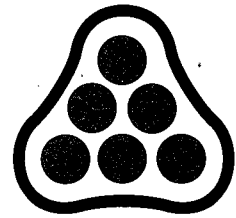
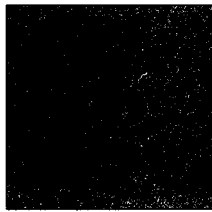


DRAINAGE PLAN
AND
SUPPORTING CALCULATIONS



PROFESSIONAL
ENGINEERING
CONSULTANTS
PROFESSIONAL ASSOCIATION



FOR
NORTHRIDGE LAKES
AN ADDITION TO WICHITA, SEDGWICK COUNTY, KS

PREPARED BY
PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
ENGINEERS
WICHITA, KANSAS

FEBRUARY 24, 1995

303 S. TOPEKA
WICHITA, KANSAS 67202
(316) 262-2691
FAX (316) 262-3003

The proposed Northridge Lakes plat is located in the S1/2 of the NW1/4 of Section 4, T27S, R1W. The development will consist of approximately 80 acres of 1/4 ac. single-family residential lots. The Drainage Plan for this plat is broken into two major drainage systems; an East system and a West system.

The portion of the proposed plat that will drain to the West will tie in to an existing drainage system in Sterling Farms and Sterling Farms 2nd Additions. In developing the Drainage Plan for this plat, the impact that runoff from this site will have on these downstream additions must be evaluated. The Drainage Plan for Sterling Farms 2nd Addition explained the sensitivity of the system to not only the peak discharges in to the system, but also the timing of the peaks.

The results of our analysis indicate that the proposed detention system will effectively delay and reduce the 100-year discharges (Q100) from the area east of Tyler Road so as to not increase the potential for flooding in the Sterling Farms area. In fact, the 100-year Design Water Surface (DWS100) elevation for Ponds No. 1 & 2 in Sterling Farms 2nd Addition drops slightly from 1349.86 to 1349.84, and the Q100 into the ponds decreases slightly from 436 cfs to 428 cfs. The remainder of the system is unaffected by the development of Kastens property. The proposed design is shown on the enclosed Drainage Plan.

The portion of the plat that drains to the east is comprised of approximately 44 acres of drainage basin. In addition to on-site drainage, this drainage plan will incorporate an extension of, and provide an outfall structure for, an existing lake in the Lake Ridge area of Reflection Ridge Addition. The addition of this structure will lower the static pool and lessen potential flooding problems in the area, as the lake previously had no permanent outlet. A lake has also been constructed along the east line of the property, behind Lots 1 thru 6, Block 5, Reflection Ridge 7th Addition, and Lots 71 and 72, Block 1, Reflection Ridge 8th Addition. This lake currently drains to the southeast into a small pond on the driving range and then through a channel to the east.

Design of the drainage system for the east part of the plat is controlled by two constraints: 1) The DWS100 for the existing pond must be at or below 1338.84 (1' below low opening of adjacent home in R. R. 7th); and 2) The peak discharge onto the driving range must not exceed 100 cfs (per Reflection Ridge 7th Drainage Plan). In accordance with these controls, the resultant drainage system is depicted on the enclosed Drainage Plan.

It should be noted that the DWS100 elevations and peak flows shown on the Drainage Plan represent only runoff from this plat and the Lake Ridge lake. There is a tract of land approximately 50 ac. in size in the N 1/2 of this 1/4 section that drains toward the east line of the 1/4 section to a large flat low area where the water currently ponds. It is unknown whether this water will be directed to the north or to the south when development of this land takes place. The ditch on the south side of 29th St. North along Reflection Ridge 6th, 7th, and 8th Additions was sized to include a 70 ac. basin from this N1/2 of this 1/4

section, making it possible to drain the 50 ac. tract to the north without negative impact on adjoining ground.

To make it possible to drain the same basin to the south, if desired in the future, the outlet pipe from Lake No. 5 to the driving range lake has been sized to allow passage of the design storm for the larger basin without exceeding the allowable DWS100 or Q100 stated previously. To meet these requirements, the surface area of Lake No. 5 must be increased to a minimum of 3.8 ac. at elevation 1335.0, and 4.5 ac. at elevation 1340.0. The enclosed model shows that the combination of the larger drainage basin and greater surface area yields a DWS100 for Pond No. 5 of 1338.65, and Q100 across the driving range of 95 cfs.



Date _____ Page _____ of _____

Project _____

Item _____

HYDROLOGY

All West System drainage in the NW 1/4 of Sec. 4 is based on 1/4 ac. residential lots with $T_c = 15$ min assumed.

$$CN = 83$$

Line num.	Line ID	Inc. Area (ac)	Rnoff coeff (C)	Incr CA	Sum CA	Tc (min)	Rntal Int. (in/hr)	Total runoff (cfs)	Add. flow (cfs)	Total flow (cfs)	Capac @ full (cfs)	Line size (in x in)	Line len. (ft)	Line slope (%)	HGL slope (%)	Vel. up (ft/s)	Vel. down (ft/s)	HGL up (ft)	HGL down (ft)	Invert up (ft)	Invert down (ft)	DnSt line
6	5 to 6	0.0	0.00	0.00	0.00	0.0	0.00	0.0	78.0	78.0	102.6	48 c	200	0.51	0.30	6.2	6.2	55.53	54.94	48.00	46.98	5
5	4 to 5	0.0	0.00	0.00	0.00	1.1	0.00	0.0	0.0	78.0	102.8	48 c	330	0.51	0.29	6.2	6.2	54.64	53.67	46.98	45.29	4
4	3 to 4	0.0	0.00	0.00	0.00	2.9	0.00	0.0	24.1	102.1	141.0	54 c	140	0.51	0.27	6.4	6.4	53.35	52.97	45.29	44.57	3
3	2 to 3	0.0	0.00	0.00	0.00	3.7	0.00	0.0	10.0	112.1	142.9	54 c	250	0.53	0.33	7.0	7.0	52.58	51.77	44.57	43.25	2
2	1 to 2	0.0	0.00	0.00	0.00	5.1	0.00	0.0	0.0	112.1	139.1	54 c	300	0.50	0.33	7.0	7.0	51.38	50.41	43.25	41.75	1
1	0 to 1	0.0	0.00	0.00	0.00	6.8	0.00	0.0	0.0	112.1	139.1	54 c	50	0.50	0.33	7.0	7.0	50.02	49.86	41.75	41.50	0

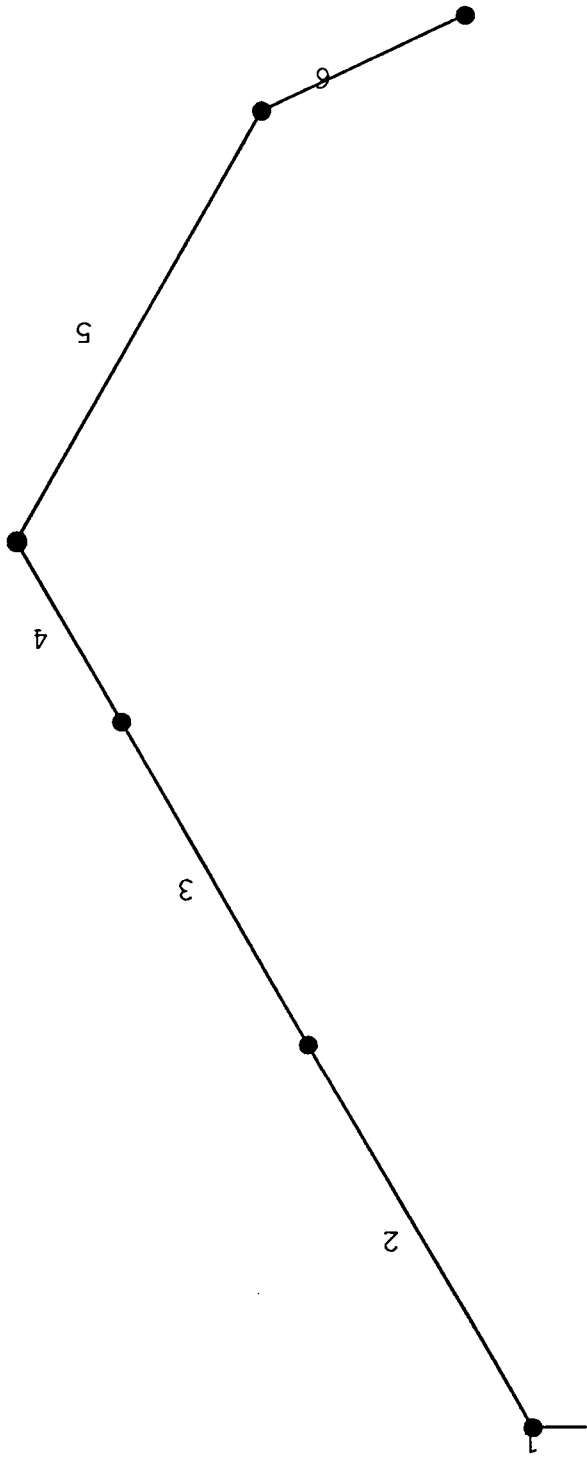
PROJECT FILE: KSTNS.STM

I-D-F FILE: New.IDF

TOTAL NUMBER OF LINES: 6

RUN DATE: 02-14-1995

NOTES: c = circular; e = elliptical; b = box; Intensity = 0 / (Tc + 0) ^ 0; Return period = 100 Yrs.



CURRENT DATE: 01-13-1995
 CURRENT TIME: 08:12:43

FILE DATE: 01-12-1995
 FILE NAME: KASTENS

 FHWA CULVERT ANALYSIS
 HY-8, VERSION 3.2

# C #	SITE DATA			#	CULVERT SHAPE, MATERIAL, INLET					#
# U	INLET	OUTLET	CULVERT	#	BARRELS	SPAN	RISE	MANNING	INLET	#
# V #	ELEV.	ELEV.	LENGTH	#	SHAPE	(FT)	(FT)	n	TYPE	#
# #	(FT)	(FT)	(FT)	#	MATERIAL					#
# 1 #	1347.00	1346.75	80.00	#	1 RCB	8.00	3.00	.012	CONVENTIONAL	#
# 2 #				#						#
# 3 #				#						#
# 4 #				#						#
# 5 #				#						#
# 6 #				#						#

FILE: KASTENS	CULVERT HEADWATER ELEVATION (FT)						DATE: 01-12-1995
DISCHARGE	1	2	3	4	5	6	ROADWAY
0	1349.84	0.00	0.00	0.00	0.00	0.00	1351.40
30	1349.97	0.00	0.00	0.00	0.00	0.00	1351.62
60	1350.04	0.00	0.00	0.00	0.00	0.00	1351.74
90	1350.17	0.00	0.00	0.00	0.00	0.00	1351.85
120	1350.44	0.00	0.00	0.00	0.00	0.00	1351.94
150	1350.75	0.00	0.00	0.00	0.00	0.00	1352.02
158	1350.85	0.00	0.00	0.00	0.00	0.00	1352.04
210	1351.88	0.00	0.00	0.00	0.00	0.00	1352.18
240	1352.63	0.00	0.00	0.00	0.00	0.00	1352.25
270	1353.48	0.00	0.00	0.00	0.00	0.00	1352.32
300	1354.42	0.00	0.00	0.00	0.00	0.00	1352.39

CURRENT DATE: 01-13-1995
 CURRENT TIME: 08:12:43

FILE DATE: 01-12-1995
 FILE NAME: KASTENS

 CULVERT # 1

PERFORMANCE CURVE FOR 1 BARREL(S)

Q (cfs)	HWE (ft)	TWE (ft)	ICH (ft)	OCH (ft)	FLOW TYPE	CCE (ft)	FCE (ft)	TCE (ft)	VO (fps)
0	1349.84	1349.84	0.00	2.84	0-NF	0.00	1347.00	0.00	0.00
30	1349.96	1349.84	1.13	2.96	1-S1	0.00	0.00	0.00	1.25
60	1350.04	1349.84	1.82	3.04	1-S1	0.00	0.00	0.00	2.50
90	1350.17	1349.84	2.42	3.17	1-S1	0.00	0.00	0.00	3.75
120	1350.44	1349.84	3.00	3.44	1-S1	0.00	0.00	0.00	5.00
150	1350.75	1349.84	3.58	3.75	4-FF	0.00	0.00	0.00	6.25
158	1350.85	1349.84	3.74	3.85	4-FF	0.00	0.00	0.00	6.58
210	1351.88	1349.84	4.88	4.62	4-FF	0.00	0.00	0.00	8.75
240	1352.63	1349.84	5.63	5.17	4-FF	0.00	0.00	0.00	10.00
270	1353.48	1349.84	6.48	5.78	4-FF	0.00	0.00	0.00	11.25
300	1354.42	1349.84	7.42	6.47	4-FF	0.00	0.00	0.00	12.50

El. inlet face invert 1347.00 ft El. outlet invert 1346.75 ft
 El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT *****
 INLET STATION (FT) 0.00
 INLET ELEVATION (FT) 1347.00
 OUTLET STATION (FT) 80.00
 OUTLET ELEVATION (FT) 1346.75
 NUMBER OF BARRELS 1.00
 SLOPE (V-FT/H-FT) 0.0031
 CULVERT LENGTH ALONG SLOPE (FT) 80.00

***** CULVERT DATA SUMMARY *****
 BARREL SHAPE BOX
 BARREL SPAN 8.00 FT
 BARREL RISE 3.00 FT
 BARREL MATERIAL CONCRETE
 BARREL MANNING'S N 0.012
 INLET TYPE CONVENTIONAL
 INLET EDGE AND WALL 1:1 BEVEL (45 DEG. FLARE)
 INLET DEPRESSION NONE

CURRENT DATE: 01-13-1995
CURRENT TIME: 08:12:43

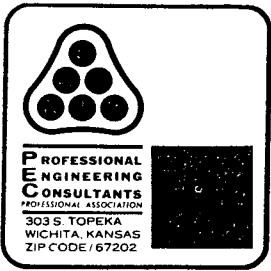
FILE DATE: 01-12-1995
FILE NAME: KASTENS

TAILWATER

CONSTANT WATER SURFACE ELEVATION
1349.84

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH (FT)	30.00
CREST LENGTH (FT)	100.00
OVERTOPPING CREST ELEVATION (FT)	1351.40



Date _____ Page _____ of _____

Project _____

Item Submerged Weir in Pond #A

From HEC-1 Run:
Model w/ free flow 5' weir; $Q = 78$ cfs

Weir Length for $Q = 78$ cfs w/ submergence

$$H_{up} = 1355.99 - 1353.00 = 2.99'$$

$$H_{dn} = 1355.53 - 1353.00 = 2.53'$$

$$\frac{H_{dn}}{H_{up}} = \frac{2.53}{2.99} = 0.85$$

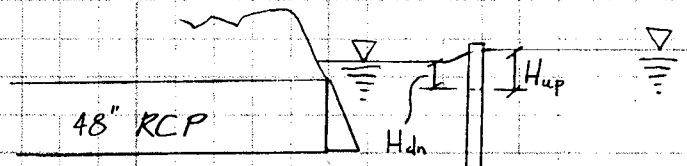
$$Q_{sub} = 78 \text{ cfs}$$

From Fig. 5-5:

$$\frac{Q_{sub}}{Q_{free}} = 0.55$$

$$Q_{free} = \frac{78}{0.55} = 141.8 \text{ cfs}$$

$$Q_{free} = CLH^{1.5}$$
$$142 = 3.0(L)(2.99^{1.5})$$
$$\underline{\underline{9.16' = L}}$$





Date _____ Page _____ of _____

Project _____

Item Submerged Weir in #5 hole pond

From HEC-1 Run:

Model w/ free flow 24' weir $Q = 158$ cfs

Weir Length for $Q = 158$ cfs w/ submergence

$$\begin{aligned} H_{up} &= 1351.69 - 1350.0 = 1.69' \\ H_{dn} &= 1350.85 - 1350.0 = 0.85 \end{aligned}$$

$$\frac{H_{dn}}{H_{up}} = \frac{0.85}{1.69} = 0.50$$

$$Q_{sub} = 158 \text{ cfs}$$

From Fig. 5-5:

$$\frac{Q_{sub}}{Q_{free}} = 0.84$$

$$Q_{free} = \frac{158}{0.84} = 188 \text{ cfs}$$

$$\begin{aligned} Q_{free} &= CLH^{1.5} \\ 188 &= 3.0(L)(1.69)^{1.5} \\ \underline{\underline{28.5' = L}} \end{aligned}$$

```

1*****
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* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* MAY 1991 *
* VERSION 4.0.1E *
* Lahey F77L-EM/32 version 5.01 *
* Dodson & Associates, Inc. *
* RUN DATE 01/13/95 TIME 07:58:49 *
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*****
*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 551-1748 *
*****
    
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X X XXXXXX XXXX X
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X X X X X X
X X X X X X
X X XXXXXX XXXX XXX
    
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY, DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

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1 ID STERLING FARMS 2ND ADDITION DRAINAGE PLAN
2 ID PEC PROJECT NO 36-92600-2051
3 ID STAGE STORAGE ANALYSIS --- 100 YR
4 ID PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
5 ID COMPUTED BY M.W.BERRY, P.E. 02/11/93
6 ID FILENAME="A:\MISCHEC1\STERFAR2.HEC" DISKNAME="MWB01"
7 ID REVISED BY DRC 1-11-95
8 ID FILENAME:"T:\DAR\HEC1\STERFAR2.IH1"
    
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*** FREE ***
*** LIST ***

```

*DIAGRAM
9 IT 5 11FEB93 600 0 11FEB93 1800
10 IO 0 0
11 IN 30 11FEB93 600

12 KK EASTPART OF KASTEN'S PROP. - 1/4 AC. RESIDENTIAL LOTS. DRAINS TO LAKE.
13 BA .05809
14 PB 7.8
15 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
16 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
17 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
18 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
19 LS 0 83 0
20 UD 0.25

21 KK PONDA
22 RS 1 ELEV 1353.0
23 SA 2.35 3.00
24 SE 1353.0 1356.5
25 SS 1353.0 5 3.0 1.5

26 KK RRWESTOFF SITE DRAINAGE - WEST PORTION OF REFLECTION RIDGE
27 BA 0.0828
28 PB 7.8
29 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
30 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
31 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
32 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
33 LS 0 69 0
34 UD 0.40

35 KK PONDB
    
```

36 RS 1 ELEV 1350.0
 37 SA 1.00 1.35
 38 SE 1350.0 1352.5
 39 SS 1350.0 24.0 3.0 1.5

40 KK WESTPART OF KASTEN'S PROP. - 1/4 AC. RES. LOTS. DRAINS TO TYLER
 41 BA .01452
 42 PB 7.8
 43 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 44 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 45 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 46 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 47 LS 0 83 0

1

HEC-1 INPUT

PAGE 2

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

48 UD .25

49 KK BASIN1
 50 BA 0.0047
 51 PB 7.8
 52 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 53 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 54 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 55 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 56 LS 0 79 0
 57 UD 0.25

58 KK BASIN2
 59 BA 0.0578
 60 PB 7.8
 61 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 62 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 63 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 64 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 65 LS 0 81 0
 66 UD 0.25

67 KK INTO2
 68 HC 5

69 KK PON1\$2
 * pond #1 static pool lowered to 1346.5
 * pond #1 & #2 combined to function together
 70 RS 1 ELEV 1346.5
 71 SA 2.8 3.9
 72 SE 1346.5 1351.5
 * note: cofq=1.8 for submergence correction
 73 SS 1346.5 30.0 1.8 1.5

74 KK BASIN3
 75 BA 0.150
 76 PB 7.8
 77 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 78 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 79 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 80 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 81 LS 0 82 0
 82 UD 0.25

83 KK INTO3
 84 HC 2

85 KK POND3
 86 RS 1 ELEV 1345
 87 SV 0 8 16 23 31 35
 88 SQ 0 40 220 325 400 440
 89 SE 1344.7 1346.0 1347.0 1348.0 1349.0 1349.5

1

HEC-1 INPUT

PAGE 3

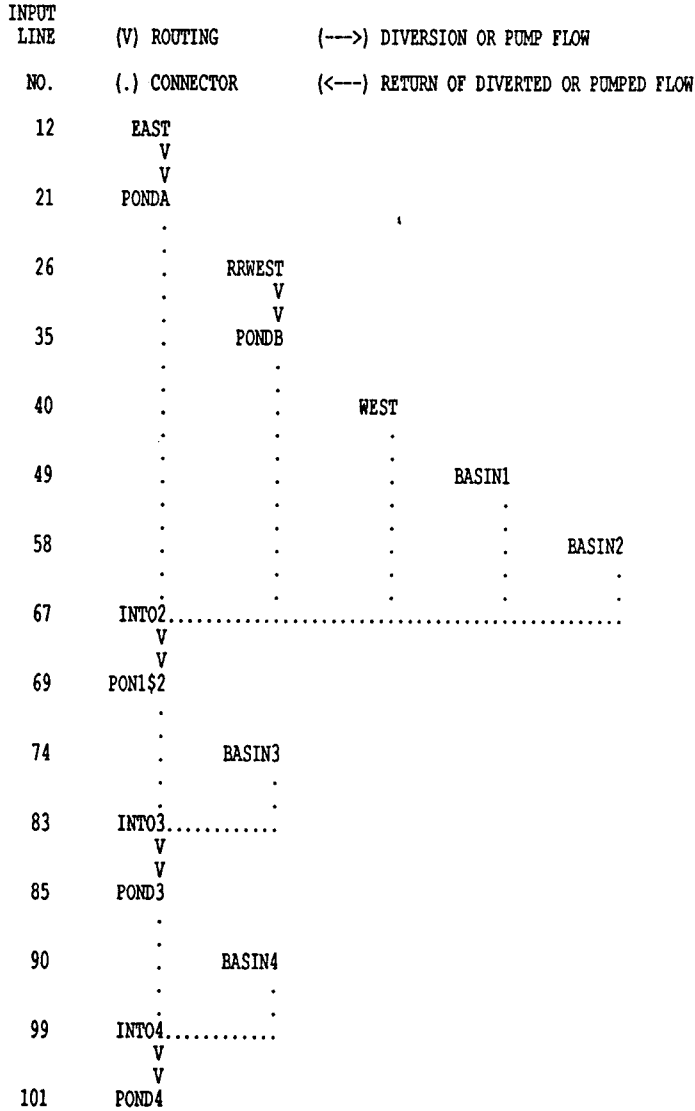
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90 KK BASIN4
 91 BA 0.0188
 92 PB 7.8
 93 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 94 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 95 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958

96	PC	0.964	0.970	0.976	0.982	0.988	0.994	1.000
97	LS	0	76	0				
98	UD	0.25						
99	KK	INTO4						
100	HC	2						
101	KK	POND4						
102	RS	1	ELEV	1344.7				
103	SV	0.0	0.6	1.1	1.7	2.3	2.8	
104	SQ	0	40	210	350	450	530	
105	SE	1344.7	1345.7	1346.7	1347.7	1348.7	1349.7	
106	ZZ							

1

SCHEMATIC DIAGRAM OF STREAM NETWORK



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```

1*****
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
* MAY 1991 *
* VERSION 4.0.1E *
* Lahey F77L-EM/32 version 5.01 *
* Dodson & Associates, Inc. *
* RUN DATE 01/13/95 TIME 07:58:49 *
*****
  
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*****
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 551-1748 *
*****
  
```

PEC PROJECT NO 36-92600-2051
 STAGE STORAGE ANALYSIS --- 100 YR
 PROFESSIONAL ENGINEERING CONSULTANTS, P.A.
 COMPUTED BY M.W.BERRY, P.E. 02/11/93
 FILENAME="A:\MISCHEC1\STERFAR2.HEC" DISKNAME="MWB01"
 REVISED BY DRC 1-11-95
 FILENAME:"T:\DAR\HEC1\STERFAR2.IH1"

10 IO OUTPUT CONTROL VARIABLES
 IPRMT 0 PRINT CONTROL
 IPLOT 0 PLOT CONTROL
 QSCAL 0. HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA
 NMIN 5 MINUTES IN COMPUTATION INTERVAL
 IDATE 11FEB93 STARTING DATE
 ITIME 0600 STARTING TIME
 NQ 145 NUMBER OF HYDROGRAPH ORDINATES
 NDDATE 11FEB93 ENDING DATE
 NDTIME 1800 ENDING TIME
 ICENT 19 CENTURY MARK
 COMPUTATION INTERVAL 0.08 HOURS
 TOTAL TIME BASE 12.00 HOURS

ENGLISH UNITS
 DRAINAGE AREA SQUARE MILES
 PRECIPITATION DEPTH INCHES
 LENGTH, ELEVATION FEET
 FLOW CUBIC FEET PER SECOND
 STORAGE VOLUME ACRE-Feet
 SURFACE AREA ACRES
 TEMPERATURE DEGREES FAHRENHEIT

*** **

 * *
 12 KK * EAST * PART OF KASTEN'S PROP. - 1/4 AC. RESIDENTIAL LOTS. DRAINS TO LAKE.
 * *

11 IN TIME DATA FOR INPUT TIME SERIES
 JXMIN 30 TIME INTERVAL IN MINUTES
 JXDATE 11FEB93 STARTING DATE
 JXTIME 600 STARTING TIME

SUBBASIN RUNOFF DATA

13 BA SUBBASIN CHARACTERISTICS
 TAREA 0.06 SUBBASIN AREA

PRECIPITATION DATA

14 PB STORM 7.80 BASIN TOTAL PRECIPITATION

15 PI INCREMENTAL PRECIPITATION PATTERN
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.01 0.01 0.01 0.01 0.01 0.01
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 0.06 0.06 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01
 0.01 0.01 0.01 0.01 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
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 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

19 LS SCS LOSS RATE
 STRTL 0.41 INITIAL ABSTRACTION
 CRVNER 83.00 CURVE NUMBER
 RTIMP 0.00 PERCENT IMPERVIOUS AREA

20 UD SCS DIMENSIONLESS UNITGRAPH
TLAG 0.25 LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
17 END-OF-PERIOD ORDINATES

17. 58. 93. 93. 72. 43. 27. 17. 11. 7.
4. 3. 2. 1. 1. 0. 0.

