RWCD REACH 3 INLET HYDROLOGY

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Subject: PROJ DEV MAINT - Inlet Hydrology, RWCD, Reach III
Hunt Road to Chandler Heights Road

Date: March 7, 1984

To: Ralph Arrington
State Conservation Engineer
Phoenix, Arizona

File Code: 390-11-13-19

The purpose of this analysis was to determine design flows for inlet structures along the RWCD, Reach 3, from Hunt Road upstream to Chandler Heights Road. The analysis is very similar to that made by the Maricopa County Flood Control District dated November 1983, except for a basic change in the flood routing assumption made with reference to direction of flow. In the Flood Control District analysis it was assumed that all flows from a selected portion of the subject area concentrated at Chandler Heights Road, and then flowed west along Chandler Heights to intersect the RWCD on the south side of the road.

In the SCS analysis, the capacity of the diversion channel located on the south side of Chandler Heights Road was estimated at 400 cfs, and it was assumed that any discharge exceeding this capacity would overtop the road and enter the RWCD north of the road via Sonogui Wash and Queen Creek channels.

This is similar to the assumption made by Bob Bartels in 1974 in computing the original design discharges for the RWCD. The only difference is that Bartels ignored the 400 cfs capacity of the diversion channel.

Although no additional analysis was made, the 100-year discharge of 1910 cfs (Excluding flow from FR) as developed by Bartels for flows north of Chandler Heights Road should be sufficient for design purposes. It might be increased to Q=2000 cfs to account for increase rainfall due to less areal reduction for the inlet drainage areas. An inlet would also be required for the 400 cfs discharge entering the RWCD on the south side of the road. Possibly two or three other inlets would be required between Chandler Heights Road and Hunt Road. One would be near the midsection of Section 27, Q_{100} = 17 cfs; one on the section line between Sections 27 and 33, Q_{100} = 443 cfs, and a possible third one in the southwest corner of Section 33, Q_{100} = 20 cfs (assuming about the same peak as estimated for the midpoint of Section 27, since this discharge was not actually calculated). This latter inlet might be included in the sediment basin already installed in Reach 2 for Sub Areas #1 and 1A.

It should be recognized that some of the Drainage Areas, Tc's, and CN's used in the present study differ from those used by Bartels in the original study (1974) and by the Flood Control District (1983), and these have been noted in

the documentation. Differences in peak discharges, however, are relatively small; therefore, the present peaks should be adequate for the design of the Inlets in the Study Reach.

Should you have problems interpreting either the input or output of the TR-20 program, please let me know. Copies of the TR-20 data, together with a schemetic map has been furnished to the WNTC Design Unit in Portland, Oregon for their use in the design of the inlet structures.

Respectfully submitted

Harry C. Millsaps

HARRY C. MILLSAPS
Hydraulic Engineer

cc: W. Wayne Killgore, ASTC(W), Phoenix, AZ
Gary Conaway, Hydraulic Engineer, Portland, OR

Bob Bartels:mn
August 27, 1974

sent to
CofE
1/23/75

WORK OUTLINE

RWCD DESIGN HYDROLOGY

1. Use Jim Malone's method of placing storm on watershed; i.e., start at north end and reduce rainfall as we go south. Same general procedure as May 23, 1973 run.

2. Use data developed by Jim on 24-hour area reduction factor, and as calculated by Wendall Styner in his memo of July 19, 1974 to determine design precipitation. (See Attachment No. 1)

Drainage Area Total Sq. mi.	Intervening Sq. mi.	Intervening Rainfall (Percent of Point)	Average Rainfall For Total Watershed (Percent of Point)
1	1	100	100
5	4	96.2	97
25	20	91.9	93
55	30	87.6	90
95	40	82.8	87
150	55	78.8	84
220	70	77.6	82
300	80	74.5	80
385	85	71.0	78
500	115	69.3	76

3. Use the following precipitation values for design of RWCD. From WB Rev TP 40 maps, use point rainfall halfway between Mesa and Apache Junction as representative of uncontrolled area.

Map Rainfall	Factor	Plotted Value	*Design Point
1% = 3.6 inches	1.00	3.6	3.70
4% = 2.8 inches	1.00	2.8	2.80
10% = 2.25 inches	.99	2.23	2.20
20% = 1.85 inches	.96	1.78	1.80
50% = 1.35 inches	.88	1.19	1.20

* (See Attachment No. 2)

4. For Runoff Curve Number Determination use the following procedures:

A. From original data used in 1973 TR-20 Run and General Soil Maps, it has been determined that the soils for the uncontrolled area between the dams and the RWCD, except the San Tan Mountains, are B soils.

B. Use the procedures shown in Hydrology Design Manual to determine RCN for present natural conditions; i.e., use the curves in the handbook for the natural vegetation existing today to determine the short duration RCN.

C. Reduce the short duration RCN for duration; i.e., if short duration RCN is 80 then the 24-hour RCN will be 71. (Actual value used is a 24-hour RCN of 75 for desert conditions.)

