOD CONDITION
.45	98	DRIVEWAYS
.34	98	BUILDINGS
10.42	76	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.5
Paved Kv=20.3282 L=90' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.2
Short Grass Pasture Kv=7 L=100' s=.04 '/' V=1.4 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.0
Short Grass Pasture Kv=7 L=710' s=.178 '/' V=2.95 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.3
Forest w/Heavy Litter Kv=2.5 L=270' s=.178 '/' V=1.05 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	5.8
Short Grass Pasture Kv=7 L=650' s=.07 '/' V=1.85 fps		
	Total Length= 1820 ft Total Tc=	15.8

SUBCATCHMENT 13

PEAK= 26.51 CFS @ 11.89 HRS, VOLUME= 1.16 AF

ACRES	CN	
3.06	74	C SOIL, GRASS, GOOD CONDITION
1.45	70	C SOIL, FOREST, GOOD CONDITION
.04	98	BUILDINGS
4.55	73	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.3
Short Grass Pasture Kv=7 L=550' s=.155 '/' V=2.76 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.0
Forest w/Heavy Litter Kv=2.5 L=60' s=.155 '/' V=.98 fps		
	Total Length= 610 ft Total Tc=	4.3

SUBCATCHMENT 14

PEAK= 9.77 CFS @ 11.89 HRS, VOLUME= .42 AF

ACRES	CN	
0.00	0	
1.61	74	C SOIL, LAWN, GOOD CONDITION
1.61	74	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.8
Short Grass Pasture Kv=7 L=500' s=.1 '/' V=2.21 fps		

SUBCATCHMENT 21

PEAK= 29.83 CFS @ 11.90 HRS, VOLUME= 1.35 AF

ACRES	CN	
.38	98	ROAD
.06	98	DRIVEWAY
.07	98	BUILDINGS
1.32	74	C SOIL, LAWN, GOOD CONDITION
3.33	70	C SOIL, FOREST, GOOD CONDITION
5.16	74	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.03 '/' V=3.52 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.6
Forest w/Heavy Litter Kv=2.5 L=350' s=.26 '/' V=1.27 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.5
Short Grass Pasture Kv=7 L=100' s=.26 '/' V=3.57 fps		

	Total Length= 470 ft Total Tc=	5.2

SUBCATCHMENT 22

PEAK= 126.9 CFS @ 12.19 HRS, VOLUME= 11.08 AF

ACRES	CN	
0.00	0	
1.29	98	ROAD
3.42	74	C SOIL, GRASS, GOOD CONDITION
41.77	70	C SOIL, FOREST, GOOD CONDITION
46.48	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	13.1
Forest w/Heavy Litter Kv=2.5 L=1200' s=.375 '/' V=1.53 fps		
CIRCULAR CHANNEL	**Segment ID:**	.2
4" Diameter a=.09 sq-ft Pw=1' r=.083'		
s=.02 '/' n=.012 V=3.34 fps L=50' Capacity=.3 cfs		
CHANNEL FLOW	**Segment ID:**	1.1
a=18 sq-ft Pw=15.8' r=1.139'		
s=.1 '/' n=.05 V=10.25 fps L=650' Capacity=184.5 cfs		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.3
Forest w/Heavy Litter Kv=2.5 L=200' s=.35 '/' V=1.48 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	12.4
Short Grass Pasture Kv=7 L=900' s=.03 '/' V=1.21 fps		
	Total Length= 3000 ft Total Tc=	29.1

SUBCATCHMENT 23

PEAK= 49.79 CFS @ 11.93 HRS, VOLUME= 2.55 AF

ACRES	CN	
.03	98	BUILDINGS
.55	98	ROAD
1.26	74	C SOIL, GRASS, GOOD CONDITION
8.49	70	C SOIL, FOREST, GOOD CONDITION
10.33	72	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=12' s=.03 '/' V=3.52 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Short Grass Pasture Kv=7 L=30' s=.4 '/' V=4.43 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	6.9
Forest w/Heavy Litter Kv=2.5 L=600' s=.34 '/' V=1.46 fps		
CHANNEL FLOW	**Segment ID:**	.5
a=18 sq-ft Pw=15.8' r=1.139'		
s=.071 '/' n=.04 V=10.8 fps L=350' Capacity=194.4 cfs		
	Total Length= 992 ft Total Tc=	7.6

SUBCATCHMENT 24

PEAK= 94.46 CFS @ 11.98 HRS, VOLUME= 5.10 AF

ACRES	CN	
1.33	98	PARKING
.48	98	BUILDINGS
.14	98	DRIVEWAYS
5.43	74	C SOIL, LAWN, GOOD CONDITION
12.12	70	C SOIL, FOREST, GOOD CONDITION
19.50	74	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	10.5
Forest w/Heavy Litter Kv=2.5 L=970' s=.38 '/' V=1.54 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.3
Short Grass Pasture Kv=7 L=70' s=.38 '/' V=4.32 fps		
	Total Length= 1040 ft Total Tc=	10.8

SUBCATCHMENT 25

PEAK= 120.2 CFS @ 11.90 HRS, VOLUME= 5.52 AF

ACRES	CN	
.37	98	ROAD
.02	98	DRIVEWAYS
.04	98	BUILDINGS
18.16	74	C SOIL, LAWN, GOOD CONDITION
2.49	70	C SOIL, FOREST, GOOD CONDITION
21.08	74	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	0.0
Paved Kv=20.3282 L=10' s=.03 '/' V=3.52 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.1
Forest w/Heavy Litter Kv=2.5 L=360' s=.35 '/' V=1.48 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.4
Short Grass Pasture Kv=7 L=360' s=.35 '/' V=4.14 fps		
	Total Length= 730 ft Total Tc=	5.5

SUBCATCHMENT 26

PEAK= 79.24 CFS @ 11.90 HRS, VOLUME= 3.62 AF

ACRES	CN		
.31	98	ROAD	SCS TR-20 METHOD
10.06	74	C SOIL, GRASS, GOOD CONDITION	TYPE II 24-HOUR
3.86	70	C SOIL, FOREST, GOOD CONDITION	RAINFALL= 6.30 IN
14.23	73		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=12' s=.03 '/' V=3.52 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	5.3
Short Grass Pasture Kv=7 L=1000' s=.2 '/' V=3.13 fps		
	Total Length= 1012 ft Total Tc=	5.4

SUBCATCHMENT 27

PEAK= 23.37 CFS @ 11.87 HRS, VOLUME= 1.02 AF

ACRES	CN		
.08	98	ROAD	SCS TR-20 METHOD
.13	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
3.67	74	C SOIL, GRASS, GOOD CONDITION	RAINFALL= 6.30 IN
3.88	74		SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.4
Forest w/Heavy Litter Kv=2.5 L=30' s=.21 '/' V=1.15 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.7
Short Grass Pasture Kv=7 L=320' s=.21 '/' V=3.21 fps		
	Total Length= 350 ft Total Tc=	2.1

SUBCATCHMENT 28

PEAK= 14.74 CFS @ 11.88 HRS, VOLUME= .63 AF

ACRES	CN		
.83	74	C SOIL, GRASS, GOOD CONDITION	SCS TR-20 METHOD
1.81	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
2.64	71		RAINFALL= 6.30 IN
			SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	2.3
Forest w/Heavy Litter Kv=2.5 L=250' s=.52 '/' V=1.8 fps		

SUBCATCHMENT 29

PEAK= 33.92 CFS @ 11.90 HRS, VOLUME= 1.58 AF

ACRES	CN	
.36	98	ROAD
.75	98	PARKING
.20	98	ACCESS DRIVE
3.42	74	C SOIL, GRASS, GOOD CONDITION
.46	70	C SOIL, FOREST, GOOD CONDITION
5.19	80	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.3
Short Grass Pasture Kv=7 L=400' s=.085 '/' V=2.04 fps		
CHANNEL FLOW	**Segment ID:**	2.5
a=18 sq-ft Pw=15.8' r=1.139'		
s=.046 '/' n=.04 V=8.69 fps L=1300' Capacity=156.4 cfs		
	Total Length= 1700 ft Total Tc=	5.8

SUBCATCHMENT 30

PEAK= 330.0 CFS @ 13.05 HRS, VOLUME= 66.02 AF

ACRES	CN	
.32	98	ROADS
11.82	74	C SOIL, LAWN, GOOD CONDITION
14.50	71	C SOIL, MEADOW, GOOD CONDITION
266.95	70	C SOIL, FOREST, GOOD CONDITION
293.59	70	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	29.2
Forest w/Heavy Litter Kv=2.5 L=2700' s=.38 '/' V=1.54 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	66.3
Short Grass Pasture Kv=7 L=6100' s=.048 '/' V=1.53 fps		
	Total Length= 8800 ft Total Tc=	95.5