HYDROGRAPH AT STATION EAST

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
11	FEB	0600	1	0.00	0.00	0.00	0.	*	11	FEB	1205	74	0.11	0.01	0.10	199.
11	FEB	0605	2	0.02	0.02	0.00	0.	*	11	FEB	1210	75	0.11	0.01	0.10	186.
11	FEB	0610	3	0.02	0.02	0.00	0.	*	11	FEB	1215	76	0.11	0.01	0.10	154.
11	FEB	0615	4	0.02	0.02	0.00	0.	*	11	FEB	1220	77	0.11	0.01	0.10	119.
11	FEB	0620	5	0.02	0.02	0.00	0.	*	11	FEB	1225	78	0.11	0.01	0.10	91.
11	FEB	0625	6	0.02	0.02	0.00	0.	*	11	FEB	1230	79	0.11	0.01	0.10	75.
11	FEB	0630	7	0.02	0.02	0.00	0.	*	11	FEB	1235	80	0.06	0.00	0.05	64.
11	FEB	0635	8	0.02	0.02	0.00	0.	*	11	FEB	1240	81	0.06	0.00	0.05	54.
11	FEB	0640	9	0.02	0.02	0.00	0.	*	11	FEB	1245	82	0.06	0.00	0.05	45.
11	FEB	0645	10	0.02	0.02	0.00	0.	*	11	FEB	1250	83	0.06	0.00	0.05	38.
11	FEB	0650	11	0.02	0.02	0.00	0.	*	11	FEB	1255	84	0.06	0.00	0.05	33.
11	FEB	0655	12	0.02	0.02	0.00	0.	*	11	FEB	1300	85	0.06	0.00	0.05	29.
11	FEB	0700	13	0.02	0.02	0.00	0.	*	11	FEB	1305	86	0.04	0.00	0.04	27.
11	FEB	0705	14	0.02	0.02	0.00	0.	*	11	FEB	1310	87	0.04	0.00	0.04	25.
11	FEB	0710	15	0.02	0.02	0.00	0.	*	11	FEB	1315	88	0.04	0.00	0.04	23.
11	FEB	0715	16	0.02	0.02	0.00	0.	*	11	FEB	1320	89	0.04	0.00	0.04	21.
11	FEB	0720	17	0.02	0.02	0.00	0.	*	11	FEB	1325	90	0.04	0.00	0.04	20.
11	FEB	0725	18	0.02	0.02	0.00	0.	*	11	FEB	1330	91	0.04	0.00	0.04	19.
11	FEB	0730	19	0.02	0.02	0.00	0.	*	11	FEB	1335	92	0.03	0.00	0.03	18.
11	FEB	0735	20	0.02	0.02	0.00	0.	*	11	FEB	1340	93	0.03	0.00	0.03	18.
11	FEB	0740	21	0.02	0.02	0.00	0.	*	11	FEB	1345	94	0.03	0.00	0.03	17.
11	FEB	0745	22	0.02	0.02	0.00	0.	*	11	FEB	1350	95	0.03	0.00	0.03	16.
11	FEB	0750	23	0.02	0.02	0.00	0.	*	11	FEB	1355	96	0.03	0.00	0.03	15.
11	FEB	0755	24	0.02	0.02	0.00	0.	*	11	FEB	1400	97	0.03	0.00	0.03	15.
11	FEB	0800	25	0.02	0.02	0.00	0.	*	11	FEB	1405	98	0.02	0.00	0.02	14.
11	FEB	0805	26	0.02	0.02	0.00	0.	*	11	FEB	1410	99	0.02	0.00	0.02	13.
11	FEB	0810	27	0.02	0.02	0.00	0.	*	11	FEB	1415	100	0.02	0.00	0.02	13.
11	FEB	0815	28	0.02	0.02	0.00	0.	*	11	FEB	1420	101	0.02	0.00	0.02	12.
11	FEB	0820	29	0.02	0.02	0.00	0.	*	11	FEB	1425	102	0.02	0.00	0.02	11.
11	FEB	0825	30	0.02	0.02	0.00	0.	*	11	FEB	1430	103	0.02	0.00	0.02	11.
11	FEB	0830	31	0.02	0.02	0.00	0.	*	11	FEB	1435	104	0.02	0.00	0.02	10.
11	FEB	0835	32	0.02	0.02	0.00	0.	*	11	FEB	1440	105	0.02	0.00	0.02	10.
11	FEB	0840	33	0.02	0.02	0.00	0.	*	11	FEB	1445	106	0.02	0.00	0.02	10.
11	FEB	0845	34	0.02	0.02	0.00	1.	*	11	FEB	1450	107	0.02	0.00	0.02	10.
11	FEB	0850	35	0.02	0.02	0.00	1.	*	11	FEB	1455	108	0.02	0.00	0.02	10.
11	FEB	0855	36	0.02	0.02	0.00	1.	*	11	FEB	1500	109	0.02	0.00	0.02	10.
11	FEB	0900	37	0.02	0.02	0.00	1.	*	11	FEB	1505	110	0.02	0.00	0.02	10.
11	FEB	0905	38	0.02	0.02	0.00	1.	*	11	FEB	1510	111	0.02	0.00	0.02	10.
11	FEB	0910	39	0.02	0.02	0.01	1.	*	11	FEB	1515	112	0.02	0.00	0.02	10.
11	FEB	0915	40	0.02	0.02	0.01	2.	*	11	FEB	1520	113	0.02	0.00	0.02	10.
11	FEB	0920	41	0.02	0.02	0.01	2.	*	11	FEB	1525	114	0.02	0.00	0.02	10.
11	FEB	0925	42	0.02	0.02	0.01	2.	*	11	FEB	1530	115	0.02	0.00	0.02	10.
11	FEB	0930	43	0.02	0.02	0.01	2.	*	11	FEB	1535	116	0.02	0.00	0.02	10.
11	FEB	0935	44	0.03	0.02	0.01	3.	*	11	FEB	1540	117	0.02	0.00	0.02	10.
11	FEB	0940	45	0.03	0.02	0.01	3.	*	11	FEB	1545	118	0.02	0.00	0.02	10.
11	FEB	0945	46	0.03	0.02	0.01	3.	*	11	FEB	1550	119	0.02	0.00	0.02	10.
11	FEB	0950	47	0.03	0.02	0.01	3.	*	11	FEB	1555	120	0.02	0.00	0.02	10.
11	FEB	0955	48	0.03	0.02	0.01	4.	*	11	FEB	1600	121	0.02	0.00	0.02	10.
11	FEB	1000	49	0.03	0.02	0.01	4.	*	11	FEB	1605	122	0.02	0.00	0.01	10.
11	FEB	1005	50	0.04	0.02	0.01	4.	*	11	FEB	1610	123	0.02	0.00	0.01	9.
11	FEB	1010	51	0.04	0.02	0.01	4.	*	11	FEB	1615	124	0.02	0.00	0.01	9.
11	FEB	1015	52	0.04	0.02	0.01	5.	*	11	FEB	1620	125	0.02	0.00	0.01	8.
11	FEB	1020	53	0.04	0.02	0.02	5.	*	11	FEB	1625	126	0.02	0.00	0.01	8.
11	FEB	1025	54	0.04	0.02	0.02	6.	*	11	FEB	1630	127	0.02	0.00	0.01	7.
11	FEB	1030	55	0.04	0.02	0.02	6.	*	11	FEB	1635	128	0.02	0.00	0.01	7.
11	FEB	1035	56	0.05	0.03	0.02	7.	*	11	FEB	1640	129	0.02	0.00	0.01	7.
11	FEB	1040	57	0.05	0.02	0.02	7.	*	11	FEB	1645	130	0.02	0.00	0.01	7.
11	FEB	1045	58	0.05	0.02	0.02	8.	*	11	FEB	1650	131	0.02	0.00	0.01	7.
11	FEB	1050	59	0.05	0.02	0.03	9.	*	11	FEB	1655	132	0.02	0.00	0.01	7.

11 FEB 1055	60	0.05	0.02	0.03	10.	*	11 FEB 1700	133	0.02	0.00	0.01	7.
11 FEB 1100	61	0.05	0.02	0.03	10.	*	11 FEB 1705	134	0.02	0.00	0.01	7.
11 FEB 1105	62	0.07	0.03	0.04	11.	*	11 FEB 1710	135	0.02	0.00	0.01	7.
11 FEB 1110	63	0.07	0.03	0.04	12.	*	11 FEB 1715	136	0.02	0.00	0.01	7.
11 FEB 1115	64	0.07	0.03	0.05	14.	*	11 FEB 1720	137	0.02	0.00	0.01	7.
11 FEB 1120	65	0.07	0.03	0.05	16.	*	11 FEB 1725	138	0.02	0.00	0.01	7.
11 FEB 1125	66	0.07	0.03	0.05	18.	*	11 FEB 1730	139	0.02	0.00	0.01	7.
11 FEB 1130	67	0.07	0.03	0.05	19.	*	11 FEB 1735	140	0.01	0.00	0.01	7.
11 FEB 1135	68	0.59	0.17	0.42	26.	*	11 FEB 1740	141	0.01	0.00	0.01	6.
11 FEB 1140	69	0.59	0.13	0.46	49.	*	11 FEB 1745	142	0.01	0.00	0.01	6.
11 FEB 1145	70	0.59	0.10	0.49	87.	*	11 FEB 1750	143	0.01	0.00	0.01	5.
11 FEB 1150	71	0.59	0.08	0.51	128.	*	11 FEB 1755	144	0.01	0.00	0.01	5.
11 FEB 1155	72	0.59	0.06	0.53	163.	*	11 FEB 1800	145	0.01	0.00	0.01	4.
11 FEB 1200	73	0.59	0.05	0.54	188.	*						

TOTAL RAINFALL = 7.80, TOTAL LOSS = 2.01, TOTAL EXCESS = 5.79

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	12.00-HR	
199.	6.08	33.	18.	18.	18.	
		(INCHES)	5.355	5.749	5.749	5.749
		(AC-FT)	17.	18.	18.	18.

CUMULATIVE AREA = 0.06 SQ MI

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* *
21 KK * PONDA *
* *

HYDROGRAPH ROUTING DATA

22 RS	STORAGE ROUTING		
	NSTPS	1	NUMBER OF SUBREACHES
	ITYP	ELEV	TYPE OF INITIAL CONDITION
	RSVRC	1353.00	INITIAL CONDITION
	X	0.00	WORKING R AND D COEFFICIENT
23 SA	AREA	2.3	3.0
24 SE	ELEVATION	1353.00	1356.50
25 SS	SPILLWAY		
	CREL	1353.00	SPILLWAY CREST ELEVATION
	SPWID	5.00	SPILLWAY WIDTH
	COCW	3.00	WEIR COEFFICIENT
	EXPW	1.50	EXPONENT OF HEAD

COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	9.34
ELEVATION	1353.00	1356.50

COMPUTED OUTFLOW-ELEVATION DATA

OUTFLOW	0.00	0.00	0.02	0.13	0.45	1.08	2.11	3.64	5.78	8.62
ELEVATION	1353.00	1353.00	1353.01	1353.04	1353.10	1353.17	1353.27	1353.39	1353.53	1353.69
OUTFLOW	12.28	16.84	22.42	29.10	37.00	46.21	56.84	68.98	82.74	98.22
ELEVATION	1353.88	1354.08	1354.31	1354.56	1354.83	1355.12	1355.43	1355.77	1356.12	1356.50

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.03	0.10	0.23	0.41	0.64	0.93	1.27	1.67	2.12
OUTFLOW	0.00	0.02	0.13	0.45	1.08	2.10	3.64	5.78	8.62	12.28
ELEVATION	1353.00	1353.01	1353.04	1353.10	1353.17	1353.27	1353.39	1353.53	1353.69	1353.88

STORAGE	2.64	3.22	3.87	4.59	5.38	6.24	7.19	8.22	9.34
OUTFLOW	16.84	22.42	29.10	37.00	46.21	56.84	68.98	82.74	98.22
ELEVATION	1354.08	1354.31	1354.56	1354.83	1355.12	1355.43	1355.77	1356.12	1356.50

HYDROGRAPH AT STATION PONDA

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	
11	FEB	0600	1	0.	0.0	1353.0	*	11	FEB	1005	50	0.	0.2	1353.1	*	11	FEB	1410	99	33.	4.2	1354.7	
11	FEB	0605	2	0.	0.0	1353.0	*	11	FEB	1010	51	1.	0.3	1353.1	*	11	FEB	1415	100	31.	4.1	1354.6	
11	FEB	0610	3	0.	0.0	1353.0	*	11	FEB	1015	52	1.	0.3	1353.1	*	11	FEB	1420	101	30.	3.9	1354.6	
11	FEB	0615	4	0.	0.0	1353.0	*	11	FEB	1020	53	1.	0.3	1353.1	*	11	FEB	1425	102	28.	3.8	1354.5	
11	FEB	0620	5	0.	0.0	1353.0	*	11	FEB	1025	54	1.	0.4	1353.2	*	11	FEB	1430	103	27.	3.7	1354.5	
11	FEB	0625	6	0.	0.0	1353.0	*	11	FEB	1030	55	1.	0.4	1353.2	*	11	FEB	1435	104	26.	3.6	1354.4	
11	FEB	0630	7	0.	0.0	1353.0	*	11	FEB	1035	56	1.	0.4	1353.2	*	11	FEB	1440	105	25.	3.5	1354.4	
11	FEB	0635	8	0.	0.0	1353.0	*	11	FEB	1040	57	1.	0.5	1353.2	*	11	FEB	1445	106	24.	3.4	1354.4	
11	FEB	0640	9	0.	0.0	1353.0	*	11	FEB	1045	58	2.	0.5	1353.2	*	11	FEB	1450	107	23.	3.3	1354.3	
11	FEB	0645	10	0.	0.0	1353.0	*	11	FEB	1050	59	2.	0.6	1353.2	*	11	FEB	1455	108	22.	3.2	1354.3	
11	FEB	0650	11	0.	0.0	1353.0	*	11	FEB	1055	60	2.	0.6	1353.3	*	11	FEB	1500	109	21.	3.1	1354.3	
11	FEB	0655	12	0.	0.0	1353.0	*	11	FEB	1100	61	2.	0.7	1353.3	*	11	FEB	1505	110	21.	3.0	1354.2	
11	FEB	0700	13	0.	0.0	1353.0	*	11	FEB	1105	62	3.	0.7	1353.3	*	11	FEB	1510	111	20.	3.0	1354.2	
11	FEB	0705	14	0.	0.0	1353.0	*	11	FEB	1110	63	3.	0.8	1353.3	*	11	FEB	1515	112	19.	2.9	1354.2	
11	FEB	0710	15	0.	0.0	1353.0	*	11	FEB	1115	64	3.	0.9	1353.4	*	11	FEB	1520	113	19.	2.8	1354.2	
11	FEB	0715	16	0.	0.0	1353.0	*	11	FEB	1120	65	4.	0.9	1353.4	*	11	FEB	1525	114	18.	2.8	1354.1	
11	FEB	0720	17	0.	0.0	1353.0	*	11	FEB	1125	66	4.	1.0	1353.4	*	11	FEB	1530	115	18.	2.7	1354.1	
11	FEB	0725	18	0.	0.0	1353.0	*	11	FEB	1130	67	5.	1.1	1353.5	*	11	FEB	1535	116	17.	2.7	1354.1	
11	FEB	0730	19	0.	0.0	1353.0	*	11	FEB	1135	68	6.	1.2	1353.5	*	11	FEB	1540	117	17.	2.6	1354.1	
11	FEB	0735	20	0.	0.0	1353.0	*	11	FEB	1140	69	7.	1.5	1353.6	*	11	FEB	1545	118	16.	2.6	1354.1	
11	FEB	0740	21	0.	0.0	1353.0	*	11	FEB	1145	70	10.	1.9	1353.8	*	11	FEB	1550	119	16.	2.5	1354.0	
11	FEB	0745	22	0.	0.0	1353.0	*	11	FEB	1150	71	16.	2.5	1354.0	*	11	FEB	1555	120	16.	2.5	1354.0	
11	FEB	0750	23	0.	0.0	1353.0	*	11	FEB	1155	72	24.	3.4	1354.4	*	11	FEB	1600	121	15.	2.5	1354.0	
11	FEB	0755	24	0.	0.0	1353.0	*	11	FEB	1200	73	35.	4.4	1354.8	*	11	FEB	1605	122	15.	2.4	1354.0	
11	FEB	0800	25	0.	0.0	1353.0	*	11	FEB	1205	74	47.	5.4	1355.1	*	11	FEB	1610	123	15.	2.4	1354.0	
11	FEB	0805	26	0.	0.0	1353.0	*	11	FEB	1210	75	59.	6.4	1355.5	*	11	FEB	1615	124	14.	2.4	1354.0	
11	FEB	0810	27	0.	0.0	1353.0	*	11	FEB	1215	76	68.	7.1	1355.7	*	11	FEB	1620	125	14.	2.3	1353.9	
11	FEB	0815	28	0.	0.0	1353.0	*	11	FEB	1220	77	74.	7.6	1355.9	*	11	FEB	1625	126	14.	2.3	1353.9	
11	FEB	0820	29	0.	0.0	1353.0	*	11	FEB	1225	78	77.	7.8	1356.0	*	11	FEB	1630	127	13.	2.2	1353.9	
11	FEB	0825	30	0.	0.0	1353.0	*	11	FEB	1230	79	78.	7.8	1356.0	*	11	FEB	1635	128	13.	2.2	1353.9	
11	FEB	0830	31	0.	0.0	1353.0	*	11	FEB	1235	80	77.	7.8	1356.0	*	11	FEB	1640	129	12.	2.1	1353.9	
11	FEB	0835	32	0.	0.0	1353.0	*	11	FEB	1240	81	75.	7.7	1355.9	*	11	FEB	1645	130	12.	2.1	1353.9	
11	FEB	0840	33	0.	0.0	1353.0	*	11	FEB	1245	82	73.	7.5	1355.9	*	11	FEB	1650	131	12.	2.1	1353.9	
11	FEB	0845	34	0.	0.0	1353.0	*	11	FEB	1250	83	70.	7.3	1355.8	*	11	FEB	1655	132	12.	2.0	1353.8	
11	FEB	0850	35	0.	0.0	1353.0	*	11	FEB	1255	84	67.	7.1	1355.7	*	11	FEB	1700	133	11.	2.0	1353.8	
11	FEB	0855	36	0.	0.0	1353.0	*	11	FEB	1300	85	64.	6.8	1355.6	*	11	FEB	1705	134	11.	2.0	1353.8	
11	FEB	0900	37	0.	0.0	1353.0	*	11	FEB	1305	86	61.	6.6	1355.6	*	11	FEB	1710	135	11.	1.9	1353.8	
11	FEB	0905	38	0.	0.0	1353.0	*	11	FEB	1310	87	58.	6.3	1355.5	*	11	FEB	1715	136	11.	1.9	1353.8	
11	FEB	0910	39	0.	0.0	1353.0	*	11	FEB	1315	88	55.	6.1	1355.4	*	11	FEB	1720	137	10.	1.9	1353.8	
11	FEB	0915	40	0.	0.1	1353.0	*	11	FEB	1320	89	53.	5.9	1355.3	*	11	FEB	1725	138	10.	1.9	1353.8	
11	FEB	0920	41	0.	0.1	1353.0	*	11	FEB	1325	90	50.	5.7	1355.2	*	11	FEB	1730	139	10.	1.8	1353.8	
11	FEB	0925	42	0.	0.1	1353.0	*	11	FEB	1330	91	48.	5.5	1355.2	*	11	FEB	1735	140	10.	1.8	1353.8	
11	FEB	0930	43	0.	0.1	1353.0	*	11	FEB	1335	92	45.	5.3	1355.1	*	11	FEB	1740	141	10.	1.8	1353.7	
11	FEB	0935	44	0.	0.1	1353.0	*	11	FEB	1340	93	43.	5.1	1355.0	*	11	FEB	1745	142	9.	1.8	1353.7	
11	FEB	0940	45	0.	0.1	1353.1	*	11	FEB	1345	94	41.	4.9	1355.0	*	11	FEB	1750	143	9.	1.7	1353.7	
11	FEB	0945	46	0.	0.1	1353.1	*	11	FEB	1350	95	39.	4.8	1354.9	*	11	FEB	1755	144	9.	1.7	1353.7	
11	FEB	0950	47	0.	0.2	1353.1	*	11	FEB	1355	96	37.	4.6	1354.8	*	11	FEB	1800	145	9.	1.7	1353.7	
11	FEB	0955	48	0.	0.2	1353.1	*	11	FEB	1400	97	36.	4.5	1354.8	*								
11	FEB	1000	49	0.	0.2	1353.1	*	11	FEB	1405	98	34.	4.3	1354.7	*								

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	12.00-HR
+ (CFS)	(HR)				
+ 78.	6.50	31.	16.	16.	16.
		(INCHES)	5.020	5.205	5.205
		(AC-FT)	16.	16.	16.
PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	12.00-HR
+ (AC-FT)	(HR)				
+ 8.	6.50	4.	2.	2.	2.
PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	12.00-HR

+ (FEET) (HR)
 1355.99 6.50 1354.55 1353.84 1353.84 1353.84

CUMULATIVE AREA = 0.06 SQ MI

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 * *
 26 KK * RRWEST * OFF SITE DRAINAGE - WEST PORTION OF REFLECTION RIDGE
 * *

11 IN TIME DATA FOR INPUT TIME SERIES
 JXMIN 30 TIME INTERVAL IN MINUTES
 JXDATE 11FEB93 STARTING DATE
 JXTIME 600 STARTING TIME

SUBBASIN RUNOFF DATA

27 BA SUBBASIN CHARACTERISTICS
 TAREA 0.08 SUBBASIN AREA

PRECIPITATION DATA

28 PB STORM 7.80 BASIN TOTAL PRECIPITATION

29 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06	0.06	0.06
0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

33 LS SCS LOSS RATE
 STRTL 0.90 INITIAL ABSTRACTION
 CRVNBR 69.00 CURVE NUMBER
 RTIMP 0.00 PERCENT IMPERVIOUS AREA

34 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG 0.40 LAG

UNIT HYDROGRAPH
 26 END-OF-PERIOD ORDINATES

8.	26.	54.	80.	90.	88.	76.	61.	42.	31.
23.	17.	12.	9.	7.	5.	4.	3.	2.	1.
1.	1.	1.	0.	0.	0.				

HYDROGRAPH AT STATION RRWEST

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
11	FEB	0600	1	0.00	0.00	0.00	0.	*	11	FEB	1205	74	0.11	0.03	0.08	144.
11	FEB	0605	2	0.02	0.02	0.00	0.	*	11	FEB	1210	75	0.11	0.03	0.09	164.
11	FEB	0610	3	0.02	0.02	0.00	0.	*	11	FEB	1215	76	0.11	0.03	0.09	169.
11	FEB	0615	4	0.02	0.02	0.00	0.	*	11	FEB	1220	77	0.11	0.03	0.09	161.
11	FEB	0620	5	0.02	0.02	0.00	0.	*	11	FEB	1225	78	0.11	0.02	0.09	145.
11	FEB	0625	6	0.02	0.02	0.00	0.	*	11	FEB	1230	79	0.11	0.02	0.09	126.
11	FEB	0630	7	0.02	0.02	0.00	0.	*	11	FEB	1235	80	0.06	0.01	0.05	108.
11	FEB	0635	8	0.02	0.02	0.00	0.	*	11	FEB	1240	81	0.06	0.01	0.05	92.

11 FEB 0640	9	0.02	0.02	0.00	0.	*	11 FEB 1245	82	0.06	0.01	0.05	80.
11 FEB 0645	10	0.02	0.02	0.00	0.	*	11 FEB 1250	83	0.06	0.01	0.05	69.
11 FEB 0650	11	0.02	0.02	0.00	0.	*	11 FEB 1255	84	0.06	0.01	0.05	60.
11 FEB 0655	12	0.02	0.02	0.00	0.	*	11 FEB 1300	85	0.06	0.01	0.05	53.
11 FEB 0700	13	0.02	0.02	0.00	0.	*	11 FEB 1305	86	0.04	0.01	0.03	46.
11 FEB 0705	14	0.02	0.02	0.00	0.	*	11 FEB 1310	87	0.04	0.01	0.03	41.
11 FEB 0710	15	0.02	0.02	0.00	0.	*	11 FEB 1315	88	0.04	0.01	0.03	37.
11 FEB 0715	16	0.02	0.02	0.00	0.	*	11 FEB 1320	89	0.04	0.01	0.03	34.
11 FEB 0720	17	0.02	0.02	0.00	0.	*	11 FEB 1325	90	0.04	0.01	0.03	31.
11 FEB 0725	18	0.02	0.02	0.00	0.	*	11 FEB 1330	91	0.04	0.01	0.03	29.
11 FEB 0730	19	0.02	0.02	0.00	0.	*	11 FEB 1335	92	0.03	0.01	0.03	27.
11 FEB 0735	20	0.02	0.02	0.00	0.	*	11 FEB 1340	93	0.03	0.01	0.03	25.
11 FEB 0740	21	0.02	0.02	0.00	0.	*	11 FEB 1345	94	0.03	0.01	0.03	24.
11 FEB 0745	22	0.02	0.02	0.00	0.	*	11 FEB 1350	95	0.03	0.01	0.03	22.
11 FEB 0750	23	0.02	0.02	0.00	0.	*	11 FEB 1355	96	0.03	0.01	0.03	21.
11 FEB 0755	24	0.02	0.02	0.00	0.	*	11 FEB 1400	97	0.03	0.01	0.03	20.
11 FEB 0800	25	0.02	0.02	0.00	0.	*	11 FEB 1405	98	0.02	0.00	0.02	19.
11 FEB 0805	26	0.02	0.02	0.00	0.	*	11 FEB 1410	99	0.02	0.00	0.02	18.
11 FEB 0810	27	0.02	0.02	0.00	0.	*	11 FEB 1415	100	0.02	0.00	0.02	18.
11 FEB 0815	28	0.02	0.02	0.00	0.	*	11 FEB 1420	101	0.02	0.00	0.02	17.
11 FEB 0820	29	0.02	0.02	0.00	0.	*	11 FEB 1425	102	0.02	0.00	0.02	16.
11 FEB 0825	30	0.02	0.02	0.00	0.	*	11 FEB 1430	103	0.02	0.00	0.02	15.
11 FEB 0830	31	0.02	0.02	0.00	0.	*	11 FEB 1435	104	0.02	0.00	0.02	14.
11 FEB 0835	32	0.02	0.02	0.00	0.	*	11 FEB 1440	105	0.02	0.00	0.02	14.
11 FEB 0840	33	0.02	0.02	0.00	0.	*	11 FEB 1445	106	0.02	0.00	0.02	13.
11 FEB 0845	34	0.02	0.02	0.00	0.	*	11 FEB 1450	107	0.02	0.00	0.02	13.
11 FEB 0850	35	0.02	0.02	0.00	0.	*	11 FEB 1455	108	0.02	0.00	0.02	13.
11 FEB 0855	36	0.02	0.02	0.00	0.	*	11 FEB 1500	109	0.02	0.00	0.02	13.
11 FEB 0900	37	0.02	0.02	0.00	0.	*	11 FEB 1505	110	0.02	0.00	0.02	13.
11 FEB 0905	38	0.02	0.02	0.00	0.	*	11 FEB 1510	111	0.02	0.00	0.02	13.
11 FEB 0910	39	0.02	0.02	0.00	0.	*	11 FEB 1515	112	0.02	0.00	0.02	12.
11 FEB 0915	40	0.02	0.02	0.00	0.	*	11 FEB 1520	113	0.02	0.00	0.02	12.
11 FEB 0920	41	0.02	0.02	0.00	0.	*	11 FEB 1525	114	0.02	0.00	0.02	12.
11 FEB 0925	42	0.02	0.02	0.00	0.	*	11 FEB 1530	115	0.02	0.00	0.02	12.
11 FEB 0930	43	0.02	0.02	0.00	0.	*	11 FEB 1535	116	0.02	0.00	0.02	12.
11 FEB 0935	44	0.03	0.03	0.00	0.	*	11 FEB 1540	117	0.02	0.00	0.02	12.
11 FEB 0940	45	0.03	0.03	0.00	0.	*	11 FEB 1545	118	0.02	0.00	0.02	12.
11 FEB 0945	46	0.03	0.03	0.00	0.	*	11 FEB 1550	119	0.02	0.00	0.02	12.
11 FEB 0950	47	0.03	0.03	0.00	0.	*	11 FEB 1555	120	0.02	0.00	0.02	12.
11 FEB 0955	48	0.03	0.03	0.00	0.	*	11 FEB 1600	121	0.02	0.00	0.02	12.
11 FEB 1000	49	0.03	0.03	0.00	0.	*	11 FEB 1605	122	0.02	0.00	0.01	12.
11 FEB 1005	50	0.04	0.03	0.00	0.	*	11 FEB 1610	123	0.02	0.00	0.01	12.
11 FEB 1010	51	0.04	0.03	0.00	0.	*	11 FEB 1615	124	0.02	0.00	0.01	12.
11 FEB 1015	52	0.04	0.03	0.00	0.	*	11 FEB 1620	125	0.02	0.00	0.01	11.
11 FEB 1020	53	0.04	0.03	0.00	0.	*	11 FEB 1625	126	0.02	0.00	0.01	11.
11 FEB 1025	54	0.04	0.03	0.00	0.	*	11 FEB 1630	127	0.02	0.00	0.01	10.
11 FEB 1030	55	0.04	0.03	0.00	1.	*	11 FEB 1635	128	0.02	0.00	0.01	10.
11 FEB 1035	56	0.05	0.04	0.01	1.	*	11 FEB 1640	129	0.02	0.00	0.01	9.
11 FEB 1040	57	0.05	0.04	0.01	1.	*	11 FEB 1645	130	0.02	0.00	0.01	9.
11 FEB 1045	58	0.05	0.04	0.01	2.	*	11 FEB 1650	131	0.02	0.00	0.01	9.
11 FEB 1050	59	0.05	0.04	0.01	2.	*	11 FEB 1655	132	0.02	0.00	0.01	9.
11 FEB 1055	60	0.05	0.04	0.01	3.	*	11 FEB 1700	133	0.02	0.00	0.01	9.
11 FEB 1100	61	0.05	0.04	0.01	3.	*	11 FEB 1705	134	0.02	0.00	0.01	9.
11 FEB 1105	62	0.07	0.06	0.02	4.	*	11 FEB 1710	135	0.02	0.00	0.01	9.
11 FEB 1110	63	0.07	0.06	0.02	4.	*	11 FEB 1715	136	0.02	0.00	0.01	8.
11 FEB 1115	64	0.07	0.06	0.02	5.	*	11 FEB 1720	137	0.02	0.00	0.01	8.
11 FEB 1120	65	0.07	0.05	0.02	6.	*	11 FEB 1725	138	0.02	0.00	0.01	8.
11 FEB 1125	66	0.07	0.05	0.02	7.	*	11 FEB 1730	139	0.02	0.00	0.01	8.
11 FEB 1130	67	0.07	0.05	0.02	9.	*	11 FEB 1735	140	0.01	0.00	0.01	8.
11 FEB 1135	68	0.59	0.36	0.23	12.	*	11 FEB 1740	141	0.01	0.00	0.01	8.
11 FEB 1140	69	0.59	0.29	0.30	19.	*	11 FEB 1745	142	0.01	0.00	0.01	8.
11 FEB 1145	70	0.59	0.25	0.34	33.	*	11 FEB 1750	143	0.01	0.00	0.01	8.
11 FEB 1150	71	0.59	0.21	0.38	55.	*	11 FEB 1755	144	0.01	0.00	0.01	7.
11 FEB 1155	72	0.59	0.18	0.41	84.	*	11 FEB 1800	145	0.01	0.00	0.01	7.
11 FEB 1200	73	0.59	0.16	0.43	115.	*						

TOTAL RAINFALL = 7.80, TOTAL LOSS = 3.62, TOTAL EXCESS = 4.18

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	12.00-HR
		(CFS)			
+ 169.	6.25	35.	18.	18.	18.
		(INCHES)			
		3.981	4.122	4.122	4.122
		(AC-FT)			
		18.	18.	18.	18.