SUBCATCHMENT 31

PEAK= 106.0 CFS @ 11.94 HRS, VOLUME= 5.62 AF

ACRES	CN	
.21	98	ROAD
.60	98	PARKING
.11	98	DRIVEWAYS
.26	98	BUILDINGS
16.64	74	C SOIL, GRASS, GOOD CONDITION
3.07	70	C SOIL, FOREST, GOOD CONDITION
20.89	75	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=10' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.9
Forest w/Heavy Litter Kv=2.5 L=120' s=.17 '/' V=1.03 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	6.4
Short Grass Pasture Kv=7 L=1100' s=.17 '/' V=2.89 fps		
	Total Length= 1230 ft Total Tc=	8.4

SUBCATCHMENT 32

PEAK= 151.8 CFS @ 12.61 HRS, VOLUME= 22.05 AF

ACRES	CN	
.14	98	BUILDINGS
1.36	98	DRIVEWAY
2.26	98	ROAD
8.66	74	C SOIL, GRASS, GOOD CONDITION
81.09	70	C SOIL, FOREST, GOOD CONDITION
93.51	71	

SCS TR-20 METHOD
TYPE II 24-HOUR
RAINFALL= 6.30 IN
SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=12' s=.03 '/' V=3.52 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.6
Short Grass Pasture Kv=7 L=150' s=.35 '/' V=4.14 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.0
Forest w/Heavy Litter Kv=2.5 L=620' s=.35 '/' V=1.48 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	53.9
Short Grass Pasture Kv=7 L=3650' s=.026 '/' V=1.13 fps		
	Total Length= 4432 ft Total Tc=	61.6

SUBCATCHMENT 34

PEAK= 2.51 CFS @ 11.98 HRS, VOLUME= .24 AF

ACRES	CN		
6.50	39	A SOIL, VEGETATED ROOF, GOOD CON	SCS TR-20 METHOD TYPE II 24-HOUR RAINFALL= 6.30 IN SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
DIRECT ENTRY	**Segment ID:**	5.0

SUBCATCHMENT 36

PEAK= 56.18 CFS @ 11.89 HRS, VOLUME= 2.48 AF

ACRES	CN		
9.48	74	C SOIL, GRASS, GOOD CONDITION	SCS TR-20 METHOD TYPE II 24-HOUR RAINFALL= 6.30 IN SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	4.6
Short Grass Pasture Kv=7 L=530' s=.075 '/' V=1.92 fps		

SUBCATCHMENT 37

PEAK= 40.34 CFS @ 11.89 HRS, VOLUME= 1.74 AF

ACRES	CN		
6.65	74	C SOIL, GRASS, GOOD CONDITION	SCS TR-20 METHOD TYPE II 24-HOUR RAINFALL= 6.30 IN SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.8
Short Grass Pasture Kv=7 L=370' s=.054 '/' V=1.63 fps		

SUBCATCHMENT 38

PEAK= 31.47 CFS @ 11.92 HRS, VOLUME= 1.57 AF

ACRES	CN		
.04	98	BUILDING	SCS TR-20 METHOD TYPE II 24-HOUR RAINFALL= 6.30 IN SPAN= 10-20 HRS, dt=.1 HRS
.01	98	PARKING AREAS	
.09	70	C SOIL, FOREST, GOOD CONDITION	
5.86	74	C SOIL, GRASS, GOOD CONDITION	
6.00	74		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	7.1
Short Grass Pasture Kv=7 L=1100' s=.136 '/' V=2.58 fps		

SUBCATCHMENT 40

PEAK= 24.11 CFS @ 11.88 HRS, VOLUME= 1.04 AF

ACRES	CN		
3.60	74	C SOIL, GRASS, GOOD CONDITION	SCS TR-20 METHOD
.37	70	C SOIL, FOREST, GOOD CONDITION	TYPE II 24-HOUR
3.97	74		RAINFALL= 6.30 IN
			SPAN= 10-20 HRS, dt=.1 HRS

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	1.4
Short Grass Pasture Kv=7 L=300' s=.25 '/' V=3.5 fps		
CHANNEL FLOW	**Segment ID:**	1.0
a=18 sq-ft Pw=15.8' r=1.139'		
s=.05 '/' n=.04 V=9.06 fps L=550' Capacity=163.1 cfs		
	Total Length= 850 ft Total Tc=	2.4

SUBCATCHMENT 42

PEAK= 21.24 CFS @ 11.88 HRS, VOLUME= .91 AF

ACRES	CN		
.22	98	ROAD	SCS TR-20 METHOD
.03	98	DRIVEWAY	TYPE II 24-HOUR
.04	98	BUILDING	RAINFALL= 6.30 IN
1.74	74	C SOIL, GASS, GOOD CONDITION	SPAN= 10-20 HRS, dt=.1 HRS
1.45	70	C SOIL, FOREST, GOOD CONDITION	
3.48	74		

Method	Comment	Tc (min)
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.1
Paved Kv=20.3282 L=20' s=.02 '/' V=2.87 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	.2
Short Grass Pasture Kv=7 L=50' s=.28 '/' V=3.7 fps		
SHALLOW CONCENTRATED/UPLAND FLOW	**Segment ID:**	3.1
Forest w/Heavy Litter Kv=2.5 L=250' s=.28 '/' V=1.32 fps		
	Total Length= 320 ft Total Tc=	3.4

REACH 5 **ROADSIDE SWALE**

Qin = 4.48 CFS @ 12.35 HRS, VOLUME= .82 AF
Qout= 4.48 CFS @ 12.44 HRS, VOLUME= .82 AF, ATTEN= 0%, LAG= 5.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	3.62
.40	1.68	12.50
.60	2.89	26.78
.86	4.82	54.32
1.20	7.96	107.72
1.60	12.56	199.44
2.00	18.12	326.68

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .03
LENGTH= 800 FT
SLOPE= .11 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .22 FT
PEAK VELOCITY= 5.5 FPS
TRAVEL TIME = 2.4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 6 **ROADSIDE SWALE**

Qin = 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.30
.40	1.68	4.51
.60	2.89	9.65
.86	4.82	19.59
1.20	7.96	38.84
1.60	12.56	71.91
2.00	18.12	117.79

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .03
LENGTH= 1300 FT
SLOPE= .0143 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 0.00 FT
PEAK VELOCITY= 0.0 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 7 **STONE SWALE**

Qin = 2.63 CFS @ 13.26 HRS, VOLUME= .69 AF
Qout= 2.72 CFS @ 13.34 HRS, VOLUME= .68 AF, ATTEN= 0%, LAG= 4.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.53
.40	1.68	8.76
.60	2.89	18.76
.86	4.82	38.06
1.20	7.96	75.48
1.60	12.56	139.74
2.00	18.12	228.89

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 330 FT
SLOPE= .15 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .21 FT
PEAK VELOCITY= 3.7 FPS
TRAVEL TIME = 1.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 8 **RIP RAP SWALE**

Qin = 5.86 CFS @ 12.03 HRS, VOLUME= .51 AF
Qout= 5.85 CFS @ 12.03 HRS, VOLUME= .51 AF, ATTEN= 0%, LAG= .3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	3.58
.40	1.68	12.38
.60	2.89	26.53
.86	4.82	53.82
1.20	7.96	106.74
1.60	12.56	197.62
2.00	18.12	323.70

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 130 FT
SLOPE= .3 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .25 FT
PEAK VELOCITY= 6.0 FPS
TRAVEL TIME = .4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 9 **STONE SWALE**

Qin = 5.85 CFS @ 12.03 HRS, VOLUME= 1.19 AF
Qout= 5.33 CFS @ 12.13 HRS, VOLUME= 1.18 AF, ATTEN= 9%, LAG= 5.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.96
.40	1.68	6.78
.60	2.89	14.53
.86	4.82	29.48
1.20	7.96	58.46
1.60	12.56	108.24
2.00	18.12	177.30

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 500 FT
SLOPE= .09 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .35 FT
PEAK VELOCITY= 3.9 FPS
TRAVEL TIME = 2.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 10 **ROADSIDE SWALE**

Qin = 2.60 CFS @ 12.51 HRS, VOLUME= .57 AF
Qout= 2.50 CFS @ 12.72 HRS, VOLUME= .56 AF, ATTEN= 4%, LAG= 12.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.91
.40	1.68	10.04
.60	2.89	21.51
.86	4.82	43.64
1.20	7.96	86.55
1.60	12.56	160.23
2.00	18.12	262.46

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .03
LENGTH= 1250 FT
SLOPE= .071 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .17 FT
PEAK VELOCITY= 4.0 FPS
TRAVEL TIME = 5.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 12 **STONE SWALE**