CUMULATIVE AREA = 0.08 SQ MI

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 35 KK * PONDB *
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HYDROGRAPH ROUTING DATA

36 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1350.00 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

37 SA AREA 1.0 1.4

38 SE ELEVATION 1350.00 1352.50

39 SS SPILLWAY
 CREL 1350.00 SPILLWAY CREST ELEVATION
 SPWID 24.00 SPILLWAY WIDTH
 COCW 3.00 WEIR COEFFICIENT
 EXPW 1.50 EXPONENT OF HEAD

COMPUTED STORAGE-ELEVATION DATA

STORAGE 0.00 2.93
 ELEVATION 1350.00 1352.50

COMPUTED OUTFLOW-ELEVATION DATA

OUTFLOW	0.00	0.00	0.05	0.39	1.32	3.12	6.10	10.54	16.74	24.99
ELEVATION	1350.00	1350.00	1350.01	1350.03	1350.07	1350.12	1350.19	1350.28	1350.38	1350.49
OUTFLOW	35.58	48.80	64.95	84.33	107.21	133.91	164.70	199.89	239.76	284.60
ELEVATION	1350.63	1350.77	1350.93	1351.11	1351.30	1351.51	1351.74	1351.98	1352.23	1352.50

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.03	0.07	0.12	0.20	0.28	0.39	0.51	0.65	0.81
OUTFLOW	0.00	0.39	1.32	3.12	6.10	10.54	16.74	24.98	35.58	48.80
ELEVATION	1350.00	1350.03	1350.07	1350.12	1350.19	1350.28	1350.38	1350.49	1350.63	1350.77
STORAGE	0.99	1.19	1.42	1.67	1.94	2.24	2.57	2.93		
OUTFLOW	64.95	84.32	107.21	133.91	164.70	199.89	239.76	284.60		
ELEVATION	1350.93	1351.11	1351.30	1351.51	1351.74	1351.98	1352.23	1352.50		

HYDROGRAPH AT STATION PONDB

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
11	FEB	0600	1	0.	0.0	1350.0	*	11	FEB	1005	50	0.	0.0	1350.0	*	11	FEB	1410	99	21.	0.4	1350.4
11	FEB	0605	2	0.	0.0	1350.0	*	11	FEB	1010	51	0.	0.0	1350.0	*	11	FEB	1415	100	20.	0.4	1350.4
11	FEB	0610	3	0.	0.0	1350.0	*	11	FEB	1015	52	0.	0.0	1350.0	*	11	FEB	1420	101	19.	0.4	1350.4
11	FEB	0615	4	0.	0.0	1350.0	*	11	FEB	1020	53	0.	0.0	1350.0	*	11	FEB	1425	102	18.	0.4	1350.4
11	FEB	0620	5	0.	0.0	1350.0	*	11	FEB	1025	54	0.	0.0	1350.0	*	11	FEB	1430	103	17.	0.4	1350.4
11	FEB	0625	6	0.	0.0	1350.0	*	11	FEB	1030	55	0.	0.0	1350.0	*	11	FEB	1435	104	16.	0.4	1350.4
11	FEB	0630	7	0.	0.0	1350.0	*	11	FEB	1035	56	0.	0.0	1350.0	*	11	FEB	1440	105	15.	0.4	1350.4
11	FEB	0635	8	0.	0.0	1350.0	*	11	FEB	1040	57	0.	0.0	1350.0	*	11	FEB	1445	106	15.	0.4	1350.3
11	FEB	0640	9	0.	0.0	1350.0	*	11	FEB	1045	58	0.	0.0	1350.0	*	11	FEB	1450	107	14.	0.3	1350.3
11	FEB	0645	10	0.	0.0	1350.0	*	11	FEB	1050	59	1.	0.0	1350.0	*	11	FEB	1455	108	14.	0.3	1350.3
11	FEB	0650	11	0.	0.0	1350.0	*	11	FEB	1055	60	1.	0.0	1350.0	*	11	FEB	1500	109	13.	0.3	1350.3
11	FEB	0655	12	0.	0.0	1350.0	*	11	FEB	1100	61	1.	0.1	1350.1	*	11	FEB	1505	110	13.	0.3	1350.3
11	FEB	0700	13	0.	0.0	1350.0	*	11	FEB	1105	62	1.	0.1	1350.1	*	11	FEB	1510	111	13.	0.3	1350.3
11	FEB	0705	14	0.	0.0	1350.0	*	11	FEB	1110	63	2.	0.1	1350.1	*	11	FEB	1515	112	13.	0.3	1350.3
11	FEB	0710	15	0.	0.0	1350.0	*	11	FEB	1115	64	3.	0.1	1350.1	*	11	FEB	1520	113	13.	0.3	1350.3
11	FEB	0715	16	0.	0.0	1350.0	*	11	FEB	1120	65	3.	0.1	1350.1	*	11	FEB	1525	114	13.	0.3	1350.3

11 FEB 0720	17	0.	0.0	1350.0	*	11 FEB 1125	66	4.	0.1	1350.1	*	11 FEB 1530	115	13.	0.3	1350.3
11 FEB 0725	18	0.	0.0	1350.0	*	11 FEB 1130	67	5.	0.2	1350.2	*	11 FEB 1535	116	12.	0.3	1350.3
11 FEB 0730	19	0.	0.0	1350.0	*	11 FEB 1135	68	6.	0.2	1350.2	*	11 FEB 1540	117	12.	0.3	1350.3
11 FEB 0735	20	0.	0.0	1350.0	*	11 FEB 1140	69	9.	0.3	1350.2	*	11 FEB 1545	118	12.	0.3	1350.3
11 FEB 0740	21	0.	0.0	1350.0	*	11 FEB 1145	70	15.	0.3	1350.3	*	11 FEB 1550	119	12.	0.3	1350.3
11 FEB 0745	22	0.	0.0	1350.0	*	11 FEB 1150	71	25.	0.5	1350.5	*	11 FEB 1555	120	12.	0.3	1350.3
11 FEB 0750	23	0.	0.0	1350.0	*	11 FEB 1155	72	44.	0.8	1350.7	*	11 FEB 1600	121	12.	0.3	1350.3
11 FEB 0755	24	0.	0.0	1350.0	*	11 FEB 1200	73	70.	1.0	1351.0	*	11 FEB 1605	122	12.	0.3	1350.3
11 FEB 0800	25	0.	0.0	1350.0	*	11 FEB 1205	74	100.	1.4	1351.2	*	11 FEB 1610	123	12.	0.3	1350.3
11 FEB 0805	26	0.	0.0	1350.0	*	11 FEB 1210	75	129.	1.6	1351.5	*	11 FEB 1615	124	12.	0.3	1350.3
11 FEB 0810	27	0.	0.0	1350.0	*	11 FEB 1215	76	150.	1.8	1351.6	*	11 FEB 1620	125	12.	0.3	1350.3
11 FEB 0815	28	0.	0.0	1350.0	*	11 FEB 1220	77	158.	1.9	1351.7	*	11 FEB 1625	126	12.	0.3	1350.3
11 FEB 0820	29	0.	0.0	1350.0	*	11 FEB 1225	78	155.	1.9	1351.7	*	11 FEB 1630	127	11.	0.3	1350.3
11 FEB 0825	30	0.	0.0	1350.0	*	11 FEB 1230	79	144.	1.8	1351.6	*	11 FEB 1635	128	11.	0.3	1350.3
11 FEB 0830	31	0.	0.0	1350.0	*	11 FEB 1235	80	129.	1.6	1351.5	*	11 FEB 1640	129	10.	0.3	1350.3
11 FEB 0835	32	0.	0.0	1350.0	*	11 FEB 1240	81	113.	1.5	1351.4	*	11 FEB 1645	130	10.	0.3	1350.3
11 FEB 0840	33	0.	0.0	1350.0	*	11 FEB 1245	82	99.	1.3	1351.2	*	11 FEB 1650	131	10.	0.3	1350.3
11 FEB 0845	34	0.	0.0	1350.0	*	11 FEB 1250	83	86.	1.2	1351.1	*	11 FEB 1655	132	9.	0.3	1350.3
11 FEB 0850	35	0.	0.0	1350.0	*	11 FEB 1255	84	75.	1.1	1351.0	*	11 FEB 1700	133	9.	0.3	1350.3
11 FEB 0855	36	0.	0.0	1350.0	*	11 FEB 1300	85	66.	1.0	1350.9	*	11 FEB 1705	134	9.	0.3	1350.2
11 FEB 0900	37	0.	0.0	1350.0	*	11 FEB 1305	86	58.	0.9	1350.9	*	11 FEB 1710	135	9.	0.3	1350.2
11 FEB 0905	38	0.	0.0	1350.0	*	11 FEB 1310	87	51.	0.8	1350.8	*	11 FEB 1715	136	9.	0.2	1350.2
11 FEB 0910	39	0.	0.0	1350.0	*	11 FEB 1315	88	46.	0.8	1350.7	*	11 FEB 1720	137	9.	0.2	1350.2
11 FEB 0915	40	0.	0.0	1350.0	*	11 FEB 1320	89	41.	0.7	1350.7	*	11 FEB 1725	138	9.	0.2	1350.2
11 FEB 0920	41	0.	0.0	1350.0	*	11 FEB 1325	90	38.	0.7	1350.6	*	11 FEB 1730	139	9.	0.2	1350.2
11 FEB 0925	42	0.	0.0	1350.0	*	11 FEB 1330	91	34.	0.6	1350.6	*	11 FEB 1735	140	9.	0.2	1350.2
11 FEB 0930	43	0.	0.0	1350.0	*	11 FEB 1335	92	32.	0.6	1350.6	*	11 FEB 1740	141	8.	0.2	1350.2
11 FEB 0935	44	0.	0.0	1350.0	*	11 FEB 1340	93	29.	0.6	1350.5	*	11 FEB 1745	142	8.	0.2	1350.2
11 FEB 0940	45	0.	0.0	1350.0	*	11 FEB 1345	94	27.	0.5	1350.5	*	11 FEB 1750	143	8.	0.2	1350.2
11 FEB 0945	46	0.	0.0	1350.0	*	11 FEB 1350	95	26.	0.5	1350.5	*	11 FEB 1755	144	8.	0.2	1350.2
11 FEB 0950	47	0.	0.0	1350.0	*	11 FEB 1355	96	24.	0.5	1350.5	*	11 FEB 1800	145	8.	0.2	1350.2
11 FEB 0955	48	0.	0.0	1350.0	*	11 FEB 1400	97	23.	0.5	1350.5	*					
11 FEB 1000	49	0.	0.0	1350.0	*	11 FEB 1405	98	22.	0.5	1350.4	*					

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	12.00-HR
		(CFS)			
+ 158.	6.33	35.	18.	18.	18.
		(INCHES)	3.970	4.072	4.072
		(AC-FT)	18.	18.	18.

PEAK STORAGE + (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	12.00-HR
+ 2.	6.33	1.	0.	0.	0.

PEAK STAGE + (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	12.00-HR
+ 1351.69	6.33	1350.56	1350.29	1350.29	1350.29

CUMULATIVE AREA = 0.08 SQ MI

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*                               *
40 KK * WEST * PART OF KASTEN'S PROP. - 1/4 AC. RES. LOTS. DRAINS TO TYLER
*                               *
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11 IN      TIME DATA FOR INPUT TIME SERIES
          JXMIN      30 TIME INTERVAL IN MINUTES
          JXDATE    11FEB93 STARTING DATE
          JXTIME    600  STARTING TIME
    
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SUBBASIN RUNOFF DATA

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41 BA      SUBBASIN CHARACTERISTICS
          TAREA    0.01 SUBBASIN AREA
    
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PRECIPITATION DATA

42 PB STORM 7.80 BASIN TOTAL PRECIPITATION

43 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06	0.06	0.06
0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

47 LS SCS LOSS RATE
 STRTL 0.41 INITIAL ABSTRACTION
 CRVNR 83.00 CURVE NUMBER
 RTIMP 0.00 PERCENT IMPERVIOUS AREA

48 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG 0.25 LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
 17 END-OF-PERIOD ORDINATES

4.	15.	23.	23.	18.	11.	7.	4.	3.	2.
1.	1.	0.	0.	0.	0.	0.			

HYDROGRAPH AT STATION WEST

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
11	FEB	0600	1	0.00	0.00	0.00	0.	*	11	FEB	1205	74	0.11	0.01	0.10	50.
11	FEB	0605	2	0.02	0.02	0.00	0.	*	11	FEB	1210	75	0.11	0.01	0.10	46.
11	FEB	0610	3	0.02	0.02	0.00	0.	*	11	FEB	1215	76	0.11	0.01	0.10	39.
11	FEB	0615	4	0.02	0.02	0.00	0.	*	11	FEB	1220	77	0.11	0.01	0.10	30.
11	FEB	0620	5	0.02	0.02	0.00	0.	*	11	FEB	1225	78	0.11	0.01	0.10	23.
11	FEB	0625	6	0.02	0.02	0.00	0.	*	11	FEB	1230	79	0.11	0.01	0.10	19.
11	FEB	0630	7	0.02	0.02	0.00	0.	*	11	FEB	1235	80	0.06	0.00	0.05	16.
11	FEB	0635	8	0.02	0.02	0.00	0.	*	11	FEB	1240	81	0.06	0.00	0.05	14.
11	FEB	0640	9	0.02	0.02	0.00	0.	*	11	FEB	1245	82	0.06	0.00	0.05	11.
11	FEB	0645	10	0.02	0.02	0.00	0.	*	11	FEB	1250	83	0.06	0.00	0.05	10.
11	FEB	0650	11	0.02	0.02	0.00	0.	*	11	FEB	1255	84	0.06	0.00	0.05	8.
11	FEB	0655	12	0.02	0.02	0.00	0.	*	11	FEB	1300	85	0.06	0.00	0.05	7.
11	FEB	0700	13	0.02	0.02	0.00	0.	*	11	FEB	1305	86	0.04	0.00	0.04	7.
11	FEB	0705	14	0.02	0.02	0.00	0.	*	11	FEB	1310	87	0.04	0.00	0.04	6.
11	FEB	0710	15	0.02	0.02	0.00	0.	*	11	FEB	1315	88	0.04	0.00	0.04	6.
11	FEB	0715	16	0.02	0.02	0.00	0.	*	11	FEB	1320	89	0.04	0.00	0.04	5.
11	FEB	0720	17	0.02	0.02	0.00	0.	*	11	FEB	1325	90	0.04	0.00	0.04	5.
11	FEB	0725	18	0.02	0.02	0.00	0.	*	11	FEB	1330	91	0.04	0.00	0.04	5.
11	FEB	0730	19	0.02	0.02	0.00	0.	*	11	FEB	1335	92	0.03	0.00	0.03	5.
11	FEB	0735	20	0.02	0.02	0.00	0.	*	11	FEB	1340	93	0.03	0.00	0.03	4.
11	FEB	0740	21	0.02	0.02	0.00	0.	*	11	FEB	1345	94	0.03	0.00	0.03	4.
11	FEB	0745	22	0.02	0.02	0.00	0.	*	11	FEB	1350	95	0.03	0.00	0.03	4.
11	FEB	0750	23	0.02	0.02	0.00	0.	*	11	FEB	1355	96	0.03	0.00	0.03	4.
11	FEB	0755	24	0.02	0.02	0.00	0.	*	11	FEB	1400	97	0.03	0.00	0.03	4.
11	FEB	0800	25	0.02	0.02	0.00	0.	*	11	FEB	1405	98	0.02	0.00	0.02	4.
11	FEB	0805	26	0.02	0.02	0.00	0.	*	11	FEB	1410	99	0.02	0.00	0.02	3.
11	FEB	0810	27	0.02	0.02	0.00	0.	*	11	FEB	1415	100	0.02	0.00	0.02	3.
11	FEB	0815	28	0.02	0.02	0.00	0.	*	11	FEB	1420	101	0.02	0.00	0.02	3.
11	FEB	0820	29	0.02	0.02	0.00	0.	*	11	FEB	1425	102	0.02	0.00	0.02	3.
11	FEB	0825	30	0.02	0.02	0.00	0.	*	11	FEB	1430	103	0.02	0.00	0.02	3.
11	FEB	0830	31	0.02	0.02	0.00	0.	*	11	FEB	1435	104	0.02	0.00	0.02	3.
11	FEB	0835	32	0.02	0.02	0.00	0.	*	11	FEB	1440	105	0.02	0.00	0.02	3.
11	FEB	0840	33	0.02	0.02	0.00	0.	*	11	FEB	1445	106	0.02	0.00	0.02	3.
11	FEB	0845	34	0.02	0.02	0.00	0.	*	11	FEB	1450	107	0.02	0.00	0.02	3.
11	FEB	0850	35	0.02	0.02	0.00	0.	*	11	FEB	1455	108	0.02	0.00	0.02	2.
11	FEB	0855	36	0.02	0.02	0.00	0.	*	11	FEB	1500	109	0.02	0.00	0.02	2.

11 FEB 0900	37	0.02	0.02	0.00	0.	*	11 FEB 1505	110	0.02	0.00	0.02	2.
11 FEB 0905	38	0.02	0.02	0.00	0.	*	11 FEB 1510	111	0.02	0.00	0.02	2.
11 FEB 0910	39	0.02	0.02	0.01	0.	*	11 FEB 1515	112	0.02	0.00	0.02	2.
11 FEB 0915	40	0.02	0.02	0.01	0.	*	11 FEB 1520	113	0.02	0.00	0.02	2.
11 FEB 0920	41	0.02	0.02	0.01	0.	*	11 FEB 1525	114	0.02	0.00	0.02	2.
11 FEB 0925	42	0.02	0.02	0.01	1.	*	11 FEB 1530	115	0.02	0.00	0.02	2.
11 FEB 0930	43	0.02	0.02	0.01	1.	*	11 FEB 1535	116	0.02	0.00	0.02	2.
11 FEB 0935	44	0.03	0.02	0.01	1.	*	11 FEB 1540	117	0.02	0.00	0.02	2.
11 FEB 0940	45	0.03	0.02	0.01	1.	*	11 FEB 1545	118	0.02	0.00	0.02	2.
11 FEB 0945	46	0.03	0.02	0.01	1.	*	11 FEB 1550	119	0.02	0.00	0.02	2.
11 FEB 0950	47	0.03	0.02	0.01	1.	*	11 FEB 1555	120	0.02	0.00	0.02	2.
11 FEB 0955	48	0.03	0.02	0.01	1.	*	11 FEB 1600	121	0.02	0.00	0.02	2.
11 FEB 1000	49	0.03	0.02	0.01	1.	*	11 FEB 1605	122	0.02	0.00	0.01	2.
11 FEB 1005	50	0.04	0.02	0.01	1.	*	11 FEB 1610	123	0.02	0.00	0.01	2.
11 FEB 1010	51	0.04	0.02	0.01	1.	*	11 FEB 1615	124	0.02	0.00	0.01	2.
11 FEB 1015	52	0.04	0.02	0.01	1.	*	11 FEB 1620	125	0.02	0.00	0.01	2.
11 FEB 1020	53	0.04	0.02	0.02	1.	*	11 FEB 1625	126	0.02	0.00	0.01	2.
11 FEB 1025	54	0.04	0.02	0.02	1.	*	11 FEB 1630	127	0.02	0.00	0.01	2.
11 FEB 1030	55	0.04	0.02	0.02	2.	*	11 FEB 1635	128	0.02	0.00	0.01	2.
11 FEB 1035	56	0.05	0.03	0.02	2.	*	11 FEB 1640	129	0.02	0.00	0.01	2.
11 FEB 1040	57	0.05	0.02	0.02	2.	*	11 FEB 1645	130	0.02	0.00	0.01	2.
11 FEB 1045	58	0.05	0.02	0.02	2.	*	11 FEB 1650	131	0.02	0.00	0.01	2.
11 FEB 1050	59	0.05	0.02	0.03	2.	*	11 FEB 1655	132	0.02	0.00	0.01	2.
11 FEB 1055	60	0.05	0.02	0.03	2.	*	11 FEB 1700	133	0.02	0.00	0.01	2.
11 FEB 1100	61	0.05	0.02	0.03	3.	*	11 FEB 1705	134	0.02	0.00	0.01	2.
11 FEB 1105	62	0.07	0.03	0.04	3.	*	11 FEB 1710	135	0.02	0.00	0.01	2.
11 FEB 1110	63	0.07	0.03	0.04	3.	*	11 FEB 1715	136	0.02	0.00	0.01	2.
11 FEB 1115	64	0.07	0.03	0.05	4.	*	11 FEB 1720	137	0.02	0.00	0.01	2.
11 FEB 1120	65	0.07	0.03	0.05	4.	*	11 FEB 1725	138	0.02	0.00	0.01	2.
11 FEB 1125	66	0.07	0.03	0.05	4.	*	11 FEB 1730	139	0.02	0.00	0.01	2.
11 FEB 1130	67	0.07	0.03	0.05	5.	*	11 FEB 1735	140	0.01	0.00	0.01	2.
11 FEB 1135	68	0.59	0.17	0.42	7.	*	11 FEB 1740	141	0.01	0.00	0.01	2.
11 FEB 1140	69	0.59	0.13	0.46	12.	*	11 FEB 1745	142	0.01	0.00	0.01	1.
11 FEB 1145	70	0.59	0.10	0.49	22.	*	11 FEB 1750	143	0.01	0.00	0.01	1.
11 FEB 1150	71	0.59	0.08	0.51	32.	*	11 FEB 1755	144	0.01	0.00	0.01	1.
11 FEB 1155	72	0.59	0.06	0.53	41.	*	11 FEB 1800	145	0.01	0.00	0.01	1.
11 FEB 1200	73	0.59	0.05	0.54	47.	*						

TOTAL RAINFALL = 7.80, TOTAL LOSS = 2.01, TOTAL EXCESS = 5.79

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	12.00-HR	
+ 50.	6.08	8.	4.	4.	4.	
		(INCHES)	5.355	5.749	5.749	5.749
		(AC-FT)	4.	4.	4.	4.

CUMULATIVE AREA = 0.01 SQ MI

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* *
49 KK * BASIN1 *
* *

11 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 30 TIME INTERVAL IN MINUTES
JXDATE 11FEB93 STARTING DATE
JXTIME 600 STARTING TIME

SUBBASIN RUNOFF DATA

50 BA SUBBASIN CHARACTERISTICS
TAREA 0.00 SUBBASIN AREA

PRECIPITATION DATA

51 PB STORM 7.80 BASIN TOTAL PRECIPITATION

52 PI INCREMENTAL PRECIPITATION PATTERN
0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00

11 FEB 0920	41	0.02	0.02	0.00	0.	*	11 FEB 1525	114	0.02	0.00	0.02	1.
11 FEB 0925	42	0.02	0.02	0.00	0.	*	11 FEB 1530	115	0.02	0.00	0.02	1.
11 FEB 0930	43	0.02	0.02	0.00	0.	*	11 FEB 1535	116	0.02	0.00	0.02	1.
11 FEB 0935	44	0.03	0.02	0.00	0.	*	11 FEB 1540	117	0.02	0.00	0.02	1.
11 FEB 0940	45	0.03	0.02	0.01	0.	*	11 FEB 1545	118	0.02	0.00	0.02	1.
11 FEB 0945	46	0.03	0.02	0.01	0.	*	11 FEB 1550	119	0.02	0.00	0.02	1.
11 FEB 0950	47	0.03	0.02	0.01	0.	*	11 FEB 1555	120	0.02	0.00	0.02	1.
11 FEB 0955	48	0.03	0.02	0.01	0.	*	11 FEB 1600	121	0.02	0.00	0.02	1.
11 FEB 1000	49	0.03	0.02	0.01	0.	*	11 FEB 1605	122	0.02	0.00	0.01	1.
11 FEB 1005	50	0.04	0.03	0.01	0.	*	11 FEB 1610	123	0.02	0.00	0.01	1.
11 FEB 1010	51	0.04	0.03	0.01	0.	*	11 FEB 1615	124	0.02	0.00	0.01	1.
11 FEB 1015	52	0.04	0.03	0.01	0.	*	11 FEB 1620	125	0.02	0.00	0.01	1.
11 FEB 1020	53	0.04	0.02	0.01	0.	*	11 FEB 1625	126	0.02	0.00	0.01	1.
11 FEB 1025	54	0.04	0.02	0.01	0.	*	11 FEB 1630	127	0.02	0.00	0.01	1.
11 FEB 1030	55	0.04	0.02	0.01	0.	*	11 FEB 1635	128	0.02	0.00	0.01	1.
11 FEB 1035	56	0.05	0.03	0.02	0.	*	11 FEB 1640	129	0.02	0.00	0.01	1.
11 FEB 1040	57	0.05	0.03	0.02	0.	*	11 FEB 1645	130	0.02	0.00	0.01	1.
11 FEB 1045	58	0.05	0.03	0.02	0.	*	11 FEB 1650	131	0.02	0.00	0.01	1.
11 FEB 1050	59	0.05	0.03	0.02	1.	*	11 FEB 1655	132	0.02	0.00	0.01	1.
11 FEB 1055	60	0.05	0.03	0.02	1.	*	11 FEB 1700	133	0.02	0.00	0.01	1.
11 FEB 1100	61	0.05	0.03	0.02	1.	*	11 FEB 1705	134	0.02	0.00	0.01	1.
11 FEB 1105	62	0.07	0.04	0.03	1.	*	11 FEB 1710	135	0.02	0.00	0.01	1.
11 FEB 1110	63	0.07	0.04	0.04	1.	*	11 FEB 1715	136	0.02	0.00	0.01	1.
11 FEB 1115	64	0.07	0.04	0.04	1.	*	11 FEB 1720	137	0.02	0.00	0.01	1.
11 FEB 1120	65	0.07	0.04	0.04	1.	*	11 FEB 1725	138	0.02	0.00	0.01	1.
11 FEB 1125	66	0.07	0.03	0.04	1.	*	11 FEB 1730	139	0.02	0.00	0.01	1.
11 FEB 1130	67	0.07	0.03	0.04	1.	*	11 FEB 1735	140	0.01	0.00	0.01	1.
11 FEB 1135	68	0.59	0.23	0.37	2.	*	11 FEB 1740	141	0.01	0.00	0.01	0.
11 FEB 1140	69	0.59	0.17	0.42	3.	*	11 FEB 1745	142	0.01	0.00	0.01	0.
11 FEB 1145	70	0.59	0.14	0.45	6.	*	11 FEB 1750	143	0.01	0.00	0.01	0.
11 FEB 1150	71	0.59	0.11	0.48	9.	*	11 FEB 1755	144	0.01	0.00	0.01	0.
11 FEB 1155	72	0.59	0.09	0.50	12.	*	11 FEB 1800	145	0.01	0.00	0.01	0.
11 FEB 1200	73	0.59	0.08	0.51	14.	*						

TOTAL RAINFALL = 7.80, TOTAL LOSS = 2.48, TOTAL EXCESS = 5.32

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	12.00-HR	
+ 15.	6.08	3.	1.	1.	1.	
		(INCHES)	4.972	5.285	5.285	5.285
		(AC-FT)	1.	1.	1.	1.

CUMULATIVE AREA = 0.00 SQ MI

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58 KK * BASIN2 *
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11 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 30 TIME INTERVAL IN MINUTES
JXDATE 11FEB93 STARTING DATE
JXTIME 600 STARTING TIME

SUBBASIN RUNOFF DATA

59 BA SUBBASIN CHARACTERISTICS
TAREA 0.06 SUBBASIN AREA

PRECIPITATION DATA

60 PB STORM 7.80 BASIN TOTAL PRECIPITATION

61 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06	0.06	0.06
0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

65 LS SCS LOSS RATE
 STRTL 0.47 INITIAL ABSTRACTION
 CRVNER 81.00 CURVE NUMBER
 RTIMP 0.00 PERCENT IMPERVIOUS AREA

66 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG 0.25 LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
 17 END-OF-PERIOD ORDINATES

17.	58.	92.	92.	72.	43.	27.	17.	11.	7.
4.	3.	2.	1.	1.	0.	0.			

HYDROGRAPH AT STATION BASIN2

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP Q
11	FEB	0600	1	0.00	0.00	0.00	0.	*	11	FEB	1205	74	0.11	0.01	0.10	191.
11	FEB	0605	2	0.02	0.02	0.00	0.	*	11	FEB	1210	75	0.11	0.01	0.10	179.
11	FEB	0610	3	0.02	0.02	0.00	0.	*	11	FEB	1215	76	0.11	0.01	0.10	149.
11	FEB	0615	4	0.02	0.02	0.00	0.	*	11	FEB	1220	77	0.11	0.01	0.10	115.
11	FEB	0620	5	0.02	0.02	0.00	0.	*	11	FEB	1225	78	0.11	0.01	0.10	89.
11	FEB	0625	6	0.02	0.02	0.00	0.	*	11	FEB	1230	79	0.11	0.01	0.10	73.
11	FEB	0630	7	0.02	0.02	0.00	0.	*	11	FEB	1235	80	0.06	0.00	0.05	62.
11	FEB	0635	8	0.02	0.02	0.00	0.	*	11	FEB	1240	81	0.06	0.00	0.05	53.
11	FEB	0640	9	0.02	0.02	0.00	0.	*	11	FEB	1245	82	0.06	0.00	0.05	44.
11	FEB	0645	10	0.02	0.02	0.00	0.	*	11	FEB	1250	83	0.06	0.00	0.05	37.
11	FEB	0650	11	0.02	0.02	0.00	0.	*	11	FEB	1255	84	0.06	0.00	0.05	32.
11	FEB	0655	12	0.02	0.02	0.00	0.	*	11	FEB	1300	85	0.06	0.00	0.05	29.
11	FEB	0700	13	0.02	0.02	0.00	0.	*	11	FEB	1305	86	0.04	0.00	0.04	27.
11	FEB	0705	14	0.02	0.02	0.00	0.	*	11	FEB	1310	87	0.04	0.00	0.04	25.
11	FEB	0710	15	0.02	0.02	0.00	0.	*	11	FEB	1315	88	0.04	0.00	0.04	22.
11	FEB	0715	16	0.02	0.02	0.00	0.	*	11	FEB	1320	89	0.04	0.00	0.04	21.
11	FEB	0720	17	0.02	0.02	0.00	0.	*	11	FEB	1325	90	0.04	0.00	0.04	19.
11	FEB	0725	18	0.02	0.02	0.00	0.	*	11	FEB	1330	91	0.04	0.00	0.04	19.
11	FEB	0730	19	0.02	0.02	0.00	0.	*	11	FEB	1335	92	0.03	0.00	0.03	18.
11	FEB	0735	20	0.02	0.02	0.00	0.	*	11	FEB	1340	93	0.03	0.00	0.03	17.
11	FEB	0740	21	0.02	0.02	0.00	0.	*	11	FEB	1345	94	0.03	0.00	0.03	16.
11	FEB	0745	22	0.02	0.02	0.00	0.	*	11	FEB	1350	95	0.03	0.00	0.03	15.
11	FEB	0750	23	0.02	0.02	0.00	0.	*	11	FEB	1355	96	0.03	0.00	0.03	15.
11	FEB	0755	24	0.02	0.02	0.00	0.	*	11	FEB	1400	97	0.03	0.00	0.03	14.
11	FEB	0800	25	0.02	0.02	0.00	0.	*	11	FEB	1405	98	0.02	0.00	0.02	14.
11	FEB	0805	26	0.02	0.02	0.00	0.	*	11	FEB	1410	99	0.02	0.00	0.02	13.
11	FEB	0810	27	0.02	0.02	0.00	0.	*	11	FEB	1415	100	0.02	0.00	0.02	12.
11	FEB	0815	28	0.02	0.02	0.00	0.	*	11	FEB	1420	101	0.02	0.00	0.02	11.
11	FEB	0820	29	0.02	0.02	0.00	0.	*	11	FEB	1425	102	0.02	0.00	0.02	11.
11	FEB	0825	30	0.02	0.02	0.00	0.	*	11	FEB	1430	103	0.02	0.00	0.02	10.
11	FEB	0830	31	0.02	0.02	0.00	0.	*	11	FEB	1435	104	0.02	0.00	0.02	10.
11	FEB	0835	32	0.02	0.02	0.00	0.	*	11	FEB	1440	105	0.02	0.00	0.02	10.
11	FEB	0840	33	0.02	0.02	0.00	0.	*	11	FEB	1445	106	0.02	0.00	0.02	10.
11	FEB	0845	34	0.02	0.02	0.00	0.	*	11	FEB	1450	107	0.02	0.00	0.02	10.
11	FEB	0850	35	0.02	0.02	0.00	0.	*	11	FEB	1455	108	0.02	0.00	0.02	10.
11	FEB	0855	36	0.02	0.02	0.00	0.	*	11	FEB	1500	109	0.02	0.00	0.02	10.
11	FEB	0900	37	0.02	0.02	0.00	1.	*	11	FEB	1505	110	0.02	0.00	0.02	10.
11	FEB	0905	38	0.02	0.02	0.00	1.	*	11	FEB	1510	111	0.02	0.00	0.02	10.
11	FEB	0910	39	0.02	0.02	0.00	1.	*	11	FEB	1515	112	0.02	0.00	0.02	10.
11	FEB	0915	40	0.02	0.02	0.00	1.	*	11	FEB	1520	113	0.02	0.00	0.02	10.
11	FEB	0920	41	0.02	0.02	0.00	1.	*	11	FEB	1525	114	0.02	0.00	0.02	10.
11	FEB	0925	42	0.02	0.02	0.00	2.	*	11	FEB	1530	115	0.02	0.00	0.02	10.
11	FEB	0930	43	0.02	0.02	0.01	2.	*	11	FEB	1535	116	0.02	0.00	0.02	10.
11	FEB	0935	44	0.03	0.02	0.01	2.	*	11	FEB	1540	117	0.02	0.00	0.02	10.