Qin = 2.42 CFS @ 14.62 HRS, VOLUME= 1.18 AF
Qout= 2.42 CFS @ 14.73 HRS, VOLUME= 1.17 AF, ATTEN= 0%, LAG= 6.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.72	2.37
.40	3.68	7.74
.60	5.89	15.68
.86	9.12	29.77
1.20	13.96	54.80
1.60	20.56	94.40
2.00	28.12	145.81

8' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 370 FT
SLOPE= .013 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .20 FT
PEAK VELOCITY= 1.4 FPS
TRAVEL TIME = 4.4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 13 **STONE SWALE**

Qin = .28 CFS @ 20.00 HRS, VOLUME= .01 AF
Qout= .23 CFS @ 20.00 HRS, VOLUME= 0.00 AF, ATTEN= 20%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.72	2.94
.40	3.68	9.60
.60	5.89	19.44
.86	9.12	36.92
1.20	13.96	67.97
1.60	20.56	117.09
2.00	28.12	180.85

8' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 250 FT
SLOPE= .02 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .02 FT
PEAK VELOCITY= 1.7 FPS
TRAVEL TIME = 2.4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 14 **OVERLAND FLOW**

Qin = 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	2.86
.20	2.40	9.46
.30	3.90	19.44
.43	6.15	37.54
.60	9.60	70.51
.80	14.40	123.95
1.00	20.00	194.77

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .045
LENGTH= 170 FT
SLOPE= .15 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 0.00 FT
PEAK VELOCITY= 0.0 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 15 **ROADSIDE SWALE**

Qin = 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.41
.40	1.68	4.87
.60	2.89	10.43
.86	4.82	21.17
1.20	7.96	41.97
1.60	12.56	77.71
2.00	18.12	127.29

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .03
LENGTH= 600 FT
SLOPE= .0167 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 0.00 FT
PEAK VELOCITY= 0.0 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 17 **STONE SWALE**

Qin = 1.04 CFS @ 13.29 HRS, VOLUME= .28 AF
Qout= 1.04 CFS @ 13.32 HRS, VOLUME= .28 AF, ATTEN= 0%, LAG= 1.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.93
.40	1.68	10.11
.60	2.89	21.66
.86	4.82	43.95
1.20	7.96	87.15
1.60	12.56	161.35
2.00	18.12	264.30

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 170 FT
SLOPE= .2 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .07 FT
PEAK VELOCITY= 4.1 FPS
TRAVEL TIME = .7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 24 **STONE SWALE**

Qin = 66.36 CFS @ 12.02 HRS, VOLUME= 4.79 AF
Qout= 62.34 CFS @ 12.03 HRS, VOLUME= 4.79 AF, ATTEN= 6%, LAG= .7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.12	6.61
.40	2.48	22.00
.60	4.09	45.50
.86	6.54	88.69
1.20	10.36	168.47
1.60	15.76	299.66
2.00	22.12	475.61

5' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 300 FT
SLOPE= .25 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .70 FT
PEAK VELOCITY= 12.4 FPS
TRAVEL TIME = .4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 29 **CULVERT**

Qin = 33.92 CFS @ 11.90 HRS, VOLUME= 1.58 AF
Qout= 33.40 CFS @ 11.90 HRS, VOLUME= 1.58 AF, ATTEN= 2%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.26	.93
.50	.70	3.89
.75	1.24	8.70
1.75	3.67	37.20
2.00	4.21	43.43
2.25	4.65	47.36
2.35	4.79	47.80
2.43	4.87	47.36
2.50	4.91	44.44

30" PIPE
n= .012
LENGTH= 70 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.63 FT
PEAK VELOCITY= 10.0 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 30 **CULVERT**

Qin = 46.04 CFS @ 12.03 HRS, VOLUME= 2.88 AF
Qout= 45.76 CFS @ 12.03 HRS, VOLUME= 2.87 AF, ATTEN= 1%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	.37	1.26
.60	1.01	5.29
.90	1.78	11.84
2.10	5.29	50.61
2.40	6.06	59.09
2.70	6.70	64.43
2.82	6.90	65.03
2.91	7.01	64.43
3.00	7.07	60.45

36" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .007 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.93 FT
PEAK VELOCITY= 9.4 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 31 **STONE SWALE**

Qin = 37.20 CFS @ 12.14 HRS, VOLUME= 3.19 AF
Qout= 34.29 CFS @ 12.18 HRS, VOLUME= 3.19 AF, ATTEN= 8%, LAG= 2.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.12	4.58
.40	2.48	15.24
.60	4.09	31.52
.86	6.54	61.45
1.20	10.36	116.72
1.60	15.76	207.61
2.00	22.12	329.51

5' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 200 FT
SLOPE= .12 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .62 FT
PEAK VELOCITY= 7.9 FPS
TRAVEL TIME = .4 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 34 **PIPE**

Qin = 2.51 CFS @ 11.98 HRS, VOLUME= .24 AF
Qout= 2.55 CFS @ 12.00 HRS, VOLUME= .24 AF, ATTEN= 0%, LAG= 1.3 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.15	.09	.34
.30	.25	1.41
.45	.45	3.15
1.05	1.32	13.47
1.20	1.52	15.73
1.35	1.68	17.15
1.41	1.72	17.31
1.46	1.75	17.15
1.50	1.77	16.09

18" PIPE
n= .012
LENGTH= 280 FT
SLOPE= .02 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .41 FT
PEAK VELOCITY= 6.8 FPS
TRAVEL TIME = .7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 36 **OVERLAND FLOW**

Qin = 41.89 CFS @ 11.97 HRS, VOLUME= 1.96 AF
Qout= 35.35 CFS @ 12.08 HRS, VOLUME= 1.95 AF, ATTEN= 16%, LAG= 6.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	4.41
.20	2.40	14.59
.30	3.90	29.96
.43	6.15	57.87
.60	9.60	108.68
.80	14.40	191.06
1.00	20.00	300.23

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1500 FT
SLOPE= .44 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .35 FT
PEAK VELOCITY= 8.6 FPS
TRAVEL TIME = 2.9 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 37 **OVERLAND FLOW**

Qin = 1.87 CFS @ 13.20 HRS, VOLUME= .68 AF
Qout= 1.86 CFS @ 13.46 HRS, VOLUME= .67 AF, ATTEN= 1%, LAG= 15.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	4.41
.20	2.40	14.59
.30	3.90	29.96
.43	6.15	57.87
.60	9.60	108.68
.80	14.40	191.06
1.00	20.00	300.23

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1750 FT
SLOPE= .44 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .04 FT
PEAK VELOCITY= 4.0 FPS
TRAVEL TIME = 7.3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 38 **OVERLAND FLOW**

Qin = 13.42 CFS @ 12.12 HRS, VOLUME= .92 AF
Qout= 7.92 CFS @ 12.42 HRS, VOLUME= .90 AF, ATTEN= 41%, LAG= 18.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.64
.20	2.40	12.04
.30	3.90	24.74
.43	6.15	47.78
.60	9.60	89.74
.80	14.40	157.77
1.00	20.00	247.90

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 2500 FT
SLOPE= .3 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .15 FT
PEAK VELOCITY= 4.5 FPS
TRAVEL TIME = 9.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 39 **EXISTING SWALE**

Qin = 30.66 CFS @ 12.21 HRS, VOLUME= 2.61 AF
Qout= 21.97 CFS @ 12.51 HRS, VOLUME= 2.56 AF, ATTEN= 28%, LAG= 18.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.80	4.66
.40	4.00	15.58
.60	6.60	32.36
.86	10.58	63.32
1.20	16.80	120.78
1.60	25.60	215.63
2.00	36.00	343.22

8' x 2' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 2700 FT
SLOPE= .048 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .48 FT
PEAK VELOCITY= 4.4 FPS
TRAVEL TIME = 10.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 40 **CULVERT**

Qin = 24.11 CFS @ 11.88 HRS, VOLUME= 1.04 AF
Qout= 23.89 CFS @ 11.88 HRS, VOLUME= 1.04 AF, ATTEN= 1%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.26	.66
.50	.70	2.75
.75	1.24	6.15
1.75	3.67	26.31
2.00	4.21	30.71
2.25	4.65	33.49
2.35	4.79	33.80
2.43	4.87	33.49
2.50	4.91	31.42

30" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .005 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.61 FT
PEAK VELOCITY= 7.1 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 41 **STONE SWALE**

Qin = 23.89 CFS @ 11.88 HRS, VOLUME= 1.04 AF
Qout= 22.63 CFS @ 11.89 HRS, VOLUME= 1.04 AF, ATTEN= 5%, LAG= .7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	3.14
.40	1.68	10.84
.60	2.89	23.23
.86	4.82	47.13
1.20	7.96	93.46
1.60	12.56	173.03
2.00	18.12	283.43

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 300 FT
SLOPE= .23 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .60 FT
PEAK VELOCITY= 8.0 FPS
TRAVEL TIME = .6 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 42 **STONE SWALE**