11 FEB 0940	45	0.03	0.02	0.01	2.	*	11 FEB 1545	118	0.02	0.00	0.02	10.
11 FEB 0945	46	0.03	0.02	0.01	2.	*	11 FEB 1550	119	0.02	0.00	0.02	10.
11 FEB 0950	47	0.03	0.02	0.01	3.	*	11 FEB 1555	120	0.02	0.00	0.02	10.
11 FEB 0955	48	0.03	0.02	0.01	3.	*	11 FEB 1600	121	0.02	0.00	0.02	10.
11 FEB 1000	49	0.03	0.02	0.01	3.	*	11 FEB 1605	122	0.02	0.00	0.01	10.
11 FEB 1005	50	0.04	0.02	0.01	3.	*	11 FEB 1610	123	0.02	0.00	0.01	9.
11 FEB 1010	51	0.04	0.02	0.01	4.	*	11 FEB 1615	124	0.02	0.00	0.01	9.
11 FEB 1015	52	0.04	0.02	0.01	4.	*	11 FEB 1620	125	0.02	0.00	0.01	8.
11 FEB 1020	53	0.04	0.02	0.01	5.	*	11 FEB 1625	126	0.02	0.00	0.01	7.
11 FEB 1025	54	0.04	0.02	0.01	5.	*	11 FEB 1630	127	0.02	0.00	0.01	7.
11 FEB 1030	55	0.04	0.02	0.01	5.	*	11 FEB 1635	128	0.02	0.00	0.01	7.
11 FEB 1035	56	0.05	0.03	0.02	6.	*	11 FEB 1640	129	0.02	0.00	0.01	7.
11 FEB 1040	57	0.05	0.03	0.02	6.	*	11 FEB 1645	130	0.02	0.00	0.01	7.
11 FEB 1045	58	0.05	0.03	0.02	7.	*	11 FEB 1650	131	0.02	0.00	0.01	7.
11 FEB 1050	59	0.05	0.03	0.02	8.	*	11 FEB 1655	132	0.02	0.00	0.01	7.
11 FEB 1055	60	0.05	0.03	0.02	9.	*	11 FEB 1700	133	0.02	0.00	0.01	7.
11 FEB 1100	61	0.05	0.02	0.02	9.	*	11 FEB 1705	134	0.02	0.00	0.01	7.
11 FEB 1105	62	0.07	0.04	0.04	10.	*	11 FEB 1710	135	0.02	0.00	0.01	7.
11 FEB 1110	63	0.07	0.03	0.04	11.	*	11 FEB 1715	136	0.02	0.00	0.01	7.
11 FEB 1115	64	0.07	0.03	0.04	13.	*	11 FEB 1720	137	0.02	0.00	0.01	7.
11 FEB 1120	65	0.07	0.03	0.04	15.	*	11 FEB 1725	138	0.02	0.00	0.01	7.
11 FEB 1125	66	0.07	0.03	0.04	16.	*	11 FEB 1730	139	0.02	0.00	0.01	7.
11 FEB 1130	67	0.07	0.03	0.05	17.	*	11 FEB 1735	140	0.01	0.00	0.01	6.
11 FEB 1135	68	0.59	0.20	0.39	24.	*	11 FEB 1740	141	0.01	0.00	0.01	6.
11 FEB 1140	69	0.59	0.15	0.44	46.	*	11 FEB 1745	142	0.01	0.00	0.01	6.
11 FEB 1145	70	0.59	0.12	0.47	82.	*	11 FEB 1750	143	0.01	0.00	0.01	5.
11 FEB 1150	71	0.59	0.10	0.50	121.	*	11 FEB 1755	144	0.01	0.00	0.01	5.
11 FEB 1155	72	0.59	0.08	0.51	155.	*	11 FEB 1800	145	0.01	0.00	0.01	4.
11 FEB 1200	73	0.59	0.07	0.52	180.	*						

TOTAL RAINFALL = 7.80, TOTAL LOSS = 2.25, TOTAL EXCESS = 5.55

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	12.00-HR	
191.	6.08	32.	17.	17.	17.	
		(INCHES)	5.165	5.516	5.516	5.516
		(AC-FT)	16.	17.	17.	17.

CUMULATIVE AREA = 0.06 SQ MI

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67 KK * INTO2 *
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68 HC HYDROGRAPH COMBINATION
ICOMP 5 NUMBER OF HYDROGRAPHS TO COMBINE

HYDROGRAPH AT STATION INTO2
SUM OF 5 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
11	FEB	0600	1	0.	*	11	FEB	0905	38	1.	*	11	FEB	1210	75	428.	*	11	FEB	1515	112	45.	*
11	FEB	0605	2	0.	*	11	FEB	0910	39	1.	*	11	FEB	1215	76	417.	*	11	FEB	1520	113	44.	*
11	FEB	0610	3	0.	*	11	FEB	0915	40	2.	*	11	FEB	1220	77	387.	*	11	FEB	1525	114	44.	*
11	FEB	0615	4	0.	*	11	FEB	0920	41	2.	*	11	FEB	1225	78	351.	*	11	FEB	1530	115	43.	*
11	FEB	0620	5	0.	*	11	FEB	0925	42	2.	*	11	FEB	1230	79	319.	*	11	FEB	1535	116	43.	*
11	FEB	0625	6	0.	*	11	FEB	0930	43	3.	*	11	FEB	1235	80	289.	*	11	FEB	1540	117	42.	*
11	FEB	0630	7	0.	*	11	FEB	0935	44	3.	*	11	FEB	1240	81	259.	*	11	FEB	1545	118	42.	*
11	FEB	0635	8	0.	*	11	FEB	0940	45	3.	*	11	FEB	1245	82	231.	*	11	FEB	1550	119	41.	*
11	FEB	0640	9	0.	*	11	FEB	0945	46	4.	*	11	FEB	1250	83	206.	*	11	FEB	1555	120	41.	*
11	FEB	0645	10	0.	*	11	FEB	0950	47	4.	*	11	FEB	1255	84	185.	*	11	FEB	1600	121	41.	*

11 FEB 0650	11	0.	*	11 FEB 0955	48	4.	*	11 FEB 1300	85	169.	*	11 FEB 1605	122	40.
11 FEB 0655	12	0.	*	11 FEB 1000	49	5.	*	11 FEB 1305	86	155.	*	11 FEB 1610	123	39.
11 FEB 0700	13	0.	*	11 FEB 1005	50	5.	*	11 FEB 1310	87	142.	*	11 FEB 1615	124	38.
11 FEB 0705	14	0.	*	11 FEB 1010	51	6.	*	11 FEB 1315	88	131.	*	11 FEB 1620	125	37.
11 FEB 0710	15	0.	*	11 FEB 1015	52	6.	*	11 FEB 1320	89	122.	*	11 FEB 1625	126	35.
11 FEB 0715	16	0.	*	11 FEB 1020	53	7.	*	11 FEB 1325	90	113.	*	11 FEB 1630	127	34.
11 FEB 0720	17	0.	*	11 FEB 1025	54	8.	*	11 FEB 1330	91	107.	*	11 FEB 1635	128	33.
11 FEB 0725	18	0.	*	11 FEB 1030	55	8.	*	11 FEB 1335	92	101.	*	11 FEB 1640	129	32.
11 FEB 0730	19	0.	*	11 FEB 1035	56	9.	*	11 FEB 1340	93	96.	*	11 FEB 1645	130	31.
11 FEB 0735	20	0.	*	11 FEB 1040	57	10.	*	11 FEB 1345	94	90.	*	11 FEB 1650	131	30.
11 FEB 0740	21	0.	*	11 FEB 1045	58	11.	*	11 FEB 1350	95	85.	*	11 FEB 1655	132	30.
11 FEB 0745	22	0.	*	11 FEB 1050	59	13.	*	11 FEB 1355	96	81.	*	11 FEB 1700	133	29.
11 FEB 0750	23	0.	*	11 FEB 1055	60	14.	*	11 FEB 1400	97	78.	*	11 FEB 1705	134	29.
11 FEB 0755	24	0.	*	11 FEB 1100	61	16.	*	11 FEB 1405	98	74.	*	11 FEB 1710	135	28.
11 FEB 0800	25	0.	*	11 FEB 1105	62	17.	*	11 FEB 1410	99	71.	*	11 FEB 1715	136	28.
11 FEB 0805	26	0.	*	11 FEB 1110	63	20.	*	11 FEB 1415	100	67.	*	11 FEB 1720	137	28.
11 FEB 0810	27	0.	*	11 FEB 1115	64	23.	*	11 FEB 1420	101	64.	*	11 FEB 1725	138	28.
11 FEB 0815	28	0.	*	11 FEB 1120	65	27.	*	11 FEB 1425	102	61.	*	11 FEB 1730	139	27.
11 FEB 0820	29	0.	*	11 FEB 1125	66	30.	*	11 FEB 1430	103	58.	*	11 FEB 1735	140	27.
11 FEB 0825	30	0.	*	11 FEB 1130	67	33.	*	11 FEB 1435	104	56.	*	11 FEB 1740	141	26.
11 FEB 0830	31	0.	*	11 FEB 1135	68	44.	*	11 FEB 1440	105	54.	*	11 FEB 1745	142	25.
11 FEB 0835	32	0.	*	11 FEB 1140	69	78.	*	11 FEB 1445	106	52.	*	11 FEB 1750	143	24.
11 FEB 0840	33	0.	*	11 FEB 1145	70	135.	*	11 FEB 1450	107	50.	*	11 FEB 1755	144	23.
11 FEB 0845	34	0.	*	11 FEB 1150	71	203.	*	11 FEB 1455	108	49.	*	11 FEB 1800	145	22.
11 FEB 0850	35	0.	*	11 FEB 1155	72	276.	*	11 FEB 1500	109	48.	*			
11 FEB 0855	36	1.	*	11 FEB 1200	73	346.	*	11 FEB 1505	110	47.	*			
11 FEB 0900	37	1.	*	11 FEB 1205	74	403.	*	11 FEB 1510	111	46.	*			

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	12.00-HR	
428.	6.17	109.	57.	57.	57.	
		(INCHES)	4.641	4.895	4.895	4.895
		(AC-FT)	54.	57.	57.	57.

CUMULATIVE AREA = 0.22 SQ MI

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69 KK * PON1\$2 *
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HYDROGRAPH ROUTING DATA

70 RS	STORAGE ROUTING		
	NSTPS	1	NUMBER OF SUBREACHES
	ITYP	ELEV	TYPE OF INITIAL CONDITION
	RSVVIC	1346.50	INITIAL CONDITION
	X	0.00	WORKING R AND D COEFFICIENT
71 SA	AREA	2.8	3.9
72 SE	ELEVATION	1346.50	1351.50
73 SS	SPILLWAY		
	CREL	1346.50	SPILLWAY CREST ELEVATION
	SPWID	30.00	SPILLWAY WIDTH
	COOW	1.80	WEIR COEFFICIENT
	EXPW	1.50	EXPONENT OF HEAD

COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	16.67
ELEVATION	1346.50	1351.50

COMPUTED OUTFLOW-ELEVATION DATA

OUTFLOW	0.00	0.00	0.10	0.83	2.80	6.63	12.94	22.36	35.51	53.00
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ELEVATION	1346.50	1346.50	1346.52	1346.56	1346.64	1346.75	1346.89	1347.06	1347.26	1347.49
OUTFLOW	75.47	103.52	137.79	178.89	227.44	284.06	349.39	424.02	508.60	603.74
ELEVATION	1347.75	1348.04	1348.37	1348.72	1349.11	1349.52	1349.97	1350.45	1350.96	1351.50

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.04	0.17	0.39	0.70	1.10	1.59	2.18	2.87	3.66
OUTFLOW	0.00	0.10	0.83	2.80	6.63	12.94	22.36	35.51	53.00	75.47
ELEVATION	1346.50	1346.52	1346.56	1346.64	1346.75	1346.89	1347.06	1347.26	1347.49	1347.75

STORAGE	4.57	5.59	6.73	8.01	9.43	10.99	12.71	14.60	16.67
OUTFLOW	103.52	137.79	178.88	227.44	284.06	349.38	424.02	508.60	603.74
ELEVATION	1348.04	1348.37	1348.72	1349.11	1349.52	1349.97	1350.45	1350.96	1351.50

HYDROGRAPH AT STATION PONI\$2

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	
11	FEB	0600	1	0.	0.0	1346.5	*	11	FEB	1005	50	1.	0.2	1346.6	*	11	FEB	1410	99	93.	4.2	1347.9	
11	FEB	0605	2	0.	0.0	1346.5	*	11	FEB	1010	51	2.	0.3	1346.6	*	11	FEB	1415	100	88.	4.1	1347.9	
11	FEB	0610	3	0.	0.0	1346.5	*	11	FEB	1015	52	2.	0.3	1346.6	*	11	FEB	1420	101	84.	3.9	1347.8	
11	FEB	0615	4	0.	0.0	1346.5	*	11	FEB	1020	53	2.	0.3	1346.6	*	11	FEB	1425	102	80.	3.8	1347.8	
11	FEB	0620	5	0.	0.0	1346.5	*	11	FEB	1025	54	2.	0.3	1346.6	*	11	FEB	1430	103	76.	3.7	1347.8	
11	FEB	0625	6	0.	0.0	1346.5	*	11	FEB	1030	55	3.	0.4	1346.6	*	11	FEB	1435	104	72.	3.5	1347.7	
11	FEB	0630	7	0.	0.0	1346.5	*	11	FEB	1035	56	3.	0.4	1346.7	*	11	FEB	1440	105	69.	3.4	1347.7	
11	FEB	0635	8	0.	0.0	1346.5	*	11	FEB	1040	57	4.	0.5	1346.7	*	11	FEB	1445	106	66.	3.3	1347.6	
11	FEB	0640	9	0.	0.0	1346.5	*	11	FEB	1045	58	4.	0.5	1346.7	*	11	FEB	1450	107	64.	3.2	1347.6	
11	FEB	0645	10	0.	0.0	1346.5	*	11	FEB	1050	59	5.	0.6	1346.7	*	11	FEB	1455	108	61.	3.2	1347.6	
11	FEB	0650	11	0.	0.0	1346.5	*	11	FEB	1055	60	6.	0.6	1346.7	*	11	FEB	1500	109	59.	3.1	1347.6	
11	FEB	0655	12	0.	0.0	1346.5	*	11	FEB	1100	61	6.	0.7	1346.7	*	11	FEB	1505	110	57.	3.0	1347.5	
11	FEB	0700	13	0.	0.0	1346.5	*	11	FEB	1105	62	7.	0.7	1346.8	*	11	FEB	1510	111	55.	2.9	1347.5	
11	FEB	0705	14	0.	0.0	1346.5	*	11	FEB	1110	63	9.	0.8	1346.8	*	11	FEB	1515	112	53.	2.9	1347.5	
11	FEB	0710	15	0.	0.0	1346.5	*	11	FEB	1115	64	10.	0.9	1346.8	*	11	FEB	1520	113	52.	2.8	1347.5	
11	FEB	0715	16	0.	0.0	1346.5	*	11	FEB	1120	65	11.	1.0	1346.9	*	11	FEB	1525	114	51.	2.8	1347.5	
11	FEB	0720	17	0.	0.0	1346.5	*	11	FEB	1125	66	13.	1.1	1346.9	*	11	FEB	1530	115	49.	2.7	1347.4	
11	FEB	0725	18	0.	0.0	1346.5	*	11	FEB	1130	67	16.	1.2	1346.9	*	11	FEB	1535	116	48.	2.7	1347.4	
11	FEB	0730	19	0.	0.0	1346.5	*	11	FEB	1135	68	18.	1.4	1347.0	*	11	FEB	1540	117	47.	2.6	1347.4	
11	FEB	0735	20	0.	0.0	1346.5	*	11	FEB	1140	69	24.	1.7	1347.1	*	11	FEB	1545	118	47.	2.6	1347.4	
11	FEB	0740	21	0.	0.0	1346.5	*	11	FEB	1145	70	36.	2.2	1347.3	*	11	FEB	1550	119	46.	2.6	1347.4	
11	FEB	0745	22	0.	0.0	1346.5	*	11	FEB	1150	71	58.	3.0	1347.5	*	11	FEB	1555	120	45.	2.6	1347.4	
11	FEB	0750	23	0.	0.0	1346.5	*	11	FEB	1155	72	91.	4.2	1347.9	*	11	FEB	1600	121	44.	2.5	1347.4	
11	FEB	0755	24	0.	0.0	1346.5	*	11	FEB	1200	73	136.	5.5	1348.3	*	11	FEB	1605	122	44.	2.5	1347.4	
11	FEB	0800	25	0.	0.0	1346.5	*	11	FEB	1205	74	189.	7.0	1348.8	*	11	FEB	1610	123	43.	2.5	1347.4	
11	FEB	0805	26	0.	0.0	1346.5	*	11	FEB	1210	75	242.	8.4	1349.2	*	11	FEB	1615	124	42.	2.4	1347.3	
11	FEB	0810	27	0.	0.0	1346.5	*	11	FEB	1215	76	286.	9.5	1349.5	*	11	FEB	1620	125	42.	2.4	1347.3	
11	FEB	0815	28	0.	0.0	1346.5	*	11	FEB	1220	77	315.	10.2	1349.7	*	11	FEB	1625	126	41.	2.4	1347.3	
11	FEB	0820	29	0.	0.0	1346.5	*	11	FEB	1225	78	328.	10.5	1349.8	*	11	FEB	1630	127	40.	2.3	1347.3	
11	FEB	0825	30	0.	0.0	1346.5	*	11	FEB	1230	79	330.	10.5	1349.8	*	11	FEB	1635	128	39.	2.3	1347.3	
11	FEB	0830	31	0.	0.0	1346.5	*	11	FEB	1235	80	323.	10.4	1349.8	*	11	FEB	1640	129	38.	2.3	1347.3	
11	FEB	0835	32	0.	0.0	1346.5	*	11	FEB	1240	81	311.	10.1	1349.7	*	11	FEB	1645	130	37.	2.2	1347.3	
11	FEB	0840	33	0.	0.0	1346.5	*	11	FEB	1245	82	294.	9.7	1349.6	*	11	FEB	1650	131	36.	2.2	1347.3	
11	FEB	0845	34	0.	0.0	1346.5	*	11	FEB	1250	83	276.	9.2	1349.5	*	11	FEB	1655	132	35.	2.1	1347.2	
11	FEB	0850	35	0.	0.0	1346.5	*	11	FEB	1255	84	256.	8.7	1349.3	*	11	FEB	1700	133	34.	2.1	1347.2	
11	FEB	0855	36	0.	0.0	1346.5	*	11	FEB	1300	85	237.	8.3	1349.2	*	11	FEB	1705	134	33.	2.1	1347.2	
11	FEB	0900	37	0.	0.0	1346.5	*	11	FEB	1305	86	219.	7.8	1349.0	*	11	FEB	1710	135	33.	2.1	1347.2	
11	FEB	0905	38	0.	0.0	1346.5	*	11	FEB	1310	87	203.	7.4	1348.9	*	11	FEB	1715	136	32.	2.0	1347.2	
11	FEB	0910	39	0.	0.0	1346.5	*	11	FEB	1315	88	188.	7.0	1348.8	*	11	FEB	1720	137	32.	2.0	1347.2	
11	FEB	0915	40	0.	0.0	1346.5	*	11	FEB	1320	89	174.	6.6	1348.7	*	11	FEB	1725	138	31.	2.0	1347.2	
11	FEB	0920	41	0.	0.1	1346.5	*	11	FEB	1325	90	161.	6.2	1348.6	*	11	FEB	1730	139	30.	2.0	1347.2	
11	FEB	0925	42	0.	0.1	1346.5	*	11	FEB	1330	91	150.	5.9	1348.5	*	11	FEB	1735	140	30.	1.9	1347.2	
11	FEB	0930	43	0.	0.1	1346.5	*	11	FEB	1335	92	140.	5.6	1348.4	*	11	FEB	1740	141	30.	1.9	1347.2	
11	FEB	0935	44	0.	0.1	1346.5	*	11	FEB	1340	93	131.	5.4	1348.3	*	11	FEB	1745	142	29.	1.9	1347.2	
11	FEB	0940	45	0.	0.1	1346.5	*	11	FEB	1345	94	123.	5.2	1348.2	*	11	FEB	1750	143	28.	1.9	1347.1	
11	FEB	0945	46	1.	0.1	1346.5	*	11	FEB	1350	95	116.	4.9	1348.2	*	11	FEB	1755	144	28.	1.8	1347.1	
11	FEB	0950	47	1.	0.2	1346.6	*	11	FEB	1355	96	109.	4.7	1348.1	*	11	FEB	1800	145	27.	1.8	1347.1	
11	FEB	0955	48	1.	0.2	1346.6	*	11	FEB	1400	97	103.	4.5	1348.0	*								
11	FEB	1000	49	1.	0.2	1346.6	*	11	FEB	1405	98	98.	4.4	1348.0	*								

PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	12.00-HR
+ (CFS)	(HR)	(CFS)			

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP	Q	*	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP	Q
11	FEB	0600	1	0.00	0.00	0.00	0.	*		11	FEB	1205	74	0.11	0.01	0.10	504.	
11	FEB	0605	2	0.02	0.02	0.00	0.	*		11	FEB	1210	75	0.11	0.01	0.10	473.	
11	FEB	0610	3	0.02	0.02	0.00	0.	*		11	FEB	1215	76	0.11	0.01	0.10	392.	
11	FEB	0615	4	0.02	0.02	0.00	0.	*		11	FEB	1220	77	0.11	0.01	0.10	304.	
11	FEB	0620	5	0.02	0.02	0.00	0.	*		11	FEB	1225	78	0.11	0.01	0.10	233.	
11	FEB	0625	6	0.02	0.02	0.00	0.	*		11	FEB	1230	79	0.11	0.01	0.10	191.	
11	FEB	0630	7	0.02	0.02	0.00	0.	*		11	FEB	1235	80	0.06	0.00	0.05	163.	
11	FEB	0635	8	0.02	0.02	0.00	0.	*		11	FEB	1240	81	0.06	0.00	0.05	138.	
11	FEB	0640	9	0.02	0.02	0.00	0.	*		11	FEB	1245	82	0.06	0.00	0.05	116.	
11	FEB	0645	10	0.02	0.02	0.00	0.	*		11	FEB	1250	83	0.06	0.00	0.05	97.	
11	FEB	0650	11	0.02	0.02	0.00	0.	*		11	FEB	1255	84	0.06	0.00	0.05	84.	
11	FEB	0655	12	0.02	0.02	0.00	0.	*		11	FEB	1300	85	0.06	0.00	0.05	75.	
11	FEB	0700	13	0.02	0.02	0.00	0.	*		11	FEB	1305	86	0.04	0.00	0.04	70.	
11	FEB	0705	14	0.02	0.02	0.00	0.	*		11	FEB	1310	87	0.04	0.00	0.04	64.	
11	FEB	0710	15	0.02	0.02	0.00	0.	*		11	FEB	1315	88	0.04	0.00	0.04	59.	
11	FEB	0715	16	0.02	0.02	0.00	0.	*		11	FEB	1320	89	0.04	0.00	0.04	54.	
11	FEB	0720	17	0.02	0.02	0.00	0.	*		11	FEB	1325	90	0.04	0.00	0.04	51.	
11	FEB	0725	18	0.02	0.02	0.00	0.	*		11	FEB	1330	91	0.04	0.00	0.04	49.	
11	FEB	0730	19	0.02	0.02	0.00	0.	*		11	FEB	1335	92	0.03	0.00	0.03	47.	
11	FEB	0735	20	0.02	0.02	0.00	0.	*		11	FEB	1340	93	0.03	0.00	0.03	45.	
11	FEB	0740	21	0.02	0.02	0.00	0.	*		11	FEB	1345	94	0.03	0.00	0.03	42.	
11	FEB	0745	22	0.02	0.02	0.00	0.	*		11	FEB	1350	95	0.03	0.00	0.03	40.	
11	FEB	0750	23	0.02	0.02	0.00	0.	*		11	FEB	1355	96	0.03	0.00	0.03	38.	
11	FEB	0755	24	0.02	0.02	0.00	0.	*		11	FEB	1400	97	0.03	0.00	0.03	37.	
11	FEB	0800	25	0.02	0.02	0.00	0.	*		11	FEB	1405	98	0.02	0.00	0.02	36.	
11	FEB	0805	26	0.02	0.02	0.00	0.	*		11	FEB	1410	99	0.02	0.00	0.02	34.	
11	FEB	0810	27	0.02	0.02	0.00	0.	*		11	FEB	1415	100	0.02	0.00	0.02	32.	
11	FEB	0815	28	0.02	0.02	0.00	0.	*		11	FEB	1420	101	0.02	0.00	0.02	30.	
11	FEB	0820	29	0.02	0.02	0.00	0.	*		11	FEB	1425	102	0.02	0.00	0.02	28.	
11	FEB	0825	30	0.02	0.02	0.00	0.	*		11	FEB	1430	103	0.02	0.00	0.02	27.	
11	FEB	0830	31	0.02	0.02	0.00	0.	*		11	FEB	1435	104	0.02	0.00	0.02	26.	
11	FEB	0835	32	0.02	0.02	0.00	0.	*		11	FEB	1440	105	0.02	0.00	0.02	26.	
11	FEB	0840	33	0.02	0.02	0.00	1.	*		11	FEB	1445	106	0.02	0.00	0.02	26.	
11	FEB	0845	34	0.02	0.02	0.00	1.	*		11	FEB	1450	107	0.02	0.00	0.02	26.	
11	FEB	0850	35	0.02	0.02	0.00	1.	*		11	FEB	1455	108	0.02	0.00	0.02	26.	
11	FEB	0855	36	0.02	0.02	0.00	2.	*		11	FEB	1500	109	0.02	0.00	0.02	26.	
11	FEB	0900	37	0.02	0.02	0.00	2.	*		11	FEB	1505	110	0.02	0.00	0.02	25.	
11	FEB	0905	38	0.02	0.02	0.00	3.	*		11	FEB	1510	111	0.02	0.00	0.02	25.	
11	FEB	0910	39	0.02	0.02	0.00	3.	*		11	FEB	1515	112	0.02	0.00	0.02	25.	
11	FEB	0915	40	0.02	0.02	0.00	4.	*		11	FEB	1520	113	0.02	0.00	0.02	25.	
11	FEB	0920	41	0.02	0.02	0.01	4.	*		11	FEB	1525	114	0.02	0.00	0.02	25.	
11	FEB	0925	42	0.02	0.02	0.01	5.	*		11	FEB	1530	115	0.02	0.00	0.02	25.	
11	FEB	0930	43	0.02	0.02	0.01	5.	*		11	FEB	1535	116	0.02	0.00	0.02	25.	
11	FEB	0935	44	0.03	0.02	0.01	6.	*		11	FEB	1540	117	0.02	0.00	0.02	25.	
11	FEB	0940	45	0.03	0.02	0.01	6.	*		11	FEB	1545	118	0.02	0.00	0.02	26.	
11	FEB	0945	46	0.03	0.02	0.01	7.	*		11	FEB	1550	119	0.02	0.00	0.02	26.	
11	FEB	0950	47	0.03	0.02	0.01	8.	*		11	FEB	1555	120	0.02	0.00	0.02	26.	
11	FEB	0955	48	0.03	0.02	0.01	8.	*		11	FEB	1600	121	0.02	0.00	0.02	26.	
11	FEB	1000	49	0.03	0.02	0.01	9.	*		11	FEB	1605	122	0.02	0.00	0.01	25.	
11	FEB	1005	50	0.04	0.02	0.01	10.	*		11	FEB	1610	123	0.02	0.00	0.01	24.	
11	FEB	1010	51	0.04	0.02	0.01	11.	*		11	FEB	1615	124	0.02	0.00	0.01	22.	
11	FEB	1015	52	0.04	0.02	0.01	12.	*		11	FEB	1620	125	0.02	0.00	0.01	21.	
11	FEB	1020	53	0.04	0.02	0.01	13.	*		11	FEB	1625	126	0.02	0.00	0.01	19.	
11	FEB	1025	54	0.04	0.02	0.01	14.	*		11	FEB	1630	127	0.02	0.00	0.01	18.	
11	FEB	1030	55	0.04	0.02	0.02	15.	*		11	FEB	1635	128	0.02	0.00	0.01	18.	
11	FEB	1035	56	0.05	0.03	0.02	16.	*		11	FEB	1640	129	0.02	0.00	0.01	18.	
11	FEB	1040	57	0.05	0.03	0.02	18.	*		11	FEB	1645	130	0.02	0.00	0.01	17.	
11	FEB	1045	58	0.05	0.03	0.02	20.	*		11	FEB	1650	131	0.02	0.00	0.01	17.	
11	FEB	1050	59	0.05	0.02	0.02	22.	*		11	FEB	1655	132	0.02	0.00	0.01	17.	
11	FEB	1055	60	0.05	0.02	0.02	24.	*		11	FEB	1700	133	0.02	0.00	0.01	17.	
11	FEB	1100	61	0.05	0.02	0.03	25.	*		11	FEB	1705	134	0.02	0.00	0.01	17.	
11	FEB	1105	62	0.07	0.03	0.04	27.	*		11	FEB	1710	135	0.02	0.00	0.01	17.	
11	FEB	1110	63	0.07	0.03	0.04	30.	*		11	FEB	1715	136	0.02	0.00	0.01	17.	
11	FEB	1115	64	0.07	0.03	0.04	35.	*		11	FEB	1720	137	0.02	0.00	0.01	17.	
11	FEB	1120	65	0.07	0.03	0.04	40.	*		11	FEB	1725	138	0.02	0.00	0.01	17.	
11	FEB	1125	66	0.07	0.03	0.05	44.	*		11	FEB	1730	139	0.02	0.00	0.01	17.	
11	FEB	1130	67	0.07	0.03	0.05	47.	*		11	FEB	1735	140	0.01	0.00	0.01	17.	
11	FEB	1135	68	0.59	0.18	0.41	65.	*		11	FEB	1740	141	0.01	0.00	0.01	16.	
11	FEB	1140	69	0.59	0.14	0.45	123.	*		11	FEB	1745	142	0.01	0.00	0.01	15.	
11	FEB	1145	70	0.59	0.11	0.48	219.	*		11	FEB	1750	143	0.01	0.00	0.01	13.	
11	FEB	1150	71	0.59	0.09	0.50	322.	*		11	FEB	1755	144	0.01	0.00	0.01	12.	
11	FEB	1155	72	0.59	0.07	0.52	412.	*		11	FEB	1800	145	0.01	0.00	0.01	11.	
11	FEB	1200	73	0.59	0.06	0.53	476.	*										

TOTAL RAINFALL = 7.80, TOTAL LOSS = 2.13, TOTAL EXCESS = 5.67

PEAK FLOW + (CFS)	TIME (HR)	(CFS)	MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	12.00-HR
+ 504.	6.08		85.	45.	45.	45.
		(INCHES)	5.261	5.633	5.633	5.633
		(AC-FT)	42.	45.	45.	45.