Qin = 7.52 CFS @ 12.14 HRS, VOLUME= .82 AF
Qout= 6.86 CFS @ 12.19 HRS, VOLUME= .81 AF, ATTEN= 9%, LAG= 3.5 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	3.27
.40	1.68	11.31
.60	2.89	24.22
.86	4.82	49.13
1.20	7.96	97.44
1.60	12.56	180.40
2.00	18.12	295.50

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 300 FT
SLOPE= .25 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .29 FT
PEAK VELOCITY= 6.0 FPS
TRAVEL TIME = .8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 43 **STONE SWALE**

Qin = 1.08 CFS @ 13.73 HRS, VOLUME= .74 AF
Qout= 1.08 CFS @ 13.85 HRS, VOLUME= .73 AF, ATTEN= 0%, LAG= 6.8 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	1.77
.40	1.68	6.11
.60	2.89	13.09
.86	4.82	26.55
1.20	7.96	52.65
1.60	12.56	97.48
2.00	18.12	159.68

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 450 FT
SLOPE= .073 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .12 FT
PEAK VELOCITY= 2.5 FPS
TRAVEL TIME = 3.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 44 **EXISTING SWALE**

Qin = 35.35 CFS @ 12.08 HRS, VOLUME= 1.95 AF
Qout= 30.66 CFS @ 12.21 HRS, VOLUME= 1.94 AF, ATTEN= 13%, LAG= 8.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	1.80	4.66
.40	4.00	15.58
.60	6.60	32.36
.86	10.58	63.32
1.20	16.80	120.78
1.60	25.60	215.63
2.00	36.00	343.22

8' x 2' CHANNEL
SIDE SLOPE= .2 '/'
n= .04
LENGTH= 1200 FT
SLOPE= .048 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .59 FT
PEAK VELOCITY= 4.9 FPS
TRAVEL TIME = 4.1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 60 **OVERLAND FLOW**

Qin = 44.25 CFS @ 12.03 HRS, VOLUME= 2.62 AF
Qout= 40.60 CFS @ 12.05 HRS, VOLUME= 2.61 AF, ATTEN= 8%, LAG= 1.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	4.79
.20	2.40	15.86
.30	3.90	32.57
.43	6.15	62.91
.60	9.60	118.15
.80	14.40	207.71
1.00	20.00	326.38

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 250 FT
SLOPE= .52 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .33 FT
PEAK VELOCITY= 9.0 FPS
TRAVEL TIME = .5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 83 **CULVERT**

Qin = 100.9 CFS @ 12.11 HRS, VOLUME= 8.49 AF
Qout= 101.2 CFS @ 12.11 HRS, VOLUME= 8.49 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.35	1.00	4.55
.70	2.74	19.09
1.05	4.86	42.69
2.45	14.39	182.51
2.80	16.50	213.08
3.15	18.24	232.33
3.29	18.77	234.49
3.40	19.07	232.32
3.50	19.24	217.99

42" PIPE X 2
n= .012
LENGTH= 50 FT
SLOPE= .01 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.64 FT
PEAK VELOCITY= 11.4 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 84 **ROADSIDE SWALE**

Qin = 100.2 CFS @ 12.10 HRS, VOLUME= 8.49 AF
Qout= 100.9 CFS @ 12.11 HRS, VOLUME= 8.49 AF, ATTEN= 0%, LAG= .2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	3.43
.50	2.26	12.11
.75	3.95	26.45
1.08	6.73	54.78
1.50	11.32	110.88
2.00	18.12	208.95
2.50	26.44	346.82

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 80 FT
SLOPE= .08 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.43 FT
PEAK VELOCITY= 9.6 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 85 **ROADSIDE SWALE**

Qin = 129.1 CFS @ 12.13 HRS, VOLUME= 10.51 AF
Qout= 118.3 CFS @ 12.18 HRS, VOLUME= 10.49 AF, ATTEN= 8%, LAG= 3.4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.25	.94	3.40
.50	2.26	12.03
.75	3.95	26.29
1.08	6.73	54.44
1.50	11.32	110.19
2.00	18.12	207.65
2.50	26.44	344.67

3' x 2.5' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 800 FT
SLOPE= .1 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.56 FT
PEAK VELOCITY= 10.0 FPS
TRAVEL TIME = 1.3 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 87 **ROADSIDE SWALE**

Qin = 131.1 CFS @ 12.20 HRS, VOLUME= 12.38 AF
Qout= 121.7 CFS @ 12.32 HRS, VOLUME= 12.30 AF, ATTEN= 7%, LAG= 7.4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	1.17	4.32
.60	2.89	15.60
.90	5.15	34.68
1.29	8.91	73.11
1.80	15.22	150.50
2.40	24.65	287.65
3.00	36.27	482.37

3' x 3' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 2100 FT
SLOPE= .084 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.61 FT
PEAK VELOCITY= 9.5 FPS
TRAVEL TIME = 3.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 88 **ROADSIDE SWALE**

Qin = 138.2 CFS @ 12.30 HRS, VOLUME= 17.40 AF
Qout= 131.6 CFS @ 12.39 HRS, VOLUME= 17.32 AF, ATTEN= 5%, LAG= 5.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	1.17	3.43
.60	2.89	12.39
.90	5.15	27.55
1.29	8.91	58.07
1.80	15.22	119.55
2.40	24.65	228.49
3.00	36.27	383.16

3' x 3' CHANNEL
SIDE SLOPE= .33 '/'
n= .045
LENGTH= 1400 FT
SLOPE= .053 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.87 FT
PEAK VELOCITY= 8.1 FPS
TRAVEL TIME = 2.9 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 89 **CULVERT**

Qin = 131.6 CFS @ 12.39 HRS, VOLUME= 17.32 AF
Qout= 131.6 CFS @ 12.39 HRS, VOLUME= 17.32 AF, ATTEN= 0%, LAG= 0.0 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.35	.50	5.09
.70	1.37	21.34
1.05	2.43	47.73
2.45	7.19	204.05
2.80	8.25	238.23
3.15	9.12	259.75
3.29	9.39	262.16
3.40	9.54	259.74
3.50	9.62	243.72

42" PIPE
n= .012
LENGTH= 50 FT
SLOPE= .05 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.80 FT
PEAK VELOCITY= 26.4 FPS
TRAVEL TIME = 0.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 90 **STONE SWALE**

Qin = 131.6 CFS @ 12.39 HRS, VOLUME= 17.32 AF
Qout= 127.6 CFS @ 12.46 HRS, VOLUME= 17.25 AF, ATTEN= 3%, LAG= 4.4 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	1.77	6.72
.60	4.09	23.02
.90	6.95	48.91
1.29	11.49	98.32
1.80	18.82	193.15
2.40	29.45	354.59
3.00	42.27	577.10

5' x 3' CHANNEL
SIDE SLOPE= .33 '/'
n= .05
LENGTH= 1500 FT
SLOPE= .1 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.46 FT
PEAK VELOCITY= 9.3 FPS
TRAVEL TIME = 2.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 91 **STONE SWALE**

Qin = 120.2 CFS @ 11.90 HRS, VOLUME= 5.77 AF
Qout= 100.5 CFS @ 11.96 HRS, VOLUME= 5.75 AF, ATTEN= 16%, LAG= 3.2 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.20	.72	2.44
.40	1.68	8.43
.60	2.89	18.06
.86	4.82	36.65
1.20	7.96	72.67
1.60	12.56	134.54
2.00	18.12	220.39

3' x 2' CHANNEL
SIDE SLOPE= .33 '/'
n= .04
LENGTH= 1050 FT
SLOPE= .089 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 1.42 FT
PEAK VELOCITY= 10.2 FPS
TRAVEL TIME = 1.7 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 93 **OVERLAND FLOW**

Qin = 103.5 CFS @ 12.02 HRS, VOLUME= 7.63 AF
Qout= 93.46 CFS @ 12.11 HRS, VOLUME= 7.59 AF, ATTEN= 10%, LAG= 4.9 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.10	1.10	3.93
.20	2.40	13.01
.30	3.90	26.72
.43	6.15	51.61
.60	9.60	96.93
.80	14.40	170.41
1.00	20.00	267.77

10' x 1' CHANNEL
SIDE SLOPE= .1 '/'
n= .05
LENGTH= 1300 FT
SLOPE= .35 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= .59 FT
PEAK VELOCITY= 10.0 FPS
TRAVEL TIME = 2.2 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 94 **CULVERT**

Qin = 127.6 CFS @ 12.46 HRS, VOLUME= 17.25 AF
Qout= 127.5 CFS @ 12.46 HRS, VOLUME= 17.25 AF, ATTEN= 0%, LAG= .1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.40	.65	5.14
.80	1.79	21.55
1.20	3.17	48.18
2.80	9.40	206.00
3.20	10.78	240.50
3.60	11.91	262.24
3.76	12.26	264.67
3.88	12.46	262.22
4.00	12.57	246.05

48" PIPE
n= .012
LENGTH= 100 FT
SLOPE= .025 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.00 FT
PEAK VELOCITY= 20.2 FPS
TRAVEL TIME = .1 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 97 **EXISTING SWALE**

Qin = 238.2 CFS @ 12.24 HRS, VOLUME= 29.85 AF
Qout= 234.8 CFS @ 12.29 HRS, VOLUME= 29.78 AF, ATTEN= 1%, LAG= 3.1 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	6.63
.60	7.80	22.45
.90	13.05	47.15
1.29	21.22	93.50
1.80	34.20	180.97
2.40	52.80	327.62
3.00	75.00	527.37

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .045
LENGTH= 500 FT
SLOPE= .02 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.02 FT
PEAK VELOCITY= 5.7 FPS
TRAVEL TIME = 1.5 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 98 **EXISTING SWALE**

Qin = 353.3 CFS @ 12.42 HRS, VOLUME= 51.83 AF
Qout= 340.1 CFS @ 12.70 HRS, VOLUME= 51.14 AF, ATTEN= 4%, LAG= 16.7 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	7.56
.60	7.80	25.60
.90	13.05	53.76
1.29	21.22	106.61
1.80	34.20	206.33
2.40	52.80	373.55
3.00	75.00	601.29

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .045
LENGTH= 3650 FT
SLOPE= .026 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.28 FT
PEAK VELOCITY= 6.9 FPS
TRAVEL TIME = 8.8 MIN
SPAN= 10-20 HRS, dt=.1 HRS

REACH 99 **EXISTING SWALE**

Qin = 364.5 CFS @ 12.68 HRS, VOLUME= 58.73 AF
Qout= 354.1 CFS @ 12.92 HRS, VOLUME= 57.94 AF, ATTEN= 3%, LAG= 14.6 MIN

DEPTH (FT)	END AREA (SQ-FT)	DISCH (CFS)
0.00	0.00	0.00
.30	3.45	7.99
.60	7.80	27.04
.90	13.05	56.77
1.29	21.22	112.59
1.80	34.20	217.91
2.40	52.80	394.51
3.00	75.00	635.04

10' x 3' CHANNEL
SIDE SLOPE= .2 '/'
n= .045
LENGTH= 3500 FT
SLOPE= .029 FT/FT

STOR-IND+TRANS METHOD
PEAK DEPTH= 2.27 FT
PEAK VELOCITY= 7.3 FPS
TRAVEL TIME = 8.0 MIN
SPAN= 10-20 HRS, dt=.1 HRS

POND 1 **IRRIGATION POND**

Qin = 81.35 CFS @ 11.89 HRS, VOLUME= 3.91 AF
Qout= 2.42 CFS @ 14.62 HRS, VOLUME= 1.18 AF, ATTEN= 97%, LAG= 163.7 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2312.9	0	0	0
2313.0	45275	2264	2264
2314.0	49000	47138	49401
2315.0	62750	55875	105276
2316.0	76500	69625	174901

STOR-IND METHOD
PEAK STORAGE = 125363 CF
PEAK ELEVATION= 2315.3 FT
FLOOD ELEVATION= 2317.0 FT
START ELEVATION= 2312.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 276.2 MIN (1.18 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2315.0'	**8' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 3 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 39.95 CFS @ 11.91 HRS, VOLUME= 1.88 AF
Qout= 4.48 CFS @ 12.35 HRS, VOLUME= .82 AF, ATTEN= 89%, LAG= 26.8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2279.0	0	0	0
2280.0	1100	550	550
2285.0	5000	15250	15800
2290.0	10000	37500	53300

STOR-IND METHOD
PEAK STORAGE = 48576 CF
PEAK ELEVATION= 2289.4 FT
FLOOD ELEVATION= 2290.5 FT
START ELEVATION= 2279.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 182.9 MIN (.82 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2289.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 4 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 10.02 CFS @ 11.88 HRS, VOLUME= 1.25 AF
Qout= 2.63 CFS @ 13.26 HRS, VOLUME= .69 AF, ATTEN= 74%, LAG= 82.5 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2179.0	0	0	0
2180.0	1000	500	500
2185.0	2500	8750	9250
2190.0	5000	18750	28000

STOR-IND METHOD
PEAK STORAGE = 24815 CF
PEAK ELEVATION= 2189.2 FT
FLOOD ELEVATION= 2190.5 FT
START ELEVATION= 2179.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 200.7 MIN (.69 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2189.0'	**20' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 5 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 13.27 CFS @ 11.89 HRS, VOLUME= .57 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN=100%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2294.0	0	0	0
2295.0	3500	1750	1750
2300.0	6400	24750	26500

STOR-IND METHOD
PEAK STORAGE = 24925 CF
PEAK ELEVATION= 2299.7 FT
FLOOD ELEVATION= 2301.0 FT
START ELEVATION= 2294.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2299.8'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 6 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 17.62 CFS @ 11.88 HRS, VOLUME= .76 AF
Qout= 5.86 CFS @ 12.03 HRS, VOLUME= .51 AF, ATTEN= 67%, LAG= 9.1 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2199.0	0	0	0
2200.0	1200	600	600
2205.0	3800	12500	13100

STOR-IND METHOD
PEAK STORAGE = 15909 CF
PEAK ELEVATION= 2206.1 FT
FLOOD ELEVATION= 2208.0 FT
START ELEVATION= 2199.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 123.2 MIN (.51 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2204.0'	**12" CULVERT**
			n=.012 L=50' S=.01'/' Ke=.5 Cc=.9 Cd=.6

POND 7 **STORM POND, HALCOTT/VLY, NO PERC ASSUMED**

Qin = 20.69 CFS @ 11.89 HRS, VOLUME= 2.05 AF
Qout= 3.64 CFS @ 13.73 HRS, VOLUME= 1.32 AF, ATTEN= 82%, LAG= 110.8 MIN
Qpri= 1.08 CFS @ 13.73 HRS, VOLUME= .74 AF
Qsec= 2.56 CFS @ 13.73 HRS, VOLUME= .58 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2109.0	0	0	0
2110.0	4500	2250	2250
2115.0	10000	36250	38500

STOR-IND METHOD
PEAK STORAGE = 34228 CF
PEAK ELEVATION= 2114.4 FT
FLOOD ELEVATION= 2116.0 FT
START ELEVATION= 2109.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 172.8 MIN (1.31 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2109.0'	**EXFILTRATION**
			V= .0069 FPM over SURFACE AREA
2	S	2114.0'	**5' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 8 **STORM POND, LEWBEACH, 2.2"/HR TO 2.5'DEPTH**

Qin = 37.33 CFS @ 11.88 HRS, VOLUME= 1.61 AF
Qout= 2.76 CFS @ 12.51 HRS, VOLUME= .67 AF, ATTEN= 93%, LAG= 37.9 MIN
Qpri= .16 CFS @ 12.51 HRS, VOLUME= .10 AF
Qsec= 2.60 CFS @ 12.51 HRS, VOLUME= .57 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2179.0	0	0	0
2180.0	5000	2500	2500
2185.0	11500	41250	43750

STOR-IND METHOD
PEAK STORAGE = 42956 CF
PEAK ELEVATION= 2184.9 FT
FLOOD ELEVATION= 2186.0 FT
START ELEVATION= 2179.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 198.5 MIN (.67 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2182.5'	**EXFILTRATION**
			V= .003 FPM over (SURFACE AREA - 8250 SF)
2	S	2184.6'	**8' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 9 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 50.19 CFS @ 11.94 HRS, VOLUME= 3.32 AF
Qout= 44.25 CFS @ 12.03 HRS, VOLUME= 2.62 AF, ATTEN= 12%, LAG= 5.5 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2064.0	0	0	0
2065.0	4750	2375	2375
2070.0	8750	33750	36125

STOR-IND METHOD
PEAK STORAGE = 40284 CF
PEAK ELEVATION= 2070.6 FT
FLOOD ELEVATION= 2071.5 FT
START ELEVATION= 2064.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 103.2 MIN (2.62 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2069.0'	**12' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 10 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 64.55 CFS @ 11.92 HRS, VOLUME= 3.81 AF
Qout= 57.16 CFS @ 11.98 HRS, VOLUME= 3.52 AF, ATTEN= 11%, LAG= 3.3 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2099.0	0	0	0
2100.0	3000	1500	1500
2105.0	7000	25000	26500

STOR-IND METHOD
PEAK STORAGE = 24897 CF
PEAK ELEVATION= 2104.7 FT
FLOOD ELEVATION= 2106.0 FT
START ELEVATION= 2099.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 41.2 MIN (3.48 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2102.0'	**30" CULVERT X 2**
			n=.012 L=100' S=.05'/' Ke=.5 Cc=.9 Cd=.6