CUMULATIVE AREA = 0.15 SQ MI

* *
83 KK * INTO3 *
* *

84 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

HYDROGRAPH AT STATION INTO3
SUM OF 2 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
11	FEB	0600	1	0.	*	11	FEB	0905	38	3.	*	11	FEB	1210	75	714.	*	11	FEB	1515	112	79.	*
11	FEB	0605	2	0.	*	11	FEB	0910	39	3.	*	11	FEB	1215	76	678.	*	11	FEB	1520	113	77.	*
11	FEB	0610	3	0.	*	11	FEB	0915	40	4.	*	11	FEB	1220	77	619.	*	11	FEB	1525	114	76.	*
11	FEB	0615	4	0.	*	11	FEB	0920	41	4.	*	11	FEB	1225	78	561.	*	11	FEB	1530	115	75.	*
11	FEB	0620	5	0.	*	11	FEB	0925	42	5.	*	11	FEB	1230	79	521.	*	11	FEB	1535	116	74.	*
11	FEB	0625	6	0.	*	11	FEB	0930	43	6.	*	11	FEB	1235	80	486.	*	11	FEB	1540	117	73.	*
11	FEB	0630	7	0.	*	11	FEB	0935	44	6.	*	11	FEB	1240	81	449.	*	11	FEB	1545	118	72.	*
11	FEB	0635	8	0.	*	11	FEB	0940	45	7.	*	11	FEB	1245	82	410.	*	11	FEB	1550	119	71.	*
11	FEB	0640	9	0.	*	11	FEB	0945	46	8.	*	11	FEB	1250	83	373.	*	11	FEB	1555	120	71.	*
11	FEB	0645	10	0.	*	11	FEB	0950	47	8.	*	11	FEB	1255	84	340.	*	11	FEB	1600	121	70.	*
11	FEB	0650	11	0.	*	11	FEB	0955	48	9.	*	11	FEB	1300	85	313.	*	11	FEB	1605	122	69.	*
11	FEB	0655	12	0.	*	11	FEB	1000	49	10.	*	11	FEB	1305	86	289.	*	11	FEB	1610	123	67.	*
11	FEB	0700	13	0.	*	11	FEB	1005	50	11.	*	11	FEB	1310	87	267.	*	11	FEB	1615	124	65.	*
11	FEB	0705	14	0.	*	11	FEB	1010	51	12.	*	11	FEB	1315	88	246.	*	11	FEB	1620	125	62.	*
11	FEB	0710	15	0.	*	11	FEB	1015	52	14.	*	11	FEB	1320	89	228.	*	11	FEB	1625	126	60.	*
11	FEB	0715	16	0.	*	11	FEB	1020	53	15.	*	11	FEB	1325	90	212.	*	11	FEB	1630	127	58.	*
11	FEB	0720	17	0.	*	11	FEB	1025	54	16.	*	11	FEB	1330	91	199.	*	11	FEB	1635	128	57.	*
11	FEB	0725	18	0.	*	11	FEB	1030	55	18.	*	11	FEB	1335	92	187.	*	11	FEB	1640	129	55.	*
11	FEB	0730	19	0.	*	11	FEB	1035	56	19.	*	11	FEB	1340	93	176.	*	11	FEB	1645	130	54.	*
11	FEB	0735	20	0.	*	11	FEB	1040	57	21.	*	11	FEB	1345	94	166.	*	11	FEB	1650	131	53.	*
11	FEB	0740	21	0.	*	11	FEB	1045	58	24.	*	11	FEB	1350	95	156.	*	11	FEB	1655	132	52.	*
11	FEB	0745	22	0.	*	11	FEB	1050	59	27.	*	11	FEB	1355	96	147.	*	11	FEB	1700	133	51.	*
11	FEB	0750	23	0.	*	11	FEB	1055	60	29.	*	11	FEB	1400	97	140.	*	11	FEB	1705	134	51.	*
11	FEB	0755	24	0.	*	11	FEB	1100	61	32.	*	11	FEB	1405	98	134.	*	11	FEB	1710	135	50.	*
11	FEB	0800	25	0.	*	11	FEB	1105	62	35.	*	11	FEB	1410	99	127.	*	11	FEB	1715	136	49.	*
11	FEB	0805	26	0.	*	11	FEB	1110	63	39.	*	11	FEB	1415	100	120.	*	11	FEB	1720	137	49.	*
11	FEB	0810	27	0.	*	11	FEB	1115	64	45.	*	11	FEB	1420	101	114.	*	11	FEB	1725	138	48.	*
11	FEB	0815	28	0.	*	11	FEB	1120	65	51.	*	11	FEB	1425	102	108.	*	11	FEB	1730	139	48.	*
11	FEB	0820	29	0.	*	11	FEB	1125	66	57.	*	11	FEB	1430	103	103.	*	11	FEB	1735	140	47.	*
11	FEB	0825	30	0.	*	11	FEB	1130	67	62.	*	11	FEB	1435	104	99.	*	11	FEB	1740	141	45.	*
11	FEB	0830	31	0.	*	11	FEB	1135	68	84.	*	11	FEB	1440	105	95.	*	11	FEB	1745	142	44.	*
11	FEB	0835	32	0.	*	11	FEB	1140	69	147.	*	11	FEB	1445	106	92.	*	11	FEB	1750	143	41.	*
11	FEB	0840	33	1.	*	11	FEB	1145	70	255.	*	11	FEB	1450	107	89.	*	11	FEB	1755	144	40.	*
11	FEB	0845	34	1.	*	11	FEB	1150	71	380.	*	11	FEB	1455	108	87.	*	11	FEB	1800	145	38.	*
11	FEB	0850	35	1.	*	11	FEB	1155	72	503.	*	11	FEB	1500	109	84.	*						*
11	FEB	0855	36	2.	*	11	FEB	1200	73	612.	*	11	FEB	1505	110	82.	*						*
11	FEB	0900	37	2.	*	11	FEB	1205	74	693.	*	11	FEB	1510	111	80.	*						*

PEAK FLOW	TIME	(CFS)	MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	12.00-HR

+ (CFS) (HR)
 + 714. 6.17 (CFS)
 (INCHES) 191. 101. 101. 101.
 (AC-FT) 4.817 5.104 5.104 5.104
 95. 100. 100. 100.

CUMULATIVE AREA = 0.37 SQ MI

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 * *
 85 KK * POND3 *
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HYDROGRAPH ROUTING DATA

86 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1345.00 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

87 SV STORAGE 0.0 8.0 16.0 23.0 31.0 35.0
 88 SQ DISCHARGE 0. 40. 220. 325. 400. 440.
 89 SE ELEVATION 1344.70 1346.00 1347.00 1348.00 1349.00 1349.50

HYDROGRAPH AT STATION POND3

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
11	FEB	0600	1	9.	1.8	1345.0	*	11	FEB	1005	50	4.	0.8	1344.8	*	11	FEB	1410	99	237.	17.1	1347.2
11	FEB	0605	2	9.	1.8	1345.0	*	11	FEB	1010	51	4.	0.9	1344.8	*	11	FEB	1415	100	226.	16.4	1347.1
11	FEB	0610	3	9.	1.7	1345.0	*	11	FEB	1015	52	5.	0.9	1344.9	*	11	FEB	1420	101	212.	15.7	1347.0
11	FEB	0615	4	8.	1.7	1345.0	*	11	FEB	1020	53	5.	1.0	1344.9	*	11	FEB	1425	102	198.	15.0	1346.9
11	FEB	0620	5	8.	1.6	1345.0	*	11	FEB	1025	54	5.	1.1	1344.9	*	11	FEB	1430	103	185.	14.4	1346.8
11	FEB	0625	6	8.	1.6	1345.0	*	11	FEB	1030	55	6.	1.2	1344.9	*	11	FEB	1435	104	172.	13.9	1346.7
11	FEB	0630	7	8.	1.5	1344.9	*	11	FEB	1035	56	6.	1.2	1344.9	*	11	FEB	1440	105	162.	13.4	1346.7
11	FEB	0635	8	7.	1.5	1344.9	*	11	FEB	1040	57	7.	1.3	1344.9	*	11	FEB	1445	106	152.	13.0	1346.6
11	FEB	0640	9	7.	1.4	1344.9	*	11	FEB	1045	58	7.	1.4	1344.9	*	11	FEB	1450	107	143.	12.6	1346.6
11	FEB	0645	10	7.	1.4	1344.9	*	11	FEB	1050	59	8.	1.6	1345.0	*	11	FEB	1455	108	135.	12.2	1346.5
11	FEB	0650	11	7.	1.3	1344.9	*	11	FEB	1055	60	9.	1.7	1345.0	*	11	FEB	1500	109	128.	11.9	1346.5
11	FEB	0655	12	6.	1.3	1344.9	*	11	FEB	1100	61	9.	1.9	1345.0	*	11	FEB	1505	110	122.	11.6	1346.5
11	FEB	0700	13	6.	1.2	1344.9	*	11	FEB	1105	62	10.	2.0	1345.0	*	11	FEB	1510	111	116.	11.4	1346.4
11	FEB	0705	14	6.	1.2	1344.9	*	11	FEB	1110	63	11.	2.2	1345.1	*	11	FEB	1515	112	111.	11.1	1346.4
11	FEB	0710	15	6.	1.1	1344.9	*	11	FEB	1115	64	12.	2.4	1345.1	*	11	FEB	1520	113	106.	10.9	1346.4
11	FEB	0715	16	6.	1.1	1344.9	*	11	FEB	1120	65	13.	2.6	1345.1	*	11	FEB	1525	114	102.	10.7	1346.3
11	FEB	0720	17	5.	1.1	1344.9	*	11	FEB	1125	66	15.	2.9	1345.2	*	11	FEB	1530	115	98.	10.6	1346.3
11	FEB	0725	18	5.	1.0	1344.9	*	11	FEB	1130	67	16.	3.2	1345.2	*	11	FEB	1535	116	95.	10.4	1346.3
11	FEB	0730	19	5.	1.0	1344.9	*	11	FEB	1135	68	18.	3.6	1345.3	*	11	FEB	1540	117	92.	10.3	1346.3
11	FEB	0735	20	5.	1.0	1344.9	*	11	FEB	1140	69	21.	4.3	1345.4	*	11	FEB	1545	118	89.	10.2	1346.3
11	FEB	0740	21	5.	0.9	1344.9	*	11	FEB	1145	70	27.	5.5	1345.6	*	11	FEB	1550	119	86.	10.1	1346.3
11	FEB	0745	22	4.	0.9	1344.8	*	11	FEB	1150	71	37.	7.5	1345.9	*	11	FEB	1555	120	84.	10.0	1346.2
11	FEB	0750	23	4.	0.9	1344.8	*	11	FEB	1155	72	87.	10.1	1346.3	*	11	FEB	1600	121	82.	9.9	1346.2
11	FEB	0755	24	4.	0.8	1344.8	*	11	FEB	1200	73	154.	13.1	1346.6	*	11	FEB	1605	122	80.	9.8	1346.2
11	FEB	0800	25	4.	0.8	1344.8	*	11	FEB	1205	74	224.	16.3	1347.0	*	11	FEB	1610	123	79.	9.7	1346.2
11	FEB	0805	26	4.	0.8	1344.8	*	11	FEB	1210	75	271.	19.4	1347.5	*	11	FEB	1615	124	77.	9.6	1346.2
11	FEB	0810	27	4.	0.8	1344.8	*	11	FEB	1215	76	313.	22.2	1347.9	*	11	FEB	1620	125	75.	9.5	1346.2
11	FEB	0815	28	4.	0.7	1344.8	*	11	FEB	1220	77	338.	24.4	1348.2	*	11	FEB	1625	126	73.	9.5	1346.2
11	FEB	0820	29	4.	0.7	1344.8	*	11	FEB	1225	78	354.	26.1	1348.4	*	11	FEB	1630	127	71.	9.4	1346.2
11	FEB	0825	30	3.	0.7	1344.8	*	11	FEB	1230	79	366.	27.3	1348.5	*	11	FEB	1635	128	69.	9.3	1346.2
11	FEB	0830	31	3.	0.7	1344.8	*	11	FEB	1235	80	374.	28.3	1348.7	*	11	FEB	1640	129	67.	9.2	1346.2
11	FEB	0835	32	3.	0.6	1344.8	*	11	FEB	1240	81	380.	28.9	1348.7	*	11	FEB	1645	130	65.	9.1	1346.1
11	FEB	0840	33	3.	0.6	1344.8	*	11	FEB	1245	82	383.	29.2	1348.8	*	11	FEB	1650	131	64.	9.0	1346.1
11	FEB	0845	34	3.	0.6	1344.8	*	11	FEB	1250	83	384.	29.3	1348.8	*	11	FEB	1655	132	62.	9.0	1346.1
11	FEB	0850	35	3.	0.6	1344.8	*	11	FEB	1255	84	382.	29.1	1348.8	*	11	FEB	1700	133	60.	8.9	1346.1
11	FEB	0855	36	3.	0.6	1344.8	*	11	FEB	1300	85	379.	28.7	1348.7	*	11	FEB	1705	134	59.	8.8	1346.1

11 FEB 0900	37	3.	0.6	1344.8	* 11 FEB 1305	86	374.	28.2	1348.6	* 11 FEB 1710	135	58.	8.8	1346.1
11 FEB 0905	38	3.	0.6	1344.8	* 11 FEB 1310	87	368.	27.6	1348.6	* 11 FEB 1715	136	57.	8.7	1346.1
11 FEB 0910	39	3.	0.6	1344.8	* 11 FEB 1315	88	361.	26.8	1348.5	* 11 FEB 1720	137	56.	8.7	1346.1
11 FEB 0915	40	3.	0.6	1344.8	* 11 FEB 1320	89	353.	26.0	1348.4	* 11 FEB 1725	138	54.	8.6	1346.1
11 FEB 0920	41	3.	0.6	1344.8	* 11 FEB 1325	90	345.	25.1	1348.3	* 11 FEB 1730	139	54.	8.6	1346.1
11 FEB 0925	42	3.	0.6	1344.8	* 11 FEB 1330	91	336.	24.2	1348.1	* 11 FEB 1735	140	53.	8.6	1346.1
11 FEB 0930	43	3.	0.6	1344.8	* 11 FEB 1335	92	327.	23.2	1348.0	* 11 FEB 1740	141	52.	8.5	1346.1
11 FEB 0935	44	3.	0.6	1344.8	* 11 FEB 1340	93	314.	22.3	1347.9	* 11 FEB 1745	142	51.	8.5	1346.1
11 FEB 0940	45	3.	0.7	1344.8	* 11 FEB 1345	94	300.	21.3	1347.8	* 11 FEB 1750	143	49.	8.4	1346.1
11 FEB 0945	46	3.	0.7	1344.8	* 11 FEB 1350	95	286.	20.4	1347.6	* 11 FEB 1755	144	48.	8.4	1346.0
11 FEB 0950	47	4.	0.7	1344.8	* 11 FEB 1355	96	273.	19.5	1347.5	* 11 FEB 1800	145	47.	8.3	1346.0
11 FEB 0955	48	4.	0.7	1344.8	* 11 FEB 1400	97	260.	18.7	1347.4	*				
11 FEB 1000	49	4.	0.8	1344.8	* 11 FEB 1405	98	248.	17.9	1347.3	*				

PEAK FLOW + (CFS)	TIME (HR)	(CFS)	MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	12.00-HR
384.	6.83	181.	94.	94.	94.	
		(INCHES)	4.577	4.775	4.775	4.775
		(AC-FT)	90.	94.	94.	94.

PEAK STORAGE + (AC-FT)	TIME (HR)	(AC-FT)	MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	12.00-HR
29.	6.83	15.	9.	9.	9.	

PEAK STAGE + (FEET)	TIME (HR)	(FEET)	MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	12.00-HR
1348.78	6.83	1346.97	1345.96	1345.96	1345.96	

CUMULATIVE AREA = 0.37 SQ MI

* BASIN4 *

11 IN TIME DATA FOR INPUT TIME SERIES
JXMIN 30 TIME INTERVAL IN MINUTES
JXDATE 11FEB93 STARTING DATE
JXTIME 600 STARTING TIME

SUBBASIN RUNOFF DATA

91 BA SUBBASIN CHARACTERISTICS
TAREA 0.02 SUBBASIN AREA

PRECIPITATION DATA

92 PB STORM 7.80 BASIN TOTAL PRECIPITATION

93 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.06	0.06	0.06
0.06	0.06	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

97 LS SCS LOSS RATE

STRTL 0.63 INITIAL ABSTRACTION
 CRVNR 76.00 CURVE NUMBER
 RTIMP 0.00 PERCENT IMPERVIOUS AREA

98 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG 0.25 LAG

WARNING *** TIME INTERVAL IS GREATER THAN .29*LAG

UNIT HYDROGRAPH
 17 END-OF-PERIOD ORDINATES

6. 19. 30. 30. 23. 14. 9. 6. 4. 2.
 1. 1. 1. 0. 0. 0. 0.

HYDROGRAPH AT STATION BASIN4

DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP	Q	DA	MON	HRMN	ORD	RAIN	LOSS	EXCESS	COMP	Q
11	FEB	0600	1	0.00	0.00	0.00	0.	*	11	FEB	1205	74	0.11	0.02	0.09	56.	*
11	FEB	0605	2	0.02	0.02	0.00	0.	*	11	FEB	1210	75	0.11	0.02	0.10	53.	*
11	FEB	0610	3	0.02	0.02	0.00	0.	*	11	FEB	1215	76	0.11	0.02	0.10	44.	*
11	FEB	0615	4	0.02	0.02	0.00	0.	*	11	FEB	1220	77	0.11	0.02	0.10	35.	*
11	FEB	0620	5	0.02	0.02	0.00	0.	*	11	FEB	1225	78	0.11	0.02	0.10	27.	*
11	FEB	0625	6	0.02	0.02	0.00	0.	*	11	FEB	1230	79	0.11	0.02	0.10	22.	*
11	FEB	0630	7	0.02	0.02	0.00	0.	*	11	FEB	1235	80	0.06	0.01	0.05	19.	*
11	FEB	0635	8	0.02	0.02	0.00	0.	*	11	FEB	1240	81	0.06	0.01	0.05	16.	*
11	FEB	0640	9	0.02	0.02	0.00	0.	*	11	FEB	1245	82	0.06	0.01	0.05	14.	*
11	FEB	0645	10	0.02	0.02	0.00	0.	*	11	FEB	1250	83	0.06	0.01	0.05	11.	*
11	FEB	0650	11	0.02	0.02	0.00	0.	*	11	FEB	1255	84	0.06	0.01	0.05	10.	*
11	FEB	0655	12	0.02	0.02	0.00	0.	*	11	FEB	1300	85	0.06	0.01	0.05	9.	*
11	FEB	0700	13	0.02	0.02	0.00	0.	*	11	FEB	1305	86	0.04	0.01	0.04	8.	*
11	FEB	0705	14	0.02	0.02	0.00	0.	*	11	FEB	1310	87	0.04	0.01	0.04	8.	*
11	FEB	0710	15	0.02	0.02	0.00	0.	*	11	FEB	1315	88	0.04	0.01	0.04	7.	*
11	FEB	0715	16	0.02	0.02	0.00	0.	*	11	FEB	1320	89	0.04	0.01	0.04	6.	*
11	FEB	0720	17	0.02	0.02	0.00	0.	*	11	FEB	1325	90	0.04	0.00	0.04	6.	*
11	FEB	0725	18	0.02	0.02	0.00	0.	*	11	FEB	1330	91	0.04	0.00	0.04	6.	*
11	FEB	0730	19	0.02	0.02	0.00	0.	*	11	FEB	1335	92	0.03	0.00	0.03	6.	*
11	FEB	0735	20	0.02	0.02	0.00	0.	*	11	FEB	1340	93	0.03	0.00	0.03	5.	*
11	FEB	0740	21	0.02	0.02	0.00	0.	*	11	FEB	1345	94	0.03	0.00	0.03	5.	*
11	FEB	0745	22	0.02	0.02	0.00	0.	*	11	FEB	1350	95	0.03	0.00	0.03	5.	*
11	FEB	0750	23	0.02	0.02	0.00	0.	*	11	FEB	1355	96	0.03	0.00	0.03	5.	*
11	FEB	0755	24	0.02	0.02	0.00	0.	*	11	FEB	1400	97	0.03	0.00	0.03	4.	*
11	FEB	0800	25	0.02	0.02	0.00	0.	*	11	FEB	1405	98	0.02	0.00	0.02	4.	*
11	FEB	0805	26	0.02	0.02	0.00	0.	*	11	FEB	1410	99	0.02	0.00	0.02	4.	*
11	FEB	0810	27	0.02	0.02	0.00	0.	*	11	FEB	1415	100	0.02	0.00	0.02	4.	*
11	FEB	0815	28	0.02	0.02	0.00	0.	*	11	FEB	1420	101	0.02	0.00	0.02	4.	*
11	FEB	0820	29	0.02	0.02	0.00	0.	*	11	FEB	1425	102	0.02	0.00	0.02	3.	*
11	FEB	0825	30	0.02	0.02	0.00	0.	*	11	FEB	1430	103	0.02	0.00	0.02	3.	*
11	FEB	0830	31	0.02	0.02	0.00	0.	*	11	FEB	1435	104	0.02	0.00	0.02	3.	*
11	FEB	0835	32	0.02	0.02	0.00	0.	*	11	FEB	1440	105	0.02	0.00	0.02	3.	*
11	FEB	0840	33	0.02	0.02	0.00	0.	*	11	FEB	1445	106	0.02	0.00	0.02	3.	*
11	FEB	0845	34	0.02	0.02	0.00	0.	*	11	FEB	1450	107	0.02	0.00	0.02	3.	*
11	FEB	0850	35	0.02	0.02	0.00	0.	*	11	FEB	1455	108	0.02	0.00	0.02	3.	*
11	FEB	0855	36	0.02	0.02	0.00	0.	*	11	FEB	1500	109	0.02	0.00	0.02	3.	*
11	FEB	0900	37	0.02	0.02	0.00	0.	*	11	FEB	1505	110	0.02	0.00	0.02	3.	*
11	FEB	0905	38	0.02	0.02	0.00	0.	*	11	FEB	1510	111	0.02	0.00	0.02	3.	*
11	FEB	0910	39	0.02	0.02	0.00	0.	*	11	FEB	1515	112	0.02	0.00	0.02	3.	*
11	FEB	0915	40	0.02	0.02	0.00	0.	*	11	FEB	1520	113	0.02	0.00	0.02	3.	*
11	FEB	0920	41	0.02	0.02	0.00	0.	*	11	FEB	1525	114	0.02	0.00	0.02	3.	*
11	FEB	0925	42	0.02	0.02	0.00	0.	*	11	FEB	1530	115	0.02	0.00	0.02	3.	*
11	FEB	0930	43	0.02	0.02	0.00	0.	*	11	FEB	1535	116	0.02	0.00	0.02	3.	*
11	FEB	0935	44	0.03	0.03	0.00	0.	*	11	FEB	1540	117	0.02	0.00	0.02	3.	*
11	FEB	0940	45	0.03	0.02	0.00	0.	*	11	FEB	1545	118	0.02	0.00	0.02	3.	*
11	FEB	0945	46	0.03	0.02	0.00	0.	*	11	FEB	1550	119	0.02	0.00	0.02	3.	*
11	FEB	0950	47	0.03	0.02	0.00	0.	*	11	FEB	1555	120	0.02	0.00	0.02	3.	*
11	FEB	0955	48	0.03	0.02	0.00	0.	*	11	FEB	1600	121	0.02	0.00	0.02	3.	*
11	FEB	1000	49	0.03	0.02	0.00	0.	*	11	FEB	1605	122	0.02	0.00	0.01	3.	*
11	FEB	1005	50	0.04	0.03	0.01	1.	*	11	FEB	1610	123	0.02	0.00	0.01	3.	*
11	FEB	1010	51	0.04	0.03	0.01	1.	*	11	FEB	1615	124	0.02	0.00	0.01	3.	*
11	FEB	1015	52	0.04	0.03	0.01	1.	*	11	FEB	1620	125	0.02	0.00	0.01	2.	*
11	FEB	1020	53	0.04	0.03	0.01	1.	*	11	FEB	1625	126	0.02	0.00	0.01	2.	*
11	FEB	1025	54	0.04	0.03	0.01	1.	*	11	FEB	1630	127	0.02	0.00	0.01	2.	*
11	FEB	1030	55	0.04	0.03	0.01	1.	*	11	FEB	1635	128	0.02	0.00	0.01	2.	*
11	FEB	1035	56	0.05	0.03	0.01	1.	*	11	FEB	1640	129	0.02	0.00	0.01	2.	*

11 FEB 1040	57	0.05	0.03	0.01	1.	*	11 FEB 1645	130	0.02	0.00	0.01	2.
11 FEB 1045	58	0.05	0.03	0.01	1.	*	11 FEB 1650	131	0.02	0.00	0.01	2.
11 FEB 1050	59	0.05	0.03	0.02	2.	*	11 FEB 1655	132	0.02	0.00	0.01	2.
11 FEB 1055	60	0.05	0.03	0.02	2.	*	11 FEB 1700	133	0.02	0.00	0.01	2.
11 FEB 1100	61	0.05	0.03	0.02	2.	*	11 FEB 1705	134	0.02	0.00	0.01	2.
11 FEB 1105	62	0.07	0.05	0.03	2.	*	11 FEB 1710	135	0.02	0.00	0.01	2.
11 FEB 1110	63	0.07	0.04	0.03	3.	*	11 FEB 1715	136	0.02	0.00	0.01	2.
11 FEB 1115	64	0.07	0.04	0.03	3.	*	11 FEB 1720	137	0.02	0.00	0.01	2.
11 FEB 1120	65	0.07	0.04	0.03	4.	*	11 FEB 1725	138	0.02	0.00	0.01	2.
11 FEB 1125	66	0.07	0.04	0.03	4.	*	11 FEB 1730	139	0.02	0.00	0.01	2.
11 FEB 1130	67	0.07	0.04	0.04	4.	*	11 FEB 1735	140	0.01	0.00	0.01	2.
11 FEB 1135	68	0.59	0.27	0.32	6.	*	11 FEB 1740	141	0.01	0.00	0.01	2.
11 FEB 1140	69	0.59	0.21	0.38	12.	*	11 FEB 1745	142	0.01	0.00	0.01	2.
11 FEB 1145	70	0.59	0.17	0.42	22.	*	11 FEB 1750	143	0.01	0.00	0.01	2.
11 FEB 1150	71	0.59	0.14	0.45	34.	*	11 FEB 1755	144	0.01	0.00	0.01	1.
11 FEB 1155	72	0.59	0.12	0.47	44.	*	11 FEB 1800	145	0.01	0.00	0.01	1.
11 FEB 1200	73	0.59	0.10	0.49	52.	*						

TOTAL RAINFALL = 7.80, TOTAL LOSS = 2.82, TOTAL EXCESS = 4.98

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	12.00-HR	
56.	6.08	9.	5.	5.	5.	
		(INCHES)	4.679	4.940	4.940	4.940
		(AC-FT)	5.	5.	5.	5.