POND 11 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 14.96 CFS @ 11.87 HRS, VOLUME= .66 AF
Qout= .93 CFS @ 12.72 HRS, VOLUME= .25 AF, ATTEN= 94%, LAG= 51.5 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1999.0	0	0	0
2000.0	2500	1250	1250
2005.0	4000	16250	17500
2006.0	5000	4500	22000

STOR-IND METHOD
PEAK STORAGE = 18440 CF
PEAK ELEVATION= 2005.2 FT
FLOOD ELEVATION= 2007.0 FT
START ELEVATION= 1999.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 212 MIN (.25 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2005.0'	**5' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 12 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 45.76 CFS @ 12.03 HRS, VOLUME= 2.87 AF
Qout= 30.71 CFS @ 12.19 HRS, VOLUME= 2.02 AF, ATTEN= 33%, LAG= 9.6 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2044.0	0	0	0
2045.0	5500	2750	2750
2050.0	11160	41650	44400

STOR-IND METHOD
PEAK STORAGE = 48049 CF
PEAK ELEVATION= 2050.4 FT
FLOOD ELEVATION= 2051.5 FT
START ELEVATION= 2044.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 105.8 MIN (2 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2049.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 13 **STORM POND, LEWBEACH, 2.2"/HR TO 2.5'DEPTH**

Qin = 26.51 CFS @ 11.89 HRS, VOLUME= 1.16 AF
Qout= 1.21 CFS @ 13.29 HRS, VOLUME= .38 AF, ATTEN= 95%, LAG= 84.1 MIN
Qpri= .17 CFS @ 13.29 HRS, VOLUME= .11 AF
Qsec= 1.04 CFS @ 13.29 HRS, VOLUME= .28 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2194.0	0	0	0
2195.0	3200	1600	1600
2200.0	11000	35500	37100

STOR-IND METHOD
PEAK STORAGE = 34533 CF
PEAK ELEVATION= 2199.6 FT
FLOOD ELEVATION= 2201.0 FT
START ELEVATION= 2194.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 239.1 MIN (.38 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2197.5'	**EXFILTRATION**
			V= .003 FPM over (SURFACE AREA - 7100 SF)
2	S	2199.5'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 14 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 9.77 CFS @ 11.89 HRS, VOLUME= .70 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN=100%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2154.0	0	0	0
2155.0	6000	3000	3000
2160.0	12000	45000	48000
2161.0	14000	13000	61000

STOR-IND METHOD
PEAK STORAGE = 30368 CF
PEAK ELEVATION= 2158.0 FT
FLOOD ELEVATION= 2161.0 FT
START ELEVATION= 2154.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2160.9'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 21 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 129.4 CFS @ 12.18 HRS, VOLUME= 12.65 AF
Qout= 131.1 CFS @ 12.20 HRS, VOLUME= 12.38 AF, ATTEN= 0%, LAG= .8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1929.0	0	0	0
1930.0	2000	1000	1000
1935.0	5000	17500	18500

STOR-IND METHOD
PEAK STORAGE = 18220 CF
PEAK ELEVATION= 1934.9 FT
FLOOD ELEVATION= 1936.5 FT
START ELEVATION= 1929.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 11.6 MIN (12.38 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1933.0'	**25' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 22 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 121.2 CFS @ 12.00 HRS, VOLUME= 9.32 AF
Qout= 100.2 CFS @ 12.10 HRS, VOLUME= 8.49 AF, ATTEN= 17%, LAG= 5.9 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2069.0	0	0	0
2070.0	3750	1875	1875
2075.0	12500	40625	42500
2077.5	17000	36875	79375

STOR-IND METHOD
PEAK STORAGE = 66382 CF
PEAK ELEVATION= 2076.6 FT
FLOOD ELEVATION= 2078.5 FT
START ELEVATION= 2069.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 43.8 MIN (8.49 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2074.0'	**12' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 25 **STORM POND, VLY, 7"/HR TO 2.5' DEPTH**

Qin = 107.7 CFS @ 11.97 HRS, VOLUME= 8.68 AF
Qout= 104.0 CFS @ 12.02 HRS, VOLUME= 7.74 AF, ATTEN= 3%, LAG= 3.0 MIN
Qpri= .45 CFS @ 12.02 HRS, VOLUME= .11 AF
Qsec= 103.5 CFS @ 12.02 HRS, VOLUME= 7.63 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1909.0	0	0	0
1910.0	6250	3125	3125
1915.0	11750	45000	48125
1916.0	13000	12375	60500

STOR-IND METHOD
PEAK STORAGE = 59036 CF
PEAK ELEVATION= 1915.9 FT
FLOOD ELEVATION= 1917.0 FT
START ELEVATION= 1909.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 54.4 MIN (7.74 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1913.5'	**EXFILTRATION**
			V= .0097 FPM over (SURFACE AREA - 10100 SF)
2	S	1914.0'	**20' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 26 **STORM POND, LEWBEACH, 2.5"/HR TO 2.5'DEPTH**

Qin = 79.32 CFS @ 11.91 HRS, VOLUME= 6.80 AF
Qout= 68.06 CFS @ 12.02 HRS, VOLUME= 5.86 AF, ATTEN= 14%, LAG= 6.9 MIN
Qpri= 1.70 CFS @ 12.02 HRS, VOLUME= 1.07 AF
Qsec= 66.36 CFS @ 12.02 HRS, VOLUME= 4.79 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2139.0	0	0	0
2140.0	5000	2500	2500
2145.0	14000	47500	50000

STOR-IND METHOD
PEAK STORAGE = 53757 CF
PEAK ELEVATION= 2145.4 FT
FLOOD ELEVATION= 2146.5 FT
START ELEVATION= 2139.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 64.1 MIN (5.8 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2139.0'	**EXFILTRATION**
			V= .0069 FPM over SURFACE AREA
2	S	2144.0'	**22' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 27 **STORM POND ELKA, 7"/HR TO 5'DEPTH**

Qin = 132.9 CFS @ 12.46 HRS, VOLUME= 19.80 AF
Qout= 132.6 CFS @ 12.47 HRS, VOLUME= 19.42 AF, ATTEN= 0%, LAG= 1.0 MIN
Qpri= 1.02 CFS @ 12.47 HRS, VOLUME= .66 AF
Qsec= 131.6 CFS @ 12.47 HRS, VOLUME= 18.77 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1504.0	0	0	0
1505.0	3000	1500	1500
1510.0	6000	22500	24000

STOR-IND METHOD
PEAK STORAGE = 26152 CF
PEAK ELEVATION= 1510.5 FT
FLOOD ELEVATION= 1512.5 FT
START ELEVATION= 1504.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 11 MIN (19.42 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1504.0'	**EXFILTRATION** V= .0097 FPM over SURFACE AREA
2	S	1507.8'	**42" CULVERT X 3** n=.012 L=100' S=.03'/' Ke=.5 Cc=.9 Cd=.6

Primary Discharge
└─1=Exfiltration

Secondary Discharge
└─2=Culvert

POND 28 **STORM POND, VLY, 7"/HR TO 2.5'DEPTH**

Qin = 42.44 CFS @ 12.04 HRS, VOLUME= 3.25 AF
Qout= 21.68 CFS @ 12.21 HRS, VOLUME= 2.95 AF, ATTEN= 49%, LAG= 10.3 MIN
Qpri= .65 CFS @ 12.21 HRS, VOLUME= .02 AF
Qsec= 21.03 CFS @ 12.21 HRS, VOLUME= 2.93 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1929.0	0	0	0
1930.0	1000	500	500
1935.0	15000	40000	40500

STOR-IND METHOD
PEAK STORAGE = 31949 CF
PEAK ELEVATION= 1933.9 FT
FLOOD ELEVATION= 1936.5 FT
START ELEVATION= 1929.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 54.1 MIN (2.95 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1932.5'	**EXFILTRATION** V= .0097 FPM over (SURFACE AREA - 8000 SF)
2	S	1931.0'	**24" CULVERT** n=.012 L=60' S=.015'/' Ke=.5 Cc=.9 Cd=.6

Primary Discharge
└─1=Exfiltration

Secondary Discharge
└─2=Culvert

POND 30

Not described

Qin = 340.9 CFS @ 13.04 HRS, VOLUME= 69.48 AF
Qout= 340.9 CFS @ 13.04 HRS, VOLUME= 69.48 AF, ATTEN= 0%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (AC)	INC.STOR (AF)	CUM.STOR (AF)

- METHOD
PEAK STORAGE = 0.00 AF
PEAK ELEVATION= 0.0 FT
FLOOD ELEVATION= 0.0 FT
START ELEVATION= 0.0 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES

POND 31 **STORM POND, LEWBEACH, 2.2"/HR TO 2.5' DEPT**

Qin = 106.0 CFS @ 11.94 HRS, VOLUME= 5.62 AF
Qout= 37.64 CFS @ 12.14 HRS, VOLUME= 3.38 AF, ATTEN= 64%, LAG= 12.0 MIN
Qpri= .44 CFS @ 12.14 HRS, VOLUME= .19 AF
Qsec= 37.20 CFS @ 12.14 HRS, VOLUME= 3.19 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2159.0	0	0	0
2160.0	13900	6950	6950
2165.0	30000	109750	116700

STOR-IND METHOD
PEAK STORAGE = 120033 CF
PEAK ELEVATION= 2165.2 FT
FLOOD ELEVATION= 2166.5 FT
START ELEVATION= 2159.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 139 MIN (3.38 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2162.5'	**EXFILTRATION**
			V= .003 FPM over (SURFACE AREA - 21950 SF)
2	S	2164.0'	**15' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 36 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 56.18 CFS @ 11.89 HRS, VOLUME= 2.48 AF
Qout= 41.89 CFS @ 11.97 HRS, VOLUME= 1.96 AF, ATTEN= 25%, LAG= 4.5 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2272.0	0	0	0
2273.0	10500	5250	5250
2275.0	12000	22500	27750

STOR-IND METHOD
PEAK STORAGE = 33196 CF
PEAK ELEVATION= 2275.5 FT
FLOOD ELEVATION= 2276.0 FT
START ELEVATION= 2272.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 84.6 MIN (1.94 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2274.5'	**25' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 37 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 40.34 CFS @ 11.89 HRS, VOLUME= 1.74 AF
Qout= 1.87 CFS @ 13.20 HRS, VOLUME= .68 AF, ATTEN= 95%, LAG= 78.6 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2297.0	0	0	0
2298.0	28000	14000	14000
2300.0	31000	59000	73000

STOR-IND METHOD
PEAK STORAGE = 49678 CF
PEAK ELEVATION= 2299.2 FT
FLOOD ELEVATION= 2301.0 FT
START ELEVATION= 2297.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 222.5 MIN (.68 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2299.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 38 **STORM POND, VLY, NO PERC ASSUMED**

Qin = 31.47 CFS @ 11.92 HRS, VOLUME= 1.57 AF
Qout= 13.42 CFS @ 12.12 HRS, VOLUME= .92 AF, ATTEN= 57%, LAG= 11.8 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2164.0	0	0	0
2165.0	3000	1500	1500
2170.0	10200	33000	34500

STOR-IND METHOD
PEAK STORAGE = 33054 CF
PEAK ELEVATION= 2169.8 FT
FLOOD ELEVATION= 2171.0 FT
START ELEVATION= 2164.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 140.3 MIN (.92 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2169.0'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 40 **STORM POND, LEWBEACH, 2.2"/HR TO DEPTH 2.5**

Qin = 43.86 CFS @ 11.89 HRS, VOLUME= 1.95 AF
Qout= 7.86 CFS @ 12.14 HRS, VOLUME= 1.01 AF, ATTEN= 82%, LAG= 15.0 MIN
Qpri= .34 CFS @ 12.14 HRS, VOLUME= .19 AF
Qsec= 7.52 CFS @ 12.14 HRS, VOLUME= .82 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2014.0	0	0	0
2015.0	2000	1000	1000
2020.0	16000	45000	46000

STOR-IND METHOD
PEAK STORAGE = 45225 CF
PEAK ELEVATION= 2019.9 FT
FLOOD ELEVATION= 2021.0 FT
START ELEVATION= 2014.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 159.5 MIN (1 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2017.5'	**EXFILTRATION**
			V= .003 FPM over (SURFACE AREA - 9000 SF)
2	S	2019.4'	**10' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 100

Qin = 448.3 CFS @ 12.32 HRS, VOLUME= 90.33 AF
Qout= 447.3 CFS @ 12.32 HRS, VOLUME= 89.53 AF, ATTEN= 0%, LAG= .3 MIN
Qpri= .82 CFS @ 12.32 HRS, VOLUME= .63 AF
Qsec= 446.5 CFS @ 12.32 HRS, VOLUME= 88.90 AF

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
1304.0	0	0	0
1305.0	2000	1000	1000
1310.0	4000	15000	16000
1315.0	5000	22500	38500

STOR-IND METHOD
PEAK STORAGE = 39631 CF
PEAK ELEVATION= 1315.3 FT
FLOOD ELEVATION= 1316.0 FT
START ELEVATION= 1304.0 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 4.6 MIN (88.64 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	1304.0'	**EXFILTRATION**
			V= .0097 FPM over SURFACE AREA
2	S	1314.0'	**175' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

Primary Discharge
└──1=Exfiltration

Secondary Discharge
└──2=Broad-Crested Rectangular Weir

POND 101 **IRRIGATION POND**

Qin = 2.42 CFS @ 14.73 HRS, VOLUME= 1.17 AF
Qout= .28 CFS @ 20.00 HRS, VOLUME= .01 AF, ATTEN= 88%, LAG= 316.1 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2307.9	0	0	0
2308.0	21250	1062	1062
2309.0	23750	22500	23562
2310.0	32250	28000	51562

STOR-IND METHOD
PEAK STORAGE = 50388 CF
PEAK ELEVATION= 2310.0 FT
FLOOD ELEVATION= 2311.0 FT
START ELEVATION= 2307.9 FT
SPAN= 10-20 HRS, dt=.1 HRS
Tdet= 438.8 MIN (.01 AF)

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2309.9'	**8' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

POND 102 **IRRIGATION POND**

Qin = .23 CFS @ 20.00 HRS, VOLUME= 0.00 AF
Qout= 0.00 CFS @ 0.00 HRS, VOLUME= 0.00 AF, ATTEN=100%, LAG= 0.0 MIN

ELEVATION (FT)	AREA (SF)	INC.STOR (CF)	CUM.STOR (CF)
2302.9	0	0	0
2303.0	36000	1800	1800
2304.0	39000	37500	39300
2305.0	48750	43875	83175

STOR-IND METHOD
PEAK STORAGE = 128 CF
PEAK ELEVATION= 2302.9 FT
FLOOD ELEVATION= 2306.0 FT
START ELEVATION= 2302.9 FT
SPAN= 10-20 HRS, dt=.1 HRS

#	ROUTE	INVERT	OUTLET DEVICES
1	P	2304.9'	**5' BROAD-CRESTED RECTANGULAR WEIR**
			Q=C L H^1.5 C=1.94, 1.89, 1.97, 0, 0, 0, 0, 0

100 YEAR STORM EVENT

RUNOFF BY SCS TR-20 METHOD: TYPE II 24-HOUR RAINFALL= 8.00 IN, SCS U.H.

RUNOFF SPAN = 10-20 HRS, dt= .10 HRS, 101 POINTS

SUBCAT NUMBER	AREA (ACRE)	Tc (MIN)	--GROUND COVERS (%CN)--	WGT'D CN	C	PEAK (CFS)	Tpeak (HRS)	VOL (AF)
1	5.73	3.9	64%98 36%74	89	-	61.41	11.88	2.74
2	2.13	3.8	13%98 27%74 60%70	75	-	18.63	11.89	.81
3	6.47	6.0	6%98 6%98 8%98 56%74 25%70	78	-	55.35	11.90	2.61
4	1.52	3.2	13%98 1%98 3%98 70%74 14%70	77	-	13.88	11.88	.60
5	140.30	31.1	0%98 0%98 4%74 95%70	70	-	525.9	12.21	47.43
6	2.62	2.7	14%98 3%98 5%98 43%74 35%70	78	-	24.25	11.88	1.06
7	3.21	2.9	3%98 2%98 3%98 76%74 16%70	75	-	28.22	11.88	1.22
8	5.97	2.6	9%98 0%98 1%98 46%74 44%70	75	-	52.29	11.88	2.27
9	9.64	8.1	3%98 2%98 2%98 75%74 18%70	75	-	70.13	11.93	3.66
10	12.09	7.3	5%98 1%98 62%74 30%70 2%98	75	-	91.36	11.92	4.59
11	2.46	1.7	9%98 50%74 41%70	75	-	20.94	11.86	.93
12	10.42	15.8	3%98 64%74 25%70 4%98 3%98	76	-	64.89	12.02	4.04
13	4.55	4.3	67%74 32%70 1%98	73	-	37.77	11.89	1.66
14	1.61	3.8	0%0100%74	74	-	13.81	11.89	.60
21	5.16	5.2	7%98 1%98 1%98 26%74 65%70	74	-	42.33	11.90	1.92
22	46.48	29.1	0%0 3%98 7%74 90%70	71	-	185.9	12.19	16.11
23	10.33	7.6	0%98 5%98 12%74 82%70	72	-	71.96	11.93	3.67
24	19.50	10.8	7%98 2%98 1%98 28%74 62%70	74	-	134.1	11.98	7.25
25	21.08	5.5	2%98 0%98 0%98 86%74 12%70	74	-	170.6	11.90	7.84