CUMULATIVE AREA = 0.02 SQ MI

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99 KK * INTO4 *
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100 HC HYDROGRAPH COMBINATION
ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

HYDROGRAPH AT STATION INTO4
SUM OF 2 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*
11	FEB	0600	1	9.	*	11	FEB	0905	38	3.	*	11	FEB	1210	75	324.	*	11	FEB	1515	112	114.	*
11	FEB	0605	2	9.	*	11	FEB	0910	39	3.	*	11	FEB	1215	76	357.	*	11	FEB	1520	113	109.	*
11	FEB	0610	3	9.	*	11	FEB	0915	40	3.	*	11	FEB	1220	77	373.	*	11	FEB	1525	114	105.	*
11	FEB	0615	4	8.	*	11	FEB	0920	41	3.	*	11	FEB	1225	78	381.	*	11	FEB	1530	115	101.	*
11	FEB	0620	5	8.	*	11	FEB	0925	42	3.	*	11	FEB	1230	79	388.	*	11	FEB	1535	116	98.	*
11	FEB	0625	6	8.	*	11	FEB	0930	43	3.	*	11	FEB	1235	80	393.	*	11	FEB	1540	117	95.	*
11	FEB	0630	7	8.	*	11	FEB	0935	44	3.	*	11	FEB	1240	81	396.	*	11	FEB	1545	118	92.	*
11	FEB	0635	8	7.	*	11	FEB	0940	45	3.	*	11	FEB	1245	82	397.	*	11	FEB	1550	119	89.	*
11	FEB	0640	9	7.	*	11	FEB	0945	46	4.	*	11	FEB	1250	83	395.	*	11	FEB	1555	120	87.	*
11	FEB	0645	10	7.	*	11	FEB	0950	47	4.	*	11	FEB	1255	84	392.	*	11	FEB	1600	121	85.	*
11	FEB	0650	11	7.	*	11	FEB	0955	48	4.	*	11	FEB	1300	85	387.	*	11	FEB	1605	122	83.	*
11	FEB	0655	12	6.	*	11	FEB	1000	49	4.	*	11	FEB	1305	86	382.	*	11	FEB	1610	123	81.	*
11	FEB	0700	13	6.	*	11	FEB	1005	50	5.	*	11	FEB	1310	87	375.	*	11	FEB	1615	124	79.	*
11	FEB	0705	14	6.	*	11	FEB	1010	51	5.	*	11	FEB	1315	88	368.	*	11	FEB	1620	125	77.	*
11	FEB	0710	15	6.	*	11	FEB	1015	52	5.	*	11	FEB	1320	89	359.	*	11	FEB	1625	126	75.	*
11	FEB	0715	16	6.	*	11	FEB	1020	53	6.	*	11	FEB	1325	90	351.	*	11	FEB	1630	127	73.	*
11	FEB	0720	17	5.	*	11	FEB	1025	54	6.	*	11	FEB	1330	91	342.	*	11	FEB	1635	128	71.	*
11	FEB	0725	18	5.	*	11	FEB	1030	55	7.	*	11	FEB	1335	92	333.	*	11	FEB	1640	129	69.	*
11	FEB	0730	19	5.	*	11	FEB	1035	56	7.	*	11	FEB	1340	93	319.	*	11	FEB	1645	130	67.	*
11	FEB	0735	20	5.	*	11	FEB	1040	57	8.	*	11	FEB	1345	94	305.	*	11	FEB	1650	131	66.	*
11	FEB	0740	21	5.	*	11	FEB	1045	58	9.	*	11	FEB	1350	95	291.	*	11	FEB	1655	132	64.	*
11	FEB	0745	22	4.	*	11	FEB	1050	59	10.	*	11	FEB	1355	96	277.	*	11	FEB	1700	133	63.	*

11 FEB 0750	23	4.	*	11 FEB 1055	60	10.	*	11 FEB 1400	97	265.	*	11 FEB 1705	134	61.
11 FEB 0755	24	4.	*	11 FEB 1100	61	11.	*	11 FEB 1405	98	252.	*	11 FEB 1710	135	60.
11 FEB 0800	25	4.	*	11 FEB 1105	62	12.	*	11 FEB 1410	99	241.	*	11 FEB 1715	136	59.
11 FEB 0805	26	4.	*	11 FEB 1110	63	14.	*	11 FEB 1415	100	229.	*	11 FEB 1720	137	58.
11 FEB 0810	27	4.	*	11 FEB 1115	64	15.	*	11 FEB 1420	101	216.	*	11 FEB 1725	138	57.
11 FEB 0815	28	4.	*	11 FEB 1120	65	17.	*	11 FEB 1425	102	201.	*	11 FEB 1730	139	56.
11 FEB 0820	29	4.	*	11 FEB 1125	66	19.	*	11 FEB 1430	103	188.	*	11 FEB 1735	140	55.
11 FEB 0825	30	3.	*	11 FEB 1130	67	20.	*	11 FEB 1435	104	176.	*	11 FEB 1740	141	54.
11 FEB 0830	31	3.	*	11 FEB 1135	68	24.	*	11 FEB 1440	105	165.	*	11 FEB 1745	142	52.
11 FEB 0835	32	3.	*	11 FEB 1140	69	34.	*	11 FEB 1445	106	155.	*	11 FEB 1750	143	51.
11 FEB 0840	33	3.	*	11 FEB 1145	70	50.	*	11 FEB 1450	107	146.	*	11 FEB 1755	144	50.
11 FEB 0845	34	3.	*	11 FEB 1150	71	71.	*	11 FEB 1455	108	138.	*	11 FEB 1800	145	48.
11 FEB 0850	35	3.	*	11 FEB 1155	72	131.	*	11 FEB 1500	109	131.	*			
11 FEB 0855	36	3.	*	11 FEB 1200	73	206.	*	11 FEB 1505	110	125.	*			
11 FEB 0900	37	3.	*	11 FEB 1205	74	280.	*	11 FEB 1510	111	119.	*			

PEAK FLOW (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	12.00-HR
397.	6.75	190.	99.	99.	99.
		(INCHES) 4.565	4.783	4.783	4.783
		(AC-FT) 94.	99.	99.	99.

CUMULATIVE AREA = 0.39 SQ MI

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101 KK * POND4 *
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HYDROGRAPH ROUTING DATA

STATION	ROUTING	STORAGE ROUTING					
		0.0	0.6	1.1	1.7	2.3	2.8
102 RS	DISCHARGE	0.	40.	210.	350.	450.	530.
103 SV	STORAGE	0.0	0.6	1.1	1.7	2.3	2.8
104 SQ	DISCHARGE	0.	40.	210.	350.	450.	530.
105 SE	ELEVATION	1344.70	1345.70	1346.70	1347.70	1348.70	1349.70

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 40. TO 210.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

HYDROGRAPH AT STATION POND4

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
11 FEB 0600	1			0.	0.0	1344.7	11 FEB 1005	50	4.	0.1	1344.8	11 FEB 1410	99	248.	1.3	1347.0				
11 FEB 0605	2			3.	0.1	1344.8	11 FEB 1010	51	4.	0.1	1344.8	11 FEB 1415	100	236.	1.2	1346.9				
11 FEB 0610	3			5.	0.1	1344.8	11 FEB 1015	52	5.	0.1	1344.8	11 FEB 1420	101	224.	1.2	1346.8				
11 FEB 0615	4			7.	0.1	1344.9	11 FEB 1020	53	5.	0.1	1344.8	11 FEB 1425	102	210.	1.1	1346.7				
11 FEB 0620	5			7.	0.1	1344.9	11 FEB 1025	54	5.	0.1	1344.8	11 FEB 1430	103	193.	1.1	1346.6				
11 FEB 0625	6			7.	0.1	1344.9	11 FEB 1030	55	6.	0.1	1344.8	11 FEB 1435	104	181.	1.0	1346.5				
11 FEB 0630	7			8.	0.1	1344.9	11 FEB 1035	56	6.	0.1	1344.9	11 FEB 1440	105	169.	1.0	1346.5				
11 FEB 0635	8			7.	0.1	1344.9	11 FEB 1040	57	7.	0.1	1344.9	11 FEB 1445	106	159.	1.0	1346.4				
11 FEB 0640	9			7.	0.1	1344.9	11 FEB 1045	58	7.	0.1	1344.9	11 FEB 1450	107	150.	0.9	1346.3				
11 FEB 0645	10			7.	0.1	1344.9	11 FEB 1050	59	8.	0.1	1344.9	11 FEB 1455	108	142.	0.9	1346.3				
11 FEB 0650	11			7.	0.1	1344.9	11 FEB 1055	60	9.	0.1	1344.9	11 FEB 1500	109	134.	0.9	1346.3				
11 FEB 0655	12			7.	0.1	1344.9	11 FEB 1100	61	10.	0.1	1344.9	11 FEB 1505	110	127.	0.9	1346.2				

11 FEB 0700	13	7.	0.1	1344.9	*	11 FEB 1105	62	10.	0.2	1345.0	*	11 FEB 1510	111	121.	0.8	1346.2
11 FEB 0705	14	6.	0.1	1344.9	*	11 FEB 1110	63	11.	0.2	1345.0	*	11 FEB 1515	112	116.	0.8	1346.1
11 FEB 0710	15	6.	0.1	1344.9	*	11 FEB 1115	64	12.	0.2	1345.0	*	11 FEB 1520	113	111.	0.8	1346.1
11 FEB 0715	16	6.	0.1	1344.8	*	11 FEB 1120	65	14.	0.2	1345.0	*	11 FEB 1525	114	107.	0.8	1346.1
11 FEB 0720	17	6.	0.1	1344.8	*	11 FEB 1125	66	15.	0.2	1345.1	*	11 FEB 1530	115	103.	0.8	1346.1
11 FEB 0725	18	6.	0.1	1344.8	*	11 FEB 1130	67	17.	0.3	1345.1	*	11 FEB 1535	116	99.	0.8	1346.0
11 FEB 0730	19	5.	0.1	1344.8	*	11 FEB 1135	68	19.	0.3	1345.2	*	11 FEB 1540	117	96.	0.8	1346.0
11 FEB 0735	20	5.	0.1	1344.8	*	11 FEB 1140	69	23.	0.3	1345.3	*	11 FEB 1545	118	93.	0.8	1346.0
11 FEB 0740	21	5.	0.1	1344.8	*	11 FEB 1145	70	30.	0.4	1345.4	*	11 FEB 1550	119	90.	0.7	1346.0
11 FEB 0745	22	5.	0.1	1344.8	*	11 FEB 1150	71	43.	0.6	1345.7	*	11 FEB 1555	120	88.	0.7	1346.0
11 FEB 0750	23	5.	0.1	1344.8	*	11 FEB 1155	72	105.	0.8	1346.1	*	11 FEB 1600	121	86.	0.7	1346.0
11 FEB 0755	24	5.	0.1	1344.8	*	11 FEB 1200	73	173.	1.0	1346.5	*	11 FEB 1605	122	84.	0.7	1346.0
11 FEB 0800	25	4.	0.1	1344.8	*	11 FEB 1205	74	242.	1.2	1346.9	*	11 FEB 1610	123	82.	0.7	1345.9
11 FEB 0805	26	4.	0.1	1344.8	*	11 FEB 1210	75	296.	1.5	1347.3	*	11 FEB 1615	124	80.	0.7	1345.9
11 FEB 0810	27	4.	0.1	1344.8	*	11 FEB 1215	76	336.	1.6	1347.6	*	11 FEB 1620	125	78.	0.7	1345.9
11 FEB 0815	28	4.	0.1	1344.8	*	11 FEB 1220	77	360.	1.8	1347.8	*	11 FEB 1625	126	76.	0.7	1345.9
11 FEB 0820	29	4.	0.1	1344.8	*	11 FEB 1225	78	372.	1.8	1347.9	*	11 FEB 1630	127	74.	0.7	1345.9
11 FEB 0825	30	4.	0.1	1344.8	*	11 FEB 1230	79	381.	1.9	1348.0	*	11 FEB 1635	128	72.	0.7	1345.9
11 FEB 0830	31	4.	0.1	1344.8	*	11 FEB 1235	80	388.	1.9	1348.1	*	11 FEB 1640	129	70.	0.7	1345.9
11 FEB 0835	32	3.	0.1	1344.8	*	11 FEB 1240	81	393.	2.0	1348.1	*	11 FEB 1645	130	68.	0.7	1345.9
11 FEB 0840	33	3.	0.0	1344.8	*	11 FEB 1245	82	396.	2.0	1348.2	*	11 FEB 1650	131	66.	0.7	1345.9
11 FEB 0845	34	3.	0.0	1344.8	*	11 FEB 1250	83	396.	2.0	1348.2	*	11 FEB 1655	132	65.	0.7	1345.8
11 FEB 0850	35	3.	0.0	1344.8	*	11 FEB 1255	84	394.	2.0	1348.1	*	11 FEB 1700	133	63.	0.7	1345.8
11 FEB 0855	36	3.	0.0	1344.8	*	11 FEB 1300	85	391.	1.9	1348.1	*	11 FEB 1705	134	62.	0.7	1345.8
11 FEB 0900	37	3.	0.0	1344.8	*	11 FEB 1305	86	386.	1.9	1348.1	*	11 FEB 1710	135	60.	0.7	1345.8
11 FEB 0905	38	3.	0.0	1344.8	*	11 FEB 1310	87	381.	1.9	1348.0	*	11 FEB 1715	136	59.	0.7	1345.8
11 FEB 0910	39	3.	0.0	1344.8	*	11 FEB 1315	88	374.	1.8	1347.9	*	11 FEB 1720	137	58.	0.7	1345.8
11 FEB 0915	40	3.	0.0	1344.8	*	11 FEB 1320	89	366.	1.8	1347.9	*	11 FEB 1725	138	57.	0.6	1345.8
11 FEB 0920	41	3.	0.0	1344.8	*	11 FEB 1325	90	358.	1.7	1347.8	*	11 FEB 1730	139	56.	0.6	1345.8
11 FEB 0925	42	3.	0.0	1344.8	*	11 FEB 1330	91	349.	1.7	1347.7	*	11 FEB 1735	140	55.	0.6	1345.8
11 FEB 0930	43	3.	0.0	1344.8	*	11 FEB 1335	92	338.	1.7	1347.6	*	11 FEB 1740	141	54.	0.6	1345.8
11 FEB 0935	44	3.	0.0	1344.8	*	11 FEB 1340	93	327.	1.6	1347.5	*	11 FEB 1745	142	53.	0.6	1345.8
11 FEB 0940	45	3.	0.0	1344.8	*	11 FEB 1345	94	314.	1.5	1347.4	*	11 FEB 1750	143	52.	0.6	1345.8
11 FEB 0945	46	3.	0.1	1344.8	*	11 FEB 1350	95	300.	1.5	1347.3	*	11 FEB 1755	144	50.	0.6	1345.8
11 FEB 0950	47	4.	0.1	1344.8	*	11 FEB 1355	96	286.	1.4	1347.2	*	11 FEB 1800	145	49.	0.6	1345.8
11 FEB 0955	48	4.	0.1	1344.8	*	11 FEB 1400	97	273.	1.4	1347.1	*					
11 FEB 1000	49	4.	0.1	1344.8	*	11 FEB 1405	98	260.	1.3	1347.1	*					

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	12.00-HR
		(CFS)			
+ 396.	6.83	190.	99.	99.	99.
		(INCHES)	4.561	4.753	4.753
		(AC-FT)	94.	98.	98.

PEAK STORAGE + (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	12.00-HR
+ 2.	6.83	1.	1.	1.	1.

PEAK STAGE + (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	12.00-HR
+ 1348.16	6.83	1346.66	1345.78	1345.78	1345.78

CUMULATIVE AREA = 0.39 SQ MI

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
+ HYDROGRAPH AT									
+ EAST		199.	6.08	33.	18.	18.	0.06		
+ ROUTED TO									
+ PONDA		78.	6.50	31.	16.	16.	0.06		
+ HYDROGRAPH AT									
+ RRWEST		169.	6.25	35.	18.	18.	0.08	1355.99 6.50	
+ ROUTED TO									

+		PONDB	158.	6.33	35.	18.	18.	0.08		
+									1351.69	6.33
	HYDROGRAPH AT									
+		WEST	50.	6.08	8.	4.	4.	0.01		
	HYDROGRAPH AT									
+		BASIN1	15.	6.08	3.	1.	1.	0.00		
	HYDROGRAPH AT									
+		BASIN2	191.	6.08	32.	17.	17.	0.06		
	5 COMBINED AT									
+		INTO2	428.	6.17	109.	57.	57.	0.22		
	ROUTED TO									
+		PON1\$2	330.	6.50	108.	56.	56.	0.22		
+									1349.84	6.50
	HYDROGRAPH AT									
+		BASIN3	504.	6.08	85.	45.	45.	0.15		
	2 COMBINED AT									
+		INTO3	714.	6.17	191.	101.	101.	0.37		
	ROUTED TO									
+		POND3	384.	6.83	181.	94.	94.	0.37		
+									1348.78	6.83
	HYDROGRAPH AT									
+		BASIN4	56.	6.08	9.	5.	5.	0.02		
	2 COMBINED AT									
+		INTO4	397.	6.75	190.	99.	99.	0.39		
	ROUTED TO									
+		POND4	396.	6.83	190.	99.	99.	0.39		
+									1348.16	6.83

*** NORMAL END OF HEC-1 ***



Date _____ Page _____ of _____

Project _____

Item _____

East Parl. Kastens Prop.

<u>Area</u>	<u>CN</u>	<u>Use</u>
23.3 Ac.	75	100% 1/4 Ac. Res.
5.1 Ac.	75	100% 1/4 Ac. Res.
2.2 Ac.	88	50% 1/4 Ac. Res. ; CN = 75 50% Pond ; CN = 100
5.3 Ac.	75	1/4 Ac. Res.

say 5-year storm is intercepted to lake #3;
A = 60% of total
∴ $(.6 \times 5.3 \text{ Ac.}) \times 5 \text{ yr. storm}$

$$0.6Q = 0.6(5.3)(0.46)(4.61) = 6.7 \text{ cfs}$$

For HEC-1; find PB for BA of 5.3 Ac, such that peak runoff = 6.7 cfs or 7 cfs

also say that 5-year storm intercepted to lake #6

A = 40% of 5.3 Ac.

$$\therefore 0.4(5.3)(0.46)(4.61) = 4.5$$

set PB such that peak Q = 5 cfs

8.3 Ac.	85.0	60% 1/4 Ac. Res. ; CN = 75 40% Pond ; CN = 100
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N 1/2 of 1/4 Sec. 50 ac.	71.0	100% Cultivated Land w/ Conservation treatment.
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CURRENT DATE: 02-03-1995
CURRENT TIME: 09:49:45

FILE DATE: 02-02-1995
FILE NAME: KSTNS5

FHWA CULVERT ANALYSIS
HY-8, VERSION 3.2

# C #	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
# U #	INLET ELEV. (FT)	OUTLET ELEV. (FT)	CULVERT LENGTH (FT)	BARRELS SHAPE MATERIAL	SPAN (FT)	RISE (FT)	MANNING n	INLET TYPE
# 1 #	1337.00	1334.00	40.11	1 RCP	3.50	3.50	.012	CONVENTIONAL
# 2 #								
# 3 #								
# 4 #								
# 5 #								
# 6 #								

SUMMARY OF CULVERT FLOWS (CFS) FILE: KSTNS5 DATE: 02-02-1995

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY ITR
1339.00	0	0	0	0	0	0	0	0 1
1339.45	12	12	0	0	0	0	0	0 1
1340.14	24	24	0	0	0	0	0	0 1
1341.27	36	36	0	0	0	0	0	0 1
1343.04	48	48	0	0	0	0	0	0 1
1345.32	60	60	0	0	0	0	0	0 1
1348.10	72	72	0	0	0	0	0	0 1
1349.15	84	84	0	0	0	0	0	0 1
1355.08	94	94	0	0	0	0	0	0 1
1359.49	108	108	0	0	0	0	0	0 1
1364.30	120	120	0	0	0	0	0	0 1
1350.00	158	158	0	0	0	0	0	0 OVERTOPPING

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: KSTNS5 DATE: 02-02-1995

HEAD ELEV (FT)	HEAD ERROR (FT)	TOTAL FLOW (CFS)	FLOW ERROR (CFS)	% FLOW ERROR
1339.00	0.00	0	0	0.00
1339.45	0.00	12	0	0.00
1340.14	0.00	24	0	0.00
1341.27	0.00	36	0	0.00
1343.04	0.00	48	0	0.00
1345.32	0.00	60	0	0.00
1348.10	0.00	72	0	0.00
1349.15	0.00	84	0	0.00
1355.08	0.00	94	0	0.00
1359.49	0.00	108	0	0.00
1364.30	0.00	120	0	0.00

<1> TOLERANCE (FT) = 0.010

<2> TOLERANCE (%) = 1.000

CURRENT DATE: 02-03-1995
CURRENT TIME: 09:49:45

FILE DATE: 02-02-1995
FILE NAME: KSTNS5

CULVERT # 1

PERFORMANCE CURVE FOR 1 BARREL(S)

Q (cfs)	HWE (ft)	TWE (ft)	ICH (ft)	OCH (ft)	FLOW TYPE	CCE (ft)	FCE (ft)	TCE (ft)	VO (fps)
0	1339.00	1339.00	0.00	2.00	0-NF	0.00	1337.00	0.00	0.00
12	1339.45	1339.21	1.36	2.45	1-S1	0.00	0.00	0.00	1.25
24	1340.14	1339.85	2.03	3.14	1-S1	0.00	0.00	0.00	2.49
36	1341.27	1340.91	2.64	4.27	4-FF	0.00	0.00	0.00	3.74
48	1343.04	1342.39	3.20	6.04	4-FF	0.00	0.00	0.00	4.99
60	1345.32	1344.30	3.78	8.32	4-FF	0.00	0.00	0.00	6.24
72	1348.10	1346.63	4.45	11.10	4-FF	0.00	0.00	0.00	7.48
84	1349.15	1347.15	5.23	12.15	4-FF	0.00	0.00	0.00	8.73
94	1355.08	1352.57	5.98	18.08	4-FF	0.00	0.00	0.00	9.77
108	1359.49	1356.17	7.19	22.49	4-FF	0.00	0.00	0.00	11.23
120	1364.30	1360.20	8.38	27.30	4-FF	0.00	0.00	0.00	12.47

El. inlet face invert 1337.00 ft El. outlet invert 1334.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT *****
INLET STATION (FT) 0.00
INLET ELEVATION (FT) 1337.00
OUTLET STATION (FT) 40.00
OUTLET ELEVATION (FT) 1334.00
NUMBER OF BARRELS 1.00
SLOPE (V-FT/H-FT) 0.0750
CULVERT LENGTH ALONG SLOPE (FT) 40.11

***** CULVERT DATA SUMMARY *****
BARREL SHAPE CIRCULAR
BARREL DIAMETER 3.50 FT
BARREL MATERIAL CONCRETE
BARREL MANNING'S N 0.012
INLET TYPE CONVENTIONAL
INLET EDGE AND WALL SQUARE EDGE WITH HEADWALL
INLET DEPRESSION NONE

CURRENT DATE: 02-03-1995
CURRENT TIME: 09:49:45

FILE DATE: 02-02-1995
FILE NAME: KSTNS5

TAILWATER

TAILWATER RATING CURVE

FLOW (CFS)	W.S.E. (FT)
0	1339.00
12	1339.21
24	1339.85
36	1340.91
48	1342.39
60	1344.30
72	1346.63
84	1347.15
94	1352.57
108	1356.17
120	1360.20

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH (FT)	30.00
CREST LENGTH (FT)	100.00
OVERTOPPING CREST ELEVATION (FT)	1350.00

CURRENT DATE: 02-02-1995
 CURRENT TIME: 09:46:48

FILE DATE: 02-02-1995
 FILE NAME: EASTKSTN

 FHWA CULVERT ANALYSIS
 HY-8, VERSION 3.2

# C #	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
# U	INLET	OUTLET	CULVERT	BARRELS	SPAN	RISE	MANNING	INLET
# V #	ELEV.	ELEV.	LENGTH	SHAPE	(FT)	(FT)	n	TYPE
# #	(FT)	(FT)	(FT)	MATERIAL				
# 1 #	1333.50	1331.00	250.01	1 RCP	3.00	3.00	.012	CONVENTIONAL
# 2 #								
# 3 #								
# 4 #								
# 5 #								
# 6 #								

 FILE: EASTKSTN CULVERT HEADWATER ELEVATION (FT) DATE: 02-02-1995

DISCHARGE	1	2	3	4	5	6	ROADWAY
0	1339.00	0.00	0.00	0.00	0.00	0.00	1350.00
15	1339.21	0.00	0.00	0.00	0.00	0.00	1350.14
30	1339.85	0.00	0.00	0.00	0.00	0.00	1350.22
45	1340.91	0.00	0.00	0.00	0.00	0.00	1350.28
60	1342.39	0.00	0.00	0.00	0.00	0.00	1350.34
75	1344.30	0.00	0.00	0.00	0.00	0.00	1350.40
90	1346.63	0.00	0.00	0.00	0.00	0.00	1350.44
93	1347.15	0.00	0.00	0.00	0.00	0.00	1350.46
120	1352.57	0.00	0.00	0.00	0.00	0.00	1350.54
135	1356.17	0.00	0.00	0.00	0.00	0.00	1350.58
150	1360.20	0.00	0.00	0.00	0.00	0.00	1350.63

CURRENT DATE: 02-02-1995
CURRENT TIME: 09:46:48

FILE DATE: 02-02-1995
FILE NAME: EASTKSTN

CULVERT # 1

PERFORMANCE CURVE FOR 1 BARREL(S)

Q (cfs)	HWE (ft)	TWE (ft)	ICH (ft)	OCH (ft)	FLOW TYPE	CCE (ft)	FCE (ft)	TCE (ft)	VO (fps)
0	1339.00	1339.00	0.00	5.50	0-WF	0.00	1333.50	0.00	0.00
15	1339.21	1339.00	1.75	5.71	4-FF	0.00	0.00	0.00	2.12
30	1339.85	1339.00	2.69	6.35	4-FF	0.00	0.00	0.00	4.24
45	1340.91	1339.00	3.62	7.41	4-FF	0.00	0.00	0.00	6.37
60	1342.39	1339.00	4.84	8.89	4-FF	0.00	0.00	0.00	8.49
75	1344.30	1339.00	6.44	10.80	4-FF	0.00	0.00	0.00	10.61
90	1346.63	1339.00	8.43	13.13	4-FF	0.00	0.00	0.00	12.73
93	1347.15	1339.00	8.87	13.65	4-FF	0.00	0.00	0.00	13.16
120	1352.57	1339.00	13.76	19.07	4-FF	0.00	0.00	0.00	16.98
135	1356.17	1339.00	17.01	22.67	4-FF	0.00	0.00	0.00	19.10
150	1360.20	1339.00	20.65	26.70	4-FF	0.00	0.00	0.00	21.22

El. inlet face invert 1333.50 ft El. outlet invert 1331.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT *****
INLET STATION (FT) 0.00
INLET ELEVATION (FT) 1333.50
OUTLET STATION (FT) 250.00
OUTLET ELEVATION (FT) 1331.00
NUMBER OF BARRELS 1.00
SLOPE (V-FT/H-FT) 0.0100
CULVERT LENGTH ALONG SLOPE (FT) 250.01

***** CULVERT DATA SUMMARY *****
BARREL SHAPE CIRCULAR
BARREL DIAMETER 3.00 FT
BARREL MATERIAL CONCRETE
BARREL MANNING'S N 0.012
INLET TYPE CONVENTIONAL
INLET EDGE AND WALL SQUARE EDGE WITH HEADWALL
INLET DEPRESSION NONE

CURRENT DATE: 02-02-1995
CURRENT TIME: 09:46:48

FILE DATE: 02-02-1995
FILE NAME: EASTKSTN

TAILWATER

CONSTANT WATER SURFACE ELEVATION
1339.00

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH (FT)	35.00
CREST LENGTH (FT)	100.00
OVERTOPPING CREST ELEVATION (FT)	1350.00

CURRENT DATE: 02-02-1995
 CURRENT TIME: 10:30:07

FILE DATE: 02-02-1995
 FILE NAME: KSTNS2

 FHWA CULVERT ANALYSIS
 HY-8, VERSION 3.2

# C #	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
# U #	INLET	OUTLET	CULVERT	BARRELS	SPAN	RISE	MANNING	INLET
# V #	ELEV.	ELEV.	LENGTH	SHAPE	(FT)	(FT)	n	TYPE
#	(FT)	(FT)	(FT)	MATERIAL				
# 1 #	1340.00	1333.00	300.08	1 RCP	1.50	1.50	.012	CONVENTIONAL
# 2 #								
# 3 #								
# 4 #								
# 5 #								
# 6 #								

 FILE: KSTNS2 CULVERT HEADWATER ELEVATION (FT) DATE: 02-02-1995

DISCHARGE	1	2	3	4	5	6	ROADWAY
0	1340.00	0.00	0.00	0.00	0.00	0.00	1349.00
3	1340.93	0.00	0.00	0.00	0.00	0.00	1349.05
6	1341.45	0.00	0.00	0.00	0.00	0.00	1349.07
9	1342.02	0.00	0.00	0.00	0.00	0.00	1349.10
12	1343.39	0.00	0.00	0.00	0.00	0.00	1349.12
15	1345.86	0.00	0.00	0.00	0.00	0.00	1349.14
18	1348.88	0.00	0.00	0.00	0.00	0.00	1349.15
20	1351.20	0.00	0.00	0.00	0.00	0.00	1349.17
24	1356.57	0.00	0.00	0.00	0.00	0.00	1349.19
27	1361.23	0.00	0.00	0.00	0.00	0.00	1349.20
30	1366.45	0.00	0.00	0.00	0.00	0.00	1349.22