26	14.23	5.4	2%98	71%74	27%70		73	-	113.3	11.90	5.18
27	3.88	2.1	2%98	3%70	95%74		74	-	32.92	11.87	1.44
28	2.64	2.3	31%74	69%70			71	-	21.18	11.87	.92
29	5.19	5.8	7%98	14%98	4%98	66%74 9%70	80	-	46.42	11.90	2.17
30	293.59	95.5	0%98	4%74	5%71	91%70	70	-	491.5	13.04	97.37
31	20.89	8.4	1%98	3%98	1%98	1%98 80%74 15%70	75	-	150.0	11.94	7.94
32	93.51	61.6	0%98	1%98	2%98	9%74 87%70	71	-	223.5	12.60	32.18
34	6.50	5.0	100%39				39	-	9.53	11.93	.54
36	9.48	4.6	100%74				74	-	79.59	11.89	3.53
37	6.65	3.8	100%74				74	-	57.03	11.89	2.47
38	6.00	7.1	1%98	0%98	2%70	98%74	74	-	44.83	11.92	2.23
40	3.97	2.4	91%74	9%70			74	-	33.97	11.87	1.48
42	3.48	3.4	6%98	1%98	1%98	50%74 42%70	74	-	30.00	11.88	1.29

REACH ROUTING BY STOR-IND+TRANS METHOD

REACH NO.	DIAM (IN)	BOTTOM WIDTH (FT)	DEPTH (FT)	SIDE SLOPES (FT/FT)		n	LENGTH (FT)	SLOPE (FT/FT)	PEAK VEL. (FPS)	TRAVEL TIME (MIN)	PEAK Qout (CFS)
5	-	3.0	2.0	.33	.33	.030	800	.1100	9.2	1.4	23.29
6	-	3.0	2.0	.33	.33	.030	1300	.0143	1.8	12.0	.64
7	-	3.0	2.0	.33	.33	.050	330	.1500	6.5	.9	18.38
8	-	3.0	2.0	.33	.33	.050	130	.3000	7.1	.3	10.48
9	-	3.0	2.0	.33	.33	.050	500	.0900	5.9	1.4	23.62
10	-	3.0	2.0	.33	.33	.030	1250	.0710	6.8	3.1	13.27
12	-	8.0	2.0	.33	.33	.040	370	.0130	2.1	3.0	7.31
13	-	8.0	2.0	.33	.33	.040	250	.0200	1.7	2.4	3.05
14	-	10.0	1.0	.10	.10	.045	170	.1500	0.0	0.0	0.00
15	-	3.0	2.0	.33	.33	.030	600	.0167	0.0	0.0	0.00
17	-	3.0	2.0	.33	.33	.050	170	.2000	5.9	.5	8.92
24	-	5.0	2.0	.33	.33	.040	300	.2500	15.1	.3	126.2
29	30.0	-	-	-	-	.012	70	.0100	10.2	.1	45.74
30	36.0	-	-	-	-	.012	50	.0070	9.7	.1	64.50
31	-	5.0	2.0	.33	.33	.040	200	.1200	10.4	.3	84.52
34	18.0	-	-	-	-	.012	280	.0200	9.5	.5	8.67
36	-	10.0	1.0	.10	.10	.050	1500	.4400	9.6	2.6	56.92
37	-	10.0	1.0	.10	.10	.050	1750	.4400	5.0	5.8	7.42
38	-	10.0	1.0	.10	.10	.050	2500	.3000	6.3	6.6	23.87
39	-	8.0	2.0	.20	.20	.040	2700	.0480	5.4	8.3	42.79
40	30.0	-	-	-	-	.012	50	.0050	7.2	.1	33.67
41	-	3.0	2.0	.33	.33	.050	300	.2300	9.0	.6	32.23
42	-	3.0	2.0	.33	.33	.050	300	.2500	8.9	.6	28.17
43	-	3.0	2.0	.33	.33	.050	450	.0730	2.5	3.1	1.23
44	-	8.0	2.0	.20	.20	.040	1200	.0480	5.7	3.5	50.25

60	-	10.0	1.0	.10	.10	.050	250	.5200	10.4	.4	65.02
83	42.0x2	-	-	-	-	.012	50	.0100	12.8	.1	192.5
84	-	3.0	2.5	.33	.33	.040	80	.0800	11.3	.1	193.1
85	-	3.0	2.5	.33	.33	.045	800	.1000	12.0	1.1	240.8
87	-	3.0	3.0	.33	.33	.045	2100	.0840	11.4	3.1	254.7
88	-	3.0	3.0	.33	.33	.045	1400	.0530	9.8	2.4	278.1
89	42.0	-	-	-	-	.012	50	.0500	28.8	0.0	263.8
90	-	5.0	3.0	.33	.33	.050	1500	.1000	11.1	2.3	248.1
91	-	3.0	2.0	.33	.33	.040	1050	.0890	11.2	1.6	146.0
93	-	10.0	1.0	.10	.10	.050	1300	.3500	11.5	1.9	147.2
94	48.0	-	-	-	-	.012	100	.0250	22.3	.1	247.8
97	-	10.0	3.0	.20	.20	.045	500	.0200	6.7	1.3	419.5
98	-	10.0	3.0	.20	.20	.045	3650	.0260	7.9	7.7	569.1
99	-	10.0	3.0	.20	.20	.045	3500	.0290	8.4	7.0	595.4

POND ROUTING BY STOR-IND METHOD

POND NO.	START ELEV. (FT)	FLOOD ELEV. (FT)	PEAK ELEV. (FT)	PEAK STORAGE (AF)	PEAK FLOW Qin (CFS)	PEAK FLOW Qout (CFS)	PEAK FLOW Qpri (CFS)	PEAK FLOW Qsec (CFS)	Qout ATTEN. (%)	Qout LAG (MIN)	
1	2312.9	2317.0	2315.6	3.39	114.3	7.32			94	51.9	
3	2279.0	2290.5	2290.2	1.25	55.35	23.66			57	9.6	
4	2179.0	2190.5	2189.7	.62	25.00	24.21			3	6.3	
5	2294.0	2301.0	2299.9	.60	18.63	.70			96	99.0	
6	2199.0	2208.0	2207.9	.47	24.25	10.47			57	7.8	
7	2109.0	2116.0	2115.7	1.00	31.99	19.86	1.24	18.62	38	31.7	
8	2179.0	2186.0	2185.9	1.17	52.29	16.97	.22	16.75	68	9.5	
9	2064.0	2071.5	2071.3	1.03	70.88	64.23			9	3.8	
10	2099.0	2106.0	2106.0	.72	92.33	80.23			13	4.1	
11	1999.0	2007.0	2005.8	.49	20.94	7.49			64	9.5	
12	2044.0	2051.5	2051.2	1.26	64.50	53.58			17	6.2	
13	2194.0	2201.0	2200.1	.87	37.77	9.18	.20	8.97	76	13.2	
14	2154.0	2161.0	2160.9	1.36	13.68	0.00			100	0.0	
21	1929.0	1936.5	1936.2	.52	268.3	268.4			0	.5	
22	2069.0	2078.5	2078.1	2.02	211.5	194.5			8	4.6	
25	1909.0	1917.0	1916.6	1.56	167.0	160.7	.59	160.1	4	2.5	
26	2139.0	2146.5	2146.4	1.45	127.1	125.6	1.90	123.7	1	3.0	
27	1504.0	1512.5	1512.2	.78	254.8	255.1	1.18	253.9	0	0.0	
28	1929.0	1936.5	1936.4	1.19	70.50	34.13	1.77	32.36	52	12.0	
30	0.0	0.0	0.0	0.00	508.3	508.3			0	0.0	N
31	2159.0	2166.5	2166.3	3.36	150.0	83.19	.62	82.57	45	9.0	
36	2272.0	2276.0	2275.9	.86	79.59	63.04			21	3.3	
37	2297.0	2301.0	2299.5	1.36	57.03	7.60			87	15.9	
38	2164.0	2171.0	2170.5	.87	44.83	34.40			23	6.6	
40	2014.0	2021.0	2021.0	1.26	62.22	30.60	.49	30.11	51	8.2	

100	1304.0	1316.0	1315.9	.98	746.0	746.9	.84	746.0	0	.1
101	2307.9	2311.0	2310.5	1.52	7.31	3.05			58	233.8
102	2302.9	2306.0	2304.3	1.19	3.05	0.00			100	0.0