CURRENT DATE: 02-02-1995
CURRENT TIME: 10:30:07

FILE DATE: 02-02-1995
FILE NAME: KSTNS2

CULVERT # 1

PERFORMANCE CURVE FOR 1 BARREL(S)

Q (cfs)	HWE (ft)	TWE (ft)	ICH (ft)	OCH (ft)	FLOW TYPE	CCE (ft)	FCE (ft)	TCE (ft)	VO (fps)
0	1340.00	1339.00	0.00	-1.00	0-NF	0.00	1340.00	0.00	0.00
3	1340.93	1339.00	0.93	-0.73	4-FF	0.00	0.00	0.00	1.70
6	1341.45	1339.00	1.45	0.10	4-FF	0.00	0.00	0.00	3.40
9	1342.02	1339.00	2.02	1.47	4-FF	0.00	0.00	0.00	5.09
12	1343.39	1339.00	2.81	3.39	4-FF	0.00	0.00	0.00	6.79
15	1345.86	1339.00	3.85	5.86	4-FF	0.00	0.00	0.00	8.49
18	1348.88	1339.00	5.15	8.88	4-FF	0.00	0.00	0.00	10.19
20	1351.20	1339.00	6.18	11.20	4-FF	0.00	0.00	0.00	11.32
24	1356.57	1339.00	8.57	16.57	4-FF	0.00	0.00	0.00	13.58
27	1361.23	1339.00	10.65	21.23	4-FF	0.00	0.00	0.00	15.28
30	1366.45	1339.00	12.97	26.45	4-FF	0.00	0.00	0.00	16.98

El. inlet face invert 1340.00 ft El. outlet invert 1333.00 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT *****
INLET STATION (FT) 0.00
INLET ELEVATION (FT) 1340.00
OUTLET STATION (FT) 300.00
OUTLET ELEVATION (FT) 1333.00
NUMBER OF BARRELS 1.00
SLOPE (V-FT/H-FT) 0.0233
CULVERT LENGTH ALONG SLOPE (FT) 300.08

***** CULVERT DATA SUMMARY *****
BARREL SHAPE CIRCULAR
BARREL DIAMETER 1.50 FT
BARREL MATERIAL CONCRETE
BARREL MANNING'S N 0.012
INLET TYPE CONVENTIONAL
INLET EDGE AND WALL SQUARE EDGE WITH HEADWALL
INLET DEPRESSION NONE

CURRENT DATE: 02-02-1995
CURRENT TIME: 10:30:07

FILE DATE: 02-02-1995
FILE NAME: KSTNS2

TAILWATER

CONSTANT WATER SURFACE ELEVATION
1339.00

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH (FT)	35.00
CREST LENGTH (FT)	100.00
OVERTOPPING CREST ELEVATION (FT)	1349.00

CURRENT DATE: 02-03-1995
CURRENT TIME: 08:34:12

FILE DATE: 02-02-1995
FILE NAME: KSTNS3

FHWA CULVERT ANALYSIS
HY-8, VERSION 3.2

# C #	SITE DATA			CULVERT SHAPE, MATERIAL, INLET				
# U #								
# L #	INLET	OUTLET	CULVERT	BARRELS				
# V #	ELEV.	ELEV.	LENGTH	SHAPE	SPAN	RISE	MANNING	INLET
# #	(FT)	(FT)	(FT)	MATERIAL	(FT)	(FT)	n	TYPE
# 1 #	1330.00	1328.50	220.01	1 RCP	4.00	4.00	.012	CONVENTIONAL
# 2 #								
# 3 #								
# 4 #								
# 5 #								
# 6 #								

SUMMARY OF CULVERT FLOWS (CFS) FILE: KSTNS3 DATE: 02-02-1995

ELEV (FT)	TOTAL	1	2	3	4	5	6	ROADWAY	ITR
1334.00	0	0	0	0	0	0	0	0	1
1334.78	15	15	0	0	0	0	0	0	1
1335.37	30	30	0	0	0	0	0	0	1
1336.00	45	45	0	0	0	0	0	0	1
1336.70	60	60	0	0	0	0	0	0	1
1337.48	75	75	0	0	0	0	0	0	1
1338.34	90	90	0	0	0	0	0	0	1
1339.04	101	101	0	0	0	0	0	0	1
1340.34	120	120	0	0	0	0	0	0	1
1341.49	135	135	0	0	0	0	0	0	1
1342.74	150	150	0	0	0	0	0	0	1
1350.00	230	230	0	0	0	0	0	0	OVERTOPPING

SUMMARY OF ITERATIVE SOLUTION ERRORS FILE: KSTNS3 DATE: 02-02-1995

HEAD ELEV (FT)	HEAD ERROR (FT)	TOTAL FLOW (CFS)	FLOW ERROR (CFS)	% FLOW ERROR
1334.00	0.00	0	0	0.00
1334.78	0.00	15	0	0.00
1335.37	0.00	30	0	0.00
1336.00	0.00	45	0	0.00
1336.70	0.00	60	0	0.00
1337.48	0.00	75	0	0.00
1338.34	0.00	90	0	0.00
1339.04	0.00	101	0	0.00
1340.34	0.00	120	0	0.00
1341.49	0.00	135	0	0.00
1342.74	0.00	150	0	0.00

<1> TOLERANCE (FT) = 0.010 <2> TOLERANCE (%) = 1.000

CURRENT DATE: 02-03-1995
CURRENT TIME: 08:34:12

FILE DATE: 02-02-1995
FILE NAME: KSTNS3

CULVERT # 1

PERFORMANCE CURVE FOR 1 BARREL(S)

Q (cfs)	HWE (ft)	TWE (ft)	ICH (ft)	OCH (ft)	FLOW TYPE	CCE (ft)	FCE (ft)	TCE (ft)	VO (fps)
0	1334.00	1334.00	0.00	4.00	0-NF	0.00	1330.00	0.00	0.00
15	1334.78	1334.73	1.55	4.78	4-FF	0.00	0.00	0.00	1.19
30	1335.37	1335.16	2.30	5.37	4-FF	0.00	0.00	0.00	2.39
45	1336.00	1335.52	2.95	6.00	4-FF	0.00	0.00	0.00	3.58
60	1336.70	1335.84	3.53	6.70	4-FF	0.00	0.00	0.00	4.77
75	1337.48	1336.14	4.10	7.48	4-FF	0.00	0.00	0.00	5.97
90	1338.34	1336.41	4.73	8.34	4-FF	0.00	0.00	0.00	7.16
101	1339.04	1336.61	5.24	9.04	4-FF	0.00	0.00	0.00	8.04
120	1340.34	1336.92	6.27	10.34	4-FF	0.00	0.00	0.00	9.55
135	1341.49	1337.16	7.22	11.49	4-FF	0.00	0.00	0.00	10.74
150	1342.74	1337.39	8.29	12.74	4-FF	0.00	0.00	0.00	11.94

El. inlet face invert 1330.00 ft El. outlet invert 1328.50 ft
El. inlet throat invert 0.00 ft El. inlet crest 0.00 ft

***** SITE DATA ***** CULVERT INVERT *****
INLET STATION (FT) 0.00
INLET ELEVATION (FT) 1330.00
OUTLET STATION (FT) 220.00
OUTLET ELEVATION (FT) 1328.50
NUMBER OF BARRELS 1.00
SLOPE (V-FT/H-FT) 0.0068
CULVERT LENGTH ALONG SLOPE (FT) 220.01

***** CULVERT DATA SUMMARY *****
BARREL SHAPE CIRCULAR
BARREL DIAMETER 4.00 FT
BARREL MATERIAL CONCRETE
BARREL MANNING'S N 0.012
INLET TYPE CONVENTIONAL
INLET EDGE AND WALL SQUARE EDGE WITH HEADWALL
INLET DEPRESSION NONE

CURRENT DATE: 02-03-1995
CURRENT TIME: 08:34:12

FILE DATE: 02-02-1995
FILE NAME: KSTNS3

TAILWATER

TAILWATER RATING CURVE

FLOW (CFS)	W.S.E. (FT)
0	1334.00
15	1334.73
30	1335.16
45	1335.52
60	1335.84
75	1336.14
90	1336.41
101	1336.61
120	1336.92
135	1337.16
150	1337.39

ROADWAY OVERTOPPING DATA

ROADWAY SURFACE	PAVED
EMBANKMENT TOP WIDTH (FT)	35.00
CREST LENGTH (FT)	100.00
OVERTOPPING CREST ELEVATION (FT)	1350.00

N/2 not incl.

02-20-1995

```

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1)
*   MAY 1991
*   VERSION 4.0.1E
*   Lahey F77L-EM/32 version 5.01
*   Dodson & Associates, Inc.
* RUN DATE 02/14/95 TIME 11:21:18
*****

```

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*****
*
* U.S. ARMY CORPS OF ENGINEERS
* HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET
* DAVIS, CALIFORNIA 95616
* (916) 551-1748
*
*****

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X X XXXXXX XXXX X
X X X X X XX
X X X X X
XXXXXX XXXX X XXXX X
X X X X X
X X X X X
X X XXXXXX XXXX XXX

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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
 NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
 DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
 KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

```

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
1 ID REFLECTION RIDGE 9TH ADD. -- DETENTION STORAGE ANALYSIS, 100-YR STORM
* T:\DAR\KSTNS4.IH1
*** LIST ***
*** FREE ***
*DIAGRAM
2 IT 6 29SEP92 0600 0 29SEP92 2400
3 IN 30 29SEP92 0600
4 IO 3 0
* PARAMETERS FOR HYDROGRAPH FOR FLOW THROUGH 42" RCP
5 KK 1
6 BA .0594
7 PB 6.5
8 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
9 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
10 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
11 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
12 LS 0 61 38
13 UD 0.24
* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED AT THE EXISTING POND
14 KK 2
15 BA .0172
16 PB 7.8
17 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
18 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
19 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
20 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
21 LS 0 61 38
22 UD 0.15
* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM 5.1 AC. BASIN
23 KK 5.1AC
24 BA .00797
25 PB 7.8
26 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
27 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
28 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
29 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
30 LS 0 75 0
31 UD 0.15
* COMBINED FLOW INFLOW HYDROGRAPH AT POND NO. 2

```

* LAKES 1 & 2 ARE ONE LAKE

32 KK INTO2
 33 HC 3
 * STAGE STORAGE RELATIONSHIP FOR POND NO. 2 FOR 48" RCP

34 KK POND2
 35 RS 1 ELEV 1345.4
 36 SA 1.3 1.9
 37 SE 1345.4 1349.0
 38 SQ 0 72 84 94 108
 39 SE 1345.4 1348.10 1349.15 1355.08 1359.49
 * PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM 2.2 AC. BASIN
 HEC-1 INPUT

1

PAGE 2

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

40 KK 2.2AC
 41 BA .0034
 42 PB 7.8
 43 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 44 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 45 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 46 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 47 LS 0 88 0
 48 UD 0.15

* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM N. PART 5.3 AC. BASIN

49 KK N5.3AC
 50 BA 0.005
 51 PB 5.0
 52 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 53 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 54 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 55 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 56 LS 0 75 0
 57 UD 0.15

* COMBINED FLOW INFLOW HYDROGRAPH AT POND. NO. 3

58 KK INTO3
 59 HC 3
 * STAGE STORAGE RELATIONSHIP FOR POND. NO. 3. FOR 36" RCP OUTLET

60 KK POND3
 61 RS 1 ELEV 1339.0
 62 SA .4 .7
 63 SE 1339.0 1346.0
 64 SQ 0 15 30 45 60 75 90 120 135
 65 SE 1339.0 1339.21 1339.85 1340.91 1342.39 1344.3 1346.63 1352.57 1356.17
 * PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM 23.3 AC. BASIN

66 KK 23.3AC
 67 BA .03641
 68 PB 7.8
 69 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 70 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 71 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 72 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 73 LS 0 75
 74 UD 0.15

* STAGE STORAGE RELATIONSHIP FOR POND NO. 4 FOR 18" OUTLET

75 KK POND4
 76 RS 1 ELEV 1345.0
 77 SA 0.9 1.4
 78 SE 1345.0 1349.0
 79 SQ 0 15 18 20 24
 80 SE 1345.0 1345.86 1348.88 1351.2 1356.57
 * PARAMETERS FRO HYDROGRAPH FOR FLOW COLLECTED FROM 8.3 AC. BASIN
 HEC-1 INPUT

1

PAGE 3

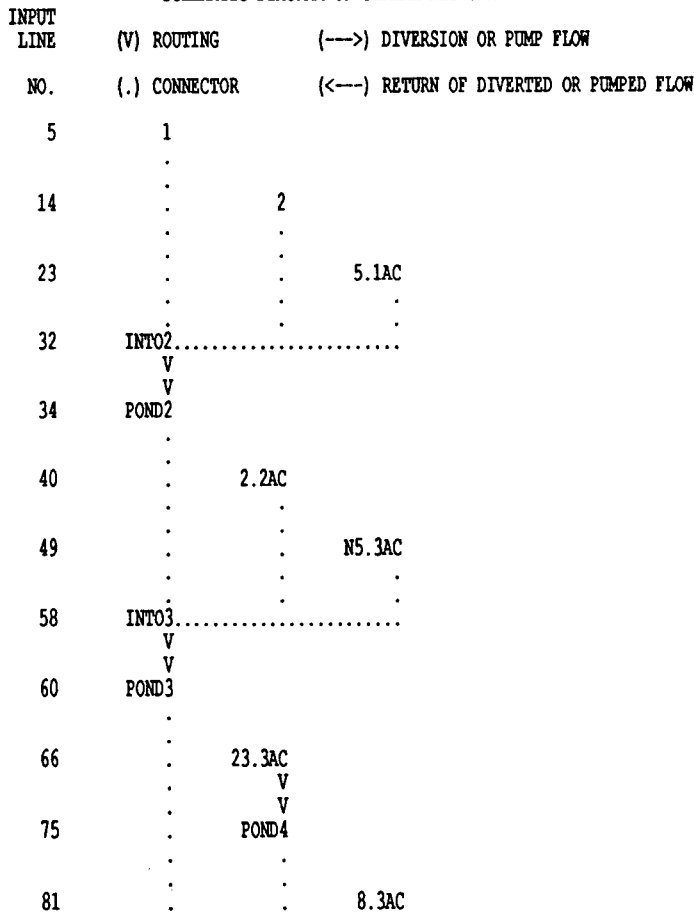
LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

81 KK 8.3AC
 82 BA .01297
 83 PB 7.8
 84 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 85 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865

86	PC	0.880	0.890	0.900	0.910	0.916	0.925	0.934	0.943	0.952	0.958
87	PC	0.964	0.970	0.976	0.982	0.988	0.994	1.000			
88	LS	0	85								
89	UD	.15									
	*	COMBINED INFLOW HYDROGRAPH FOR FLOW INTO POND NO. 5									
90	KK	INTO5									
91	HC	3									
	*	STAGE STORAGE RELATIONSHIP FOR POND NO. 5 FOR 48" PIPE									
92	KK	POND5									
93	RS	1	ELEV	1335.0							
94	SA	2.5	3.4								
95	SE	1335.0	1340.0								
96	SQ	0	45	60	75	90	101	120	135		
97	SE	1335.0	1336.0	1336.7	1337.48	1338.34	1339.04	1340.34	1341.49		
	*	PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM S. PART 5.3 AC. BASIN									
98	KK	S5.3AC									
99	BA	.00328									
100	PB	5.0									
101	PC	0.08	0.09	0.10	0.11	0.12	0.133	0.147	0.163	0.181	0.204
102	PC	0.235	0.283	0.663	0.735	0.772	0.799	0.820	0.835	0.850	0.865
103	PC	0.880	0.890	0.900	0.910	0.916	0.925	0.934	0.943	0.952	0.958
104	PC	0.964	0.970	0.976	0.982	0.988	0.994	1.000			
105	LS	0	75								
106	UD	0.15									
	*	COMBINED INFLOW HYDROGRAPH FOR FLOW INTO POND NO. 6									
107	KK	INTO6									
108	HC	2									
	*	STAGE STORAGE RELATIONSHIP FOR POND NO. 6 FOR 8' WIER									
109	KK	POND6									
110	RS	1	ELEV	1334.0							
111	SA	0.3	0.6								
112	SE	1334.0	1339.0								
113	SS	1334.0	8	3.0	1.5						
114	ZZ										

1

SCHEMATIC DIAGRAM OF STREAM NETWORK



```

90      INT05.....
      V
      V
92      POND5
      .
      .
98      .      S5.3AC
      .
      .
107     INT06.....
      V
      V
109     POND6
  
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```

1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
*   MAY 1991                       *
*   VERSION 4.0.1E                 *
*   Lahey F77L-EM/32 version 5.01 *
*   Dodson & Associates, Inc.     *
*   RUN DATE 02/14/95 TIME 11:21:18 *
*****
  
```

```

*****
*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
*   609 SECOND STREET          *
*   DAVIS, CALIFORNIA 95616    *
*   (916) 551-1748            *
*
*****
  
```

REFLECTION RIDGE 9TH ADD. -- DETENTION STORAGE ANALYSIS, 100-YR STORM

```

4 IO      OUTPUT CONTROL VARIABLES
          IPRNT      3 PRINT CONTROL
          IPLOT      0 PLOT CONTROL
          QSCAL      0. HYDROGRAPH PLOT SCALE

IT        HYDROGRAPH TIME DATA
          NMIN       6 MINUTES IN COMPUTATION INTERVAL
          IDATE      29SEP92 STARTING DATE
          ITIME      0600 STARTING TIME
          NQ         181 NUMBER OF HYDROGRAPH ORDINATES
          NDDATE     30SEP92 ENDING DATE
          NDTIME     0000 ENDING TIME
          ICENT      19 CENTURY MARK

          COMPUTATION INTERVAL 0.10 HOURS
          TOTAL TIME BASE     18.00 HOURS
  
```

```

ENGLISH UNITS
DRAINAGE AREA      SQUARE MILES
PRECIPITATION DEPTH INCHES
LENGTH, ELEVATION FEET
FLOW               CUBIC FEET PER SECOND
STORAGE VOLUME    ACRE-FEET
SURFACE AREA      ACRES
TEMPERATURE       DEGREES FAHRENHEIT
  
```

*** **

```

*****
*
*
5 KK      *      1 *
*
*****
  
```

```

3 IN      TIME DATA FOR INPUT TIME SERIES
          JXMIN      30 TIME INTERVAL IN MINUTES
          JXDATE     29SEP92 STARTING DATE
          JXTIME     600 STARTING TIME
  
```

SUBBASIN RUNOFF DATA

```

6 BA      SUBBASIN CHARACTERISTICS
          TAREA      0.06 SUBBASIN AREA
  
```


17 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.08	0.08	0.08	0.08	0.08
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

21 LS SCS LOSS RATE
 STRL 1.28 INITIAL ABSTRACTION
 CRVNER 61.00 CURVE NUMBER
 RTIMP 38.00 PERCENT IMPERVIOUS AREA

22 UD SCS DIMENSIONLESS UNITGRAPH
 TLAG 0.15 LAG

 UNIT HYDROGRAPH
 10 END-OF-PERIOD ORDINATES
 20. 42. 28. 12. 5. 2. 1. 0. 0. 0.
 *** **

HYDROGRAPH AT STATION 2
 TOTAL RAINFALL = 7.80, TOTAL LOSS = 2.79, TOTAL EXCESS = 5.01

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	18.00-HR
46.	6.00	7.	3.	3.	3.
		(INCHES) 3.828	4.987	4.987	4.987
		(AC-FT) 4.	5.	5.	5.

CUMULATIVE AREA = 0.02 SQ MI

 * *
 23 KK * 5.1AC *
 * *

3 IN TIME DATA FOR INPUT TIME SERIES
 JXMIN 30 TIME INTERVAL IN MINUTES
 JXDATE 29SEP92 STARTING DATE
 JXTIME 600 STARTING TIME

SUBBASIN RUNOFF DATA

24 BA SUBBASIN CHARACTERISTICS
 TAREA 0.01 SUBBASIN AREA

PRECIPITATION DATA

25 PB STORM 7.80 BASIN TOTAL PRECIPITATION

26 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

*** **

 * *
 34 KK * POND2 *
 * *

HYDROGRAPH ROUTING DATA

35 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1345.40 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

36 SA AREA 1.3 1.9

37 SE ELEVATION 1345.40 1349.00

38 SQ DISCHARGE 0. 72. 84. 94. 108.

39 SE ELEVATION 1345.40 1348.10 1349.15 1355.08 1359.49

COMPUTED STORAGE-ELEVATION DATA

STORAGE 0.00 5.73
 ELEVATION 1345.40 1349.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE 0.00 4.09 5.73 6.01 20.98 37.38
 OUTFLOW 0.00 72.00 82.29 84.00 94.00 108.00
 ELEVATION 1345.40 1348.10 1349.00 1349.15 1355.08 1359.49

*** **

HYDROGRAPH AT STATION POND2

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW			
		6-HR	24-HR	72-HR	18.00-HR
79.	6.40	29.	13.	13.	13.
		(INCHES) 3.217	4.161	4.161	4.161
		(AC-FT) 15.	19.	19.	19.

PEAK STORAGE + (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	18.00-HR
5.	6.40	2.	1.	1.	1.

PEAK STAGE + (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	18.00-HR
1348.68	6.40	1346.53	1345.88	1345.88	1345.88

CUMULATIVE AREA = 0.08 SQ MI

*** **

 * *
 40 KK * 2.2AC *
 * *

3 IN TIME DATA FOR INPUT TIME SERIES
 JXMIN 30 TIME INTERVAL IN MINUTES
 JXDATE 29SEP92 STARTING DATE
 JXTIME 600 STARTING TIME

+ 89. 6.10 32. 14. 14. 14.
 (INCHES) 3.220 4.148 4.148 4.148
 (AC-FT) 16. 21. 21. 21.

CUMULATIVE AREA = 0.09 SQ MI

*** **

 * *
 60 KK * POND3 *
 * *

HYDROGRAPH ROUTING DATA

61 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1339.00 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

62 SA AREA 0.4 0.7

63 SE ELEVATION 1339.00 1346.00

64 SQ DISCHARGE 0. 15. 30. 45. 60. 75. 90. 120. 135.

65 SE ELEVATION 1339.00 1339.21 1339.85 1340.91 1342.39 1344.30 1346.63 1352.57 1356.17

COMPUTED STORAGE-ELEVATION DATA

STORAGE 0.00 3.80
 ELEVATION 1339.00 1346.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE 0.00 0.08 0.35 0.83 1.58 2.68 3.80 4.25 9.53 13.74
 OUTFLOW 0.00 15.00 30.00 45.00 60.00 75.00 85.94 90.00 120.00 135.00
 ELEVATION 1339.00 1339.21 1339.85 1340.91 1342.39 1344.30 1346.00 1346.63 1352.57 1356.17

*** **

HYDROGRAPH AT STATION POND3

PEAK FLOW TIME MAXIMUM AVERAGE FLOW
 + (CFS) (HR) 6-HR 24-HR 72-HR 18.00-HR
 + 69. 7.00 (CFS) 32. 14. 14. 14.
 (INCHES) 3.220 4.143 4.143 4.143
 (AC-FT) 16. 21. 21. 21.

PEAK STORAGE TIME MAXIMUM AVERAGE STORAGE
 + (AC-FT) (HR) 6-HR 24-HR 72-HR 18.00-HR
 2. 7.00 1. 0. 0. 0.

PEAK STAGE TIME MAXIMUM AVERAGE STAGE
 + (FEET) (HR) 6-HR 24-HR 72-HR 18.00-HR
 1343.59 7.00 1340.49 1339.54 1339.54 1339.54

CUMULATIVE AREA = 0.09 SQ MI

*** **

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HYDROGRAPH ROUTING DATA

76 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1345.00 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

77 SA AREA 0.9 1.4

78 SE ELEVATION 1345.00 1349.00

79 SQ DISCHARGE 0. 15. 18. 20. 24.

80 SE ELEVATION 1345.00 1345.86 1348.88 1351.20 1356.57

COMPUTED STORAGE-ELEVATION DATA

STORAGE 0.00 4.56
 ELEVATION 1345.00 1349.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE 0.00 0.82 4.40 4.56 7.99 19.63
 OUTFLOW 0.00 15.00 18.00 18.10 20.00 24.00
 ELEVATION 1345.00 1345.86 1348.88 1349.00 1351.20 1356.57

*** *** *** *** ***

HYDROGRAPH AT STATION POND4

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	18.00-HR	
18.	6.70	15.	6.	6.	6.	
		(INCHES)	3.887	4.782	4.782	4.782
		(AC-FT)	8.	9.	9.	9.

PEAK STORAGE + (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	18.00-HR
4.	6.70	2.	1.	1.	1.

PEAK STAGE + (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	18.00-HR
1348.51	6.70	1347.06	1345.75	1345.75	1345.75

CUMULATIVE AREA = 0.04 SQ MI

*** **

 *
 * 8.3AC *
 *

3 IN TIME DATA FOR INPUT TIME SERIES
 JKMIN 30 TIME INTERVAL IN MINUTES
 JKDATE 29SEP92 STARTING DATE
 JXTIME 600 STARTING TIME

SUBBASIN RUNOFF DATA

82 BA SUBBASIN CHARACTERISTICS
 TAREA 0.01 SUBBASIN AREA

PRECIPITATION DATA

83 PB STORM 7.80 BASIN TOTAL PRECIPITATION

84 PI INCREMENTAL PRECIPITATION PATTERN

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 * *
 92 KK * POND5 *
 * *

HYDROGRAPH ROUTING DATA

93 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1335.00 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

94 SA AREA 2.5 3.4

95 SE ELEVATION 1335.00 1340.00

96 SQ DISCHARGE 0. 45. 60. 75. 90. 101. 120. 135.

97 SE ELEVATION 1335.00 1336.00 1336.70 1337.48 1338.34 1339.04 1340.34 1341.49

COMPUTED STORAGE-ELEVATION DATA

STORAGE 0.00 14.69
 ELEVATION 1335.00 1340.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE 0.00 2.58 4.49 6.73 9.31 11.52 14.69 15.86 19.98
 OUTFLOW 0.00 45.00 60.00 75.00 90.00 101.00 115.03 120.00 135.00
 ELEVATION 1335.00 1336.00 1336.70 1337.48 1338.34 1339.04 1340.00 1340.34 1341.49

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HYDROGRAPH AT STATION POND5

PEAK FLOW TIME MAXIMUM AVERAGE FLOW
 + (CFS) (HR) 6-HR 24-HR 72-HR 18.00-HR
 + 73. 7.80 (CFS) 53. 23. 23. 23.
 (INCHES) 3.450 4.419 4.419 4.419
 (AC-FT) 26. 34. 34. 34.

PEAK STORAGE TIME MAXIMUM AVERAGE STORAGE
 + (AC-FT) (HR) 6-HR 24-HR 72-HR 18.00-HR
 6. 7.80 4. 2. 2. 2.

PEAK STAGE TIME MAXIMUM AVERAGE STAGE
 + (FEET) (HR) 6-HR 24-HR 72-HR 18.00-HR
 1337.36 7.80 1336.48 1335.60 1335.60 1335.60

CUMULATIVE AREA = 0.14 SQ MI

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 98 KK * S5.3AC *
 * *

3 IN TIME DATA FOR INPUT TIME SERIES
 JXMIN 30 TIME INTERVAL IN MINUTES
 JXDATE 29SEP92 STARTING DATE

HYDROGRAPH AT STATION INTO6

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	18.00-HR	
+ 73.	7.80	53.	23.	23.	23.	
		(INCHES)	3.414	4.375	4.375	4.375
		(AC-FT)	27.	34.	34.	34.

CUMULATIVE AREA = 0.15 SQ MI

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* *
109 KK * POND6 *
* *

HYDROGRAPH ROUTING DATA

110 RS	STORAGE ROUTING		
	NSTPS	1	NUMBER OF SUBREACHES
	ITYP	ELEV	TYPE OF INITIAL CONDITION
	RSVRIC	1334.00	INITIAL CONDITION
	X	0.00	WORKING R AND D COEFFICIENT
111 SA	AREA	0.3	0.6
112 SE	ELEVATION	1334.00	1339.00
113 SS	SPILLWAY		
	CREL	1334.00	SPILLWAY CREST ELEVATION
	SPWID	8.00	SPILLWAY WIDTH
	COOW	3.00	WEIR COEFFICIENT
	EXPW	1.50	EXPONENT OF HEAD

COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	2.21
ELEVATION	1334.00	1339.00

COMPUTED OUTFLOW-ELEVATION DATA

OUTFLOW	0.00	0.00	0.05	0.37	1.24	2.94	5.75	9.94	15.78	23.56
ELEVATION	1334.00	1334.00	1334.02	1334.06	1334.14	1334.25	1334.39	1334.56	1334.76	1334.99
OUTFLOW	33.54	46.01	61.24	79.50	101.08	126.25	155.28	188.46	226.05	268.33
ELEVATION	1335.25	1335.54	1335.87	1336.22	1336.61	1337.02	1337.47	1337.95	1338.46	1339.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.00	0.02	0.04	0.08	0.12	0.17	0.24	0.32	0.42
OUTFLOW	0.00	0.05	0.37	1.24	2.95	5.75	9.94	15.78	23.56	33.54
ELEVATION	1334.00	1334.02	1334.06	1334.14	1334.25	1334.39	1334.56	1334.76	1334.99	1335.25
STORAGE	0.52	0.65	0.80	0.96	1.15	1.37	1.62	1.89	2.21	
OUTFLOW	46.01	61.24	79.50	101.08	126.25	155.28	188.45	226.04	268.33	
ELEVATION	1335.54	1335.87	1336.22	1336.61	1337.02	1337.47	1337.95	1338.46	1339.00	

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HYDROGRAPH AT STATION POND6

PEAK FLOW + (CFS)	TIME (HR)	MAXIMUM AVERAGE FLOW				
		6-HR	24-HR	72-HR	18.00-HR	
+ 73.	7.90	53.	23.	23.	23.	
		(INCHES)	3.409	4.356	4.356	4.356
		(AC-FT)	26.	34.	34.	34.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
+ (AC-FT)	(HR)		6-HR	24-HR	72-HR	18.00-HR
1.	7.90	1.	0.	0.	0.	

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
+ (FEET)	(HR)		6-HR	24-HR	72-HR	18.00-HR
1336.10	7.90	1335.68	1334.84	1334.84	1334.84	

CUMULATIVE AREA = 0.15 SQ MI

1

RUNOFF SUMMARY
 FLOW IN CUBIC FEET PER SECOND
 TIME IN HOURS, AREA IN SQUARE MILES

+	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
					6-HOUR	24-HOUR	72-HOUR			
+	HYDROGRAPH AT	1	110.	6.10	19.	8.	8.	0.06		
+	HYDROGRAPH AT	2	46.	6.00	7.	3.	3.	0.02		
+	HYDROGRAPH AT	5.1AC	23.	6.00	3.	1.	1.	0.01		
+	3 COMBINED AT	INTO2	172.	6.10	29.	13.	13.	0.08		
+	ROUTED TO	POND2	79.	6.40	29.	13.	13.	0.08	1348.68	6.40
+	HYDROGRAPH AT	2.2AC	12.	6.00	2.	1.	1.	0.00		
+	HYDROGRAPH AT	N5.3AC	7.	6.00	1.	0.	0.	0.00		
+	3 COMBINED AT	INTO3	89.	6.10	32.	14.	14.	0.09		
+	ROUTED TO	POND3	69.	7.00	32.	14.	14.	0.09	1343.59	7.00
+	HYDROGRAPH AT	23.3AC	104.	6.00	16.	6.	6.	0.04		
+	ROUTED TO	POND4	18.	6.70	15.	6.	6.	0.04	1348.51	6.70
+	HYDROGRAPH AT	8.3AC	45.	6.00	7.	3.	3.	0.01		
+	3 COMBINED AT	INTO5	105.	6.10	54.	23.	23.	0.14		
+	ROUTED TO	POND5	73.	7.80	53.	23.	23.	0.14	1337.36	7.80
+	HYDROGRAPH AT	S5.3AC	5.	6.00	1.	0.	0.	0.00		
+	2 COMBINED AT	INTO6	73.	7.80	53.	23.	23.	0.15		
+	ROUTED TO	POND6	73.	7.90	53.	23.	23.	0.15	1336.10	7.90

02-20-1995

N/2 incl.

02-20-1995

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1*****
*
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *
*   MAY 1991 *
*   VERSION 4.0.1E *
*   Lahey F77L-EM/32 version 5.01 *
*   Dodson & Associates, Inc. *
*   RUN DATE 02/14/95 TIME 10:16:56 *
*****

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*****
*
* U.S. ARMY CORPS OF ENGINEERS *
* HYDROLOGIC ENGINEERING CENTER *
* 609 SECOND STREET *
* DAVIS, CALIFORNIA 95616 *
* (916) 551-1748 *
*
*****

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X X XXXXXX XXXX XXX

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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.
 THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION
 NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,
 DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION
 KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1

HEC-1 INPUT

PAGE 1

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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
1 ID REFLECTION RIDGE 9TH ADD. -- DETENTION STORAGE ANALYSIS, 100-YR STORM
* T:\DAR\KSTNS3.IB1
*** LIST ***
*** FREE ***
*DIAGRAM
2 IT 6 29SEP92 0600 0 29SEP92 2400
3 IN 30 29SEP92 0600
4 IO 3 0
* PARAMETERS FOR HYDROGRAPH FOR FLOW THROUGH 42" RCP
5 KK 1
6 BA .0594
7 PB 6.5
8 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
9 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
10 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
11 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
12 LS 0 61 38
13 UD 0.24
* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED AT THE EXISTING POND
14 KK 2
15 BA .0172
16 PB 7.8
17 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
18 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
19 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
20 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
21 LS 0 61 38
22 UD 0.15
* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM 5.1 AC. BASIN
23 KK 5.1AC
24 BA .00797
25 PB 7.8
26 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
27 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
28 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
29 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
30 LS 0 75 0
31 UD 0.15
* COMBINED FLOW INFLOW HYDROGRAPH AT POND NO. 2

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* LAKES 1 & 2 ARE ONE LAKE

32 KK INTO2
 33 HC 3
 * STAGE STORAGE RELATIONSHIP FOR POND NO. 2 FOR 42" RCP

34 KK POND2
 35 RS 1 ELEV 1345.4
 36 SA 1.3 1.9
 37 SE 1345.4 1349.0
 38 SQ 0 72 84 94 108
 39 SE 1345.4 1348.10 1349.15 1355.08 1359.49

* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM 2.2 AC. BASIN
 REC-1 INPUT

1

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

40 KK 2.2AC
 41 BA .0034
 42 PB 7.8
 43 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 44 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 45 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 46 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 47 LS 0 88 0
 48 UD 0.15

* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM N. PART 5.3 AC. BASIN

49 KK N5.3AC
 50 BA 0.005
 51 PB 5.0
 52 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 53 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 54 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 55 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 56 LS 0 75 0
 57 UD 0.15

* COMBINED FLOW INFLOW HYDROGRAPH AT POND. NO. 3

58 KK INTO3
 59 HC 3
 * STAGE STORAGE RELATIONSHIP FOR POND. NO. 3. FOR 36" RCP OUTLET

60 KK POND3
 61 RS 1 ELEV 1339.0
 62 SA .4 .7
 63 SE 1339.0 1346.0
 64 SQ 0 15 30 45 60 75 90 120 135
 65 SE 1339.0 1339.21 1339.85 1340.91 1342.39 1344.3 1346.63 1352.57 1356.17

* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM 23.3 AC. BASIN

66 KK 23.3AC
 67 BA .03641
 68 PB 7.8
 69 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 70 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 71 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 72 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 73 LS 0 75
 74 UD 0.15

* STAGE STORAGE RELATIONSHIP FOR POND NO. 4 FOR 18" OUTLET

75 KK POND4
 76 RS 1 ELEV 1345.0
 77 SA 0.9 1.4
 78 SE 1345.0 1349.0
 79 SQ 0 15 18 20 24
 80 SE 1345.0 1345.86 1348.88 1351.2 1356.57

* PARAMETERS FRO HYDROGRAPH FOR FLOW COLLECTED FROM 8.3 AC. BASIN
 REC-1 INPUT

1

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

81 KK 8.3AC
 82 BA .01297
 83 PB 7.8
 84 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 85 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865

86 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 87 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 88 LS 0 85
 89 UD .15

* PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM N1/2 OF 1/4 SEC.

90 KK N1/2
 91 BA .07813
 92 PB 7.8
 93 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 94 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 95 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 96 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 97 LS 0 71
 98 UD .18

* COMBINED INFLOW HYDROGRAPH FOR FLOW INTO POND NO. 5

99 KK INTO5
 100 HC 4
 * STAGE STORAGE RELATIONSHIP FOR POND NO. 5 FOR 48" OUTLET PIPE

101 KK POND5
 102 RS 1 ELEV 1335.0
 103 SA 3.8 4.5
 104 SE 1335.0 1340.0
 105 SQ 0 45 60 75 90 101 120 135
 106 SE 1335.0 1336.0 1336.7 1337.48 1338.34 1339.04 1340.34 1341.49
 * PARAMETERS FOR HYDROGRAPH FOR FLOW COLLECTED FROM S. PART 5.3 AC. BASIN

107 KK S5.3AC
 108 BA .00328
 109 PB 5.0
 110 PC 0.08 0.09 0.10 0.11 0.12 0.133 0.147 0.163 0.181 0.204
 111 PC 0.235 0.283 0.663 0.735 0.772 0.799 0.820 0.835 0.850 0.865
 112 PC 0.880 0.890 0.900 0.910 0.916 0.925 0.934 0.943 0.952 0.958
 113 PC 0.964 0.970 0.976 0.982 0.988 0.994 1.000
 114 LS 0 75
 115 UD 0.15

* COMBINED INFLOW HYDROGRAPH FOR FLOW INTO POND NO. 6

116 KK INTO6
 117 HC 2
 * STAGE STORAGE RELATIONSHIP FOR POND NO. 6 FOR 8' WIER
 HEC-1 INPUT

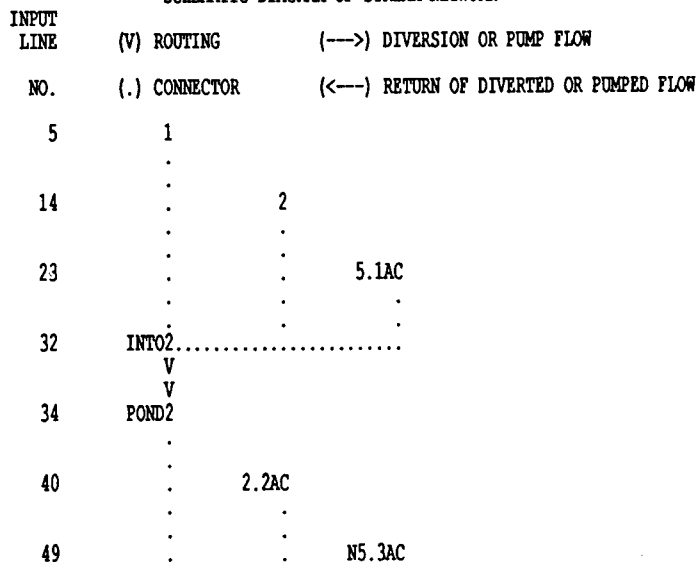
1

LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

118 KK POND6
 119 RS 1 ELEV 1334.0
 120 SA 0.3 0.6
 121 SE 1334.0 1339.0
 122 SS 1334.0 8 3.0 1.5
 123 ZZ

1

SCHEMATIC DIAGRAM OF STREAM NETWORK



		HYDROGRAPH AT STATION		INTO2		
PEAK FLOW	TIME			MAXIMUM AVERAGE FLOW		
+ (CFS)	(HR)	6-HR	24-HR	72-HR	18.00-HR	
+ 172.	6.10	(CFS)	29.	13.	13.	13.
		(INCHES)	3.242	4.212	4.212	4.212
		(AC-FT)	15.	19.	19.	19.

CUMULATIVE AREA = 0.08 SQ MI

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 * *
 34 KK * POND2 *
 * *

HYDROGRAPH ROUTING DATA

35 RS	STORAGE ROUTING	1 NUMBER OF SUBREACHES				
	NSTPS	ELEV TYPE OF INITIAL CONDITION				
	ITYP	INITIAL CONDITION				
	RSVRIC	1345.40	0.00 WORKING R AND D COEFFICIENT			
	X					
36 SA	AREA	1.3	1.9			
37 SE	ELEVATION	1345.40	1349.00			
38 SQ	DISCHARGE	0.	72.	84.	94.	108.
39 SE	ELEVATION	1345.40	1348.10	1349.15	1355.08	1359.49

COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	5.73
ELEVATION	1345.40	1349.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	4.09	5.73	6.01	20.98	37.38
OUTFLOW	0.00	72.00	82.29	84.00	94.00	108.00
ELEVATION	1345.40	1348.10	1349.00	1349.15	1355.08	1359.49

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HYDROGRAPH AT STATION POND2

		HYDROGRAPH AT STATION		POND2		
PEAK FLOW	TIME			MAXIMUM AVERAGE FLOW		
+ (CFS)	(HR)	6-HR	24-HR	72-HR	18.00-HR	
+ 79.	6.40	(CFS)	29.	13.	13.	13.
		(INCHES)	3.217	4.161	4.161	4.161
		(AC-FT)	15.	19.	19.	19.
PEAK STORAGE	TIME			MAXIMUM AVERAGE STORAGE		
+ (AC-FT)	(HR)	6-HR	24-HR	72-HR	18.00-HR	
5.	6.40	2.	1.	1.	1.	
PEAK STAGE	TIME			MAXIMUM AVERAGE STAGE		
+ (FEET)	(HR)	6-HR	24-HR	72-HR	18.00-HR	
1348.68	6.40	1346.53	1345.88	1345.88	1345.88	

CUMULATIVE AREA = 0.08 SQ MI

58 KK * INTO3 *
 * *

59 HC HYDROGRAPH COMBINATION
 ICOMP 3 NUMBER OF HYDROGRAPHS TO COMBINE

*** *** *** *** ***

HYDROGRAPH AT STATION INTO3

PEAK FLOW + (CFS)	TIME (HR)	(CFS)	MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	18.00-HR
+ 89.	6.10	32.	14.	14.	14.	
		(INCHES) 3.220	4.148	4.148	4.148	
		(AC-FT) 16.	21.	21.	21.	

CUMULATIVE AREA = 0.09 SQ MI

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 * *
 60 KK * POND3 *
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HYDROGRAPH ROUTING DATA

61 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1339.00 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

62 SA	AREA	0.4	0.7							
63 SE	ELEVATION	1339.00	1346.00							
64 SQ	DISCHARGE	0.	15.	30.	45.	60.	75.	90.	120.	135.
65 SE	ELEVATION	1339.00	1339.21	1339.85	1340.91	1342.39	1344.30	1346.63	1352.57	1356.17

COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	3.80
ELEVATION	1339.00	1346.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.08	0.35	0.83	1.58	2.68	3.80	4.25	9.53	13.74
OUTFLOW	0.00	15.00	30.00	45.00	60.00	75.00	85.94	90.00	120.00	135.00
ELEVATION	1339.00	1339.21	1339.85	1340.91	1342.39	1344.30	1346.00	1346.63	1352.57	1356.17

*** *** *** *** ***

HYDROGRAPH AT STATION POND3

PEAK FLOW + (CFS)	TIME (HR)	(CFS)	MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	18.00-HR
+ 69.	7.00	32.	14.	14.	14.	
		(INCHES) 3.220	4.143	4.143	4.143	
		(AC-FT) 16.	21.	21.	21.	

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	18.00-HR

+ 104. 6.00 16. 6. 6. 6.
 (INCHES) 4.000 4.842 4.842 4.842
 (AC-FT) 8. 9. 9. 9.

CUMULATIVE AREA = 0.04 SQ MI

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 75 KK * POND4 *
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HYDROGRAPH ROUTING DATA

76 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1345.00 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

77 SA AREA 0.9 1.4

78 SE ELEVATION 1345.00 1349.00

79 SQ DISCHARGE 0. 15. 18. 20. 24.

80 SE ELEVATION 1345.00 1345.86 1348.88 1351.20 1356.57

COMPUTED STORAGE-ELEVATION DATA

STORAGE 0.00 4.56
 ELEVATION 1345.00 1349.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE 0.00 0.82 4.40 4.56 7.99 19.63
 OUTFLOW 0.00 15.00 18.00 18.10 20.00 24.00
 ELEVATION 1345.00 1345.86 1348.88 1349.00 1351.20 1356.57

*** **

HYDROGRAPH AT STATION POND4

PEAK FLOW TIME MAXIMUM AVERAGE FLOW
 + (CFS) (HR) 6-HR 24-HR 72-HR 18.00-HR
 + 18. 6.70 (CFS) 15. 6. 6. 6.
 (INCHES) 3.887 4.782 4.782 4.782
 (AC-FT) 8. 9. 9. 9.

PEAK STORAGE TIME MAXIMUM AVERAGE STORAGE
 + (AC-FT) (HR) 6-HR 24-HR 72-HR 18.00-HR
 4. 6.70 2. 1. 1. 1.

PEAK STAGE TIME MAXIMUM AVERAGE STAGE
 + (FEET) (HR) 6-HR 24-HR 72-HR 18.00-HR
 1348.51 6.70 1347.06 1345.75 1345.75 1345.75

CUMULATIVE AREA = 0.04 SQ MI

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 81 KK * 8.3AC *
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***          ***          ***          ***          ***
          HYDROGRAPH AT STATION  INTO5
PEAK FLOW  TIME          MAXIMUM AVERAGE FLOW
+ (CFS)    (HR)          6-HR      24-HR      72-HR      18.00-HR
+ 294.     6.10          (CFS)
          (INCHES)    84.      35.      35.      35.
          (AC-FT)    3.560   4.443   4.443   4.443
          42.      52.      52.      52.
          CUMULATIVE AREA = 0.22 SQ MI
    
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*          *
101 KK    *   POND5 *
*          *
*****
    
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          HYDROGRAPH ROUTING DATA
102 RS    STORAGE ROUTING
          NSTPS      1  NUMBER OF SUBREACHES
          ITYP      ELEV TYPE OF INITIAL CONDITION
          RSVRIC    1335.00 INITIAL CONDITION
          X          0.00 WORKING R AND D COEFFICIENT
103 SA    AREA      3.8    4.5
104 SE    ELEVATION  1335.00 1340.00
105 SQ    DISCHARGE  0.     45.    60.    75.    90.    101.   120.   135.
106 SE    ELEVATION  1335.00 1336.00 1336.70 1337.48 1338.34 1339.04 1340.34 1341.49
    
```

COMPUTED STORAGE-ELEVATION DATA

```

STORAGE    0.00    20.73
ELEVATION  1335.00 1340.00
    
```

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

```

STORAGE    0.00    3.87    6.66    9.84    13.45    16.47    20.73    22.26    27.59
OUTFLOW    0.00    45.00   60.00   75.00   90.00   101.00   115.03   120.00   135.00
ELEVATION  1335.00 1336.00 1336.70 1337.48 1338.34 1339.04 1340.00 1340.34 1341.49
    
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          HYDROGRAPH AT STATION  POND5
PEAK FLOW  TIME          MAXIMUM AVERAGE FLOW
+ (CFS)    (HR)          6-HR      24-HR      72-HR      18.00-HR
+ 95.     7.70          (CFS)
          (INCHES)    78.      34.      34.      34.
          (AC-FT)    3.269   4.354   4.354   4.354
          38.      51.      51.      51.
PEAK STORAGE TIME          MAXIMUM AVERAGE STORAGE
+ (AC-FT)    (HR)          6-HR      24-HR      72-HR      18.00-HR
+ 15.     7.70          11.      4.      4.      4.
PEAK STAGE  TIME          MAXIMUM AVERAGE STAGE
+ (FEET)    (HR)          6-HR      24-HR      72-HR      18.00-HR
+ 1338.65   7.70          1337.66 1336.08 1336.08 1336.08
          CUMULATIVE AREA = 0.22 SQ MI
    
```

 * *
 116 KK * INTO6 *
 * *

117 HC HYDROGRAPH COMBINATION
 ICOMP 2 NUMBER OF HYDROGRAPHS TO COMBINE

***	***	***	***	***	***
HYDROGRAPH AT STATION INTO6					
PEAK FLOW	TIME	MAXIMUM AVERAGE FLOW			
+ (CFS)	(HR)	6-HR	24-HR	72-HR	18.00-HR
+ 95.	7.70	78.	35.	35.	35.
	(INCHES)	3.246	4.326	4.326	4.326
	(AC-FT)	39.	52.	52.	52.
CUMULATIVE AREA = 0.22 SQ MI					

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 * *
 118 KK * POND6 *
 * *

HYDROGRAPH ROUTING DATA

119 RS STORAGE ROUTING
 NSTPS 1 NUMBER OF SUBREACHES
 ITYP ELEV TYPE OF INITIAL CONDITION
 RSVRIC 1334.00 INITIAL CONDITION
 X 0.00 WORKING R AND D COEFFICIENT

120 SA AREA 0.3 0.6

121 SE ELEVATION 1334.00 1339.00

122 SS SPILLWAY
 CREL 1334.00 SPILLWAY CREST ELEVATION
 SPWID 8.00 SPILLWAY WIDTH
 COCW 3.00 WEIR COEFFICIENT
 EXPW 1.50 EXPONENT OF HEAD

COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	2.21
ELEVATION	1334.00	1339.00

COMPUTED OUTFLOW-ELEVATION DATA

OUTFLOW	0.00	0.00	0.05	0.37	1.24	2.94	5.75	9.94	15.78	23.56
ELEVATION	1334.00	1334.00	1334.02	1334.06	1334.14	1334.25	1334.39	1334.56	1334.76	1334.99
OUTFLOW	33.54	46.01	61.24	79.50	101.08	126.25	155.28	188.46	226.05	268.33
ELEVATION	1335.25	1335.54	1335.87	1336.22	1336.61	1337.02	1337.47	1337.95	1338.46	1339.00

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	0.00	0.00	0.02	0.04	0.08	0.12	0.17	0.24	0.32	0.42
OUTFLOW	0.00	0.05	0.37	1.24	2.95	5.75	9.94	15.78	23.56	33.54
ELEVATION	1334.00	1334.02	1334.06	1334.14	1334.25	1334.39	1334.56	1334.76	1334.99	1335.25
STORAGE	0.52	0.65	0.80	0.96	1.15	1.37	1.62	1.89	2.21	

OUTFLOW 46.01 61.24 79.50 101.08 126.25 155.28 188.45 226.04 268.33
 ELEVATION 1335.54 1335.87 1336.22 1336.61 1337.02 1337.47 1337.95 1338.46 1339.00

*** *** *** *** ***

HYDROGRAPH AT STATION POND6

PEAK FLOW + (CFS)	TIME (HR)	(CFS) (INCHES) (AC-FT)	MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	18.00-HR
95.	7.80	78. 3.240 39.	35. 4.309 51.	35. 4.309 51.	35. 4.309 51.	
PEAK STORAGE			MAXIMUM AVERAGE STORAGE			
+	(AC-FT)	TIME (HR)	6-HR	24-HR	72-HR	18.00-HR
+	1.	7.70	1.	0.	0.	0.
PEAK STAGE			MAXIMUM AVERAGE STAGE			
+	(FEET)	TIME (HR)	6-HR	24-HR	72-HR	18.00-HR
+	1336.50	7.80	1336.18	1335.12	1335.12	1335.12

CUMULATIVE AREA = 0.22 SQ MI

1

RUNOFF SUMMARY
 FLOW IN CUBIC FEET PER SECOND
 TIME IN HOURS, AREA IN SQUARE MILES

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
+	HYDROGRAPH AT								
+		1	110.	6.10	19.	8.	8.	0.06	
+	HYDROGRAPH AT								
+		2	46.	6.00	7.	3.	3.	0.02	
+	HYDROGRAPH AT								
+		5.1AC	23.	6.00	3.	1.	1.	0.01	
+	3 COMBINED AT								
+		INTO2	172.	6.10	29.	13.	13.	0.08	
+	ROUTED TO								
+		POND2	79.	6.40	29.	13.	13.	0.08	
+								1348.68	6.40
+	HYDROGRAPH AT								
+		2.2AC	12.	6.00	2.	1.	1.	0.00	
+	HYDROGRAPH AT								
+		N5.3AC	7.	6.00	1.	0.	0.	0.00	
+	3 COMBINED AT								
+		INTO3	89.	6.10	32.	14.	14.	0.09	
+	ROUTED TO								
+		POND3	69.	7.00	32.	14.	14.	0.09	
+								1343.59	7.00
+	HYDROGRAPH AT								
+		23.3AC	104.	6.00	16.	6.	6.	0.04	
+	ROUTED TO								
+		POND4	18.	6.70	15.	6.	6.	0.04	
+								1348.51	6.70
+	HYDROGRAPH AT								
+		8.3AC	45.	6.00	7.	3.	3.	0.01	
+	HYDROGRAPH AT								
+		N1/2	190.	6.00	30.	12.	12.	0.08	
+	4 COMBINED AT								
+		INTO5	294.	6.10	84.	35.	35.	0.22	

+	ROUTED TO	POND5	95.	7.70	78.	34.	34.	0.22		
+									1338.65	7.70
+	HYDROGRAPH AT	S5.3AC	5.	6.00	1.	0.	0.	0.00		
+	2 COMBINED AT	INTO6	95.	7.70	78.	35.	35.	0.22		
+	ROUTED TO	POND6	95.	7.80	78.	35.	35.	0.22		
+									1336.50	7.80

*** NORMAL END OF HEC-1 ***

Table 2-2.--Runoff curve numbers for selected agricultural, suburban, and urban land use. (Antecedent moisture condition II, and $I_a = 0.2S$)

LAND USE DESCRIPTION	HYDROLOGIC SOIL GROUP			
	A	B	C	D
Cultivated land ^{1/} : without conservation treatment	72	81	88	91
: with conservation treatment	62	71	76	81
Pasture or range land: poor condition	68	79	86	89
good condition	39	61	74	80
Meadow: good condition	30	58	71	78
Wood or Forest land: thin stand, poor cover, no mulch	45	66	77	83
good cover ^{2/}	25	55	70	77
Open Spaces, lawns, parks, golf courses, cemeteries, etc.				
good condition: grass cover on 75% or more of the area	39	61	74	80
fair condition: grass cover on 50% to 75% of the area	49	69	79	84
Commercial and business areas (85% impervious)	89	92	94	95
Industrial districts (72% impervious).	81	88	91	93
Residential: ^{3/}				
Average lot size		Average % Impervious ^{4/}		
1/8 acre or less	65	77	85	90
1/4 acre	38	61	75	83
1/3 acre	30	57	72	81
1/2 acre	25	54	70	80
1 acre	20	51	68	79
Paved parking lots, roofs, driveways, etc. ^{5/}	98	98	98	98
Streets and roads:				
paved with curbs and storm sewers ^{5/}	98	98	98	98
gravel	76	85	89	91
dirt	72	82	87	89

^{1/} For a more detailed description of agricultural land use curve numbers refer to National Engineering Handbook, Section 4, Hydrology, Chapter 9, Aug. 1972.

^{2/} Good cover is protected from grazing and litter and brush cover soil.

^{3/} Curve numbers are computed assuming the runoff from the house and driveway is directed towards the street with a minimum of roof water directed to lawns where additional infiltration could occur.

^{4/} The remaining pervious areas (lawn) are considered to be in good pasture condition for these curve numbers.

^{5/} In some warmer climates of the country a curve number of 95 may be used.

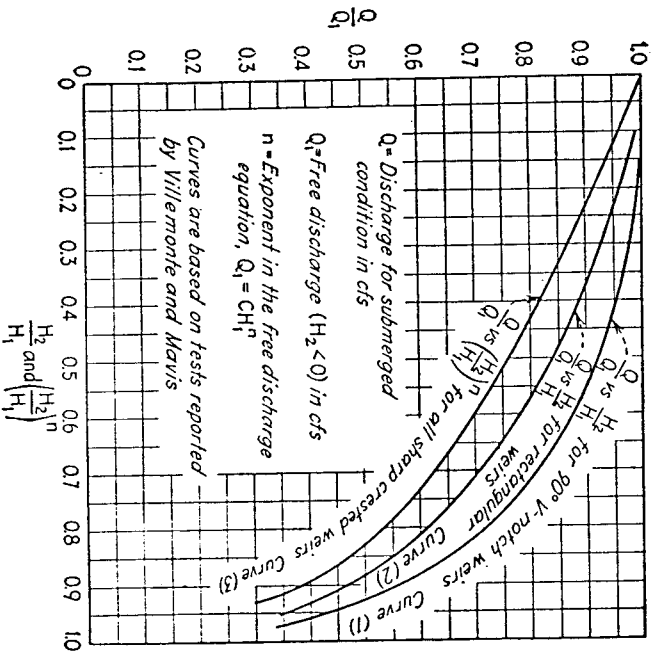
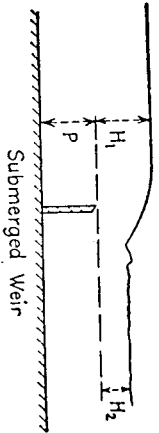


FIG. 5-5

the upstream side of the weir, H_1 , but also to the head on the downstream side, H_2 , and to a lesser extent, to the height of the weir crest above the floor of the channel, P . Early experiments by Francis (1848, 1883), Fteley and Stearns (1882), Bazin (1894), Cone (1916), and Cox (1928) have been summarized by Vennard and Weston.¹ They showed that the various test data could be presented in an orderly manner by selecting as variables Q/Q_1 and H_2/H_1 , where Q_1 is the discharge at the head H_1 , computed from the equation for free discharge (unsubmerged), which is expressed in general terms as follows:

$$Q_1 = CH_1^n \quad (5-49)$$

By plotting Q/Q_1 against H_2/H_1 , they found that the various data tended to fall on a single curve, except for small values of P/H_1 .

In 1947, Villemonte² presented the results of a series of tests on submerged sharp-crested weirs. He conducted tests on rectangular, triangular, parabolic, cusped, and proportional weirs. He showed that the results for all types could be represented by the simple equation

$$\frac{Q}{Q_1} = \left[1 - \left(\frac{H_2}{H_1} \right)^n \right]^{0.385} \quad (5-50)$$

where n is the exponent in the free-discharge equation [Eq. (5-49)], and the other terms are as previously defined. This equation was found to satisfy all test results, with a maximum deviation of 5 per cent for some of the individual test results.

In 1949, Mavis³ presented results of tests on rectangular, triangular, parabolic, circular, siltro, and cusped weirs. He found that a single equation could be used to express the results for all the tests. His equation with subscripts changed to conform with usage in this book is

$$\frac{Q}{Q_1} = 1 - \left(0.45S + \frac{0.40}{2(10-105S)} \right) \quad (5-51)$$

¹ John K. Vennard and Ray F. Weston, Submergence Effect on Sharp-crested Weirs, *Eng. News-Record*, June 3, 1943, p. 818.

² James R. Villemonte, Submerged-weir Discharge Studies, *Eng. News-Record*, Dec. 25, 1947, p. 866.

³ F. T. Mavis, Flow to Calculate Flow over Submerged Thin-plate Weirs, *Eng. News-Record*, July 7, 1949, p. 65.