D. The 24-hour RCN will be used on all desert lands in both present and future conditions.

E. The Runoff Curve Number for irrigated agricultural land is estimated to be 50 to show effect of built-in storage of leveled fields.

F. For urban lands, use the RCN shown in the Mohave County manual for urban areas. These RCN will not be reduced for duration. The percent of impervious surfaces will be estimated based on housing density from the MAG data. Use the following to determine the RCN of urban areas: (Attachment No. 3)

Density of Housing Units Number/Square Mile	RCN
0 to 100	Same as natural conditions
100 to 300	75
300 to 600	77
600 to 1200	79
1200 to 2000	80
2000 +	81

5. To estimate the effect of urbanization on T_c, use Figure 15-3 NEH-4, along with Figure ~~3-3~~ 3-5 of Urban Hydrology (~~Hydrology Tech.~~ TR-55 DATED 1/75 Lew Note 1) to determine the amount to reduce the T_c under natural conditions:

Increase in RCN From its Natural (Rangeland) Condition	Ratio of After Urbanization to Natural Conditions (T_c)
1	0.90
2	0.85
4	0.75
6	0.60

Example: If velocity is 1.5 fps in natural condition and then the area is completely urbanized, the velocity in the future condition is $\frac{1.5}{0.6} = 2.5$ fps

or if original T_c was 1.0 hour, the future T_c is 1.0 (0.6) = 0.6 hour.

6. When Don Woodward was down, it was agreed that the Chap. 15 method did not reduce the T_c enough. The procedures used in Urban Hydrology CTU Hydrol Tech. Note No. 1 were used to farther reduce the T_c. It was decided during Don's visit that the maximum reduction we would use was 0.60 of natural T_c. (Based on change in RCN from 75 to 81.)

7. Where new data is available on X-section shape and size - revise the T_c based on the channel characteristics. Use X-section data from Buckhorn-Mesa Areal Mapping. Use 4.0 fps for Buckhorn-Mesa area north of Apache Trail.

8. For areas of undefined channels (alluvial fans), use Figure 15.2 of NEH 4 to determine velocity for T_c and reach routing Coef.

For slopes of 1% to 2%, this figure shows a velocity of 1.0 fps to 1.4 fps for alluvial fan areas. Use a maximum velocity of 1.5 fps for reach routing or insert X-section data for routing purposes. The August 4 estimate of T_c is based on 1.5 fps for all alluvial fans (including desert and agricultural land). Don Woodward agreed with using 1.5 fps.

9. In areas of defined washes; foothills; mountains; I used a velocity of 6.0 fps, until I got to undefined channels, and I then used 1.5 fps. This primarily applies to San Tan Mountain areas.

10. Based on conversations with Paul Monville, we will use a "V" of 5 fps for RWCD channel. Do not use Reservoir Program.

11. To evaluate the effect of future urbanization on the watershed, a two-step approach will be needed:

    A. First using MAG data for the year 2000, an uncorrected RCN for each subwatershed will be calculated, and a revised T_c based on this urbanization will be determined as explained in No. 5 item.

    B. To determine the final RCN of the subwatershed, it will be necessary to reduce the uncorrected RCN determined in (11. A) to show the effect of storage in the new subdivisions of one-half inch and one inch of runoff. The Figure A (next page) shows the estimate of how much to reduce the RCN based on the increase in housing units after 1975. (See Attachment No. 5 for derivation.)

12. Will need a total of three alternatives with three storms each analyzed. The storms to be analyzed are the 100-year, 25-year and 10-year storms. The alternates to be considered are Alt. 1 "Present Conditions", based on MAG 1975 data; "Future Conditions", based on MAG 2000 data; Alt. 2 using one-half inch of storage on new urban; and Alt. 3 would be with one inch of storage on new urban.

Feb 1984

RWCD, REACH III
SIDE INLETS
DRAINAGE AREAS

The drainage areas for the side inlets were developed using 7½-minute USGS Quad Sheet: Chandler Heights, Arizona. The reach investigated was from Hunt Road to Chandler Heights Road. The drainage was broken into 11 subareas with drainage areas as follows:

Subarea No.	Sq. Miles
1	6.16
1A	0.63
2	4.12
3	4.35
4	0.97
5	1.01
6	0.98
7	0.51
8	0.52
9	1.54
10	2.52

Subareas 1 and 1A were combined into a single unit and are actually a part of Reach II of the RWCD. They were investigated in this analysis since a portion of Subarea 2 was originally a part of Subareas 1 and 1A as analyzed by Bob Bartels in 1974. There are also other drainage boundary changes in this analysis as compared to those used by Mr Bartels. These are

shown on the map include as a part of this documentation.

The Maricopa County Flood Control District also did a study on the subject area. Their drainage boundaries are similar to those used in the present analysis except that in the present analysis a more detail breakdown was used and Subarea 1A is included in Reach II rather than Reach III (See Drainage Area Map and Flood Control District Map which follow.) A comparison of the Flood Control District and present Drainage Areas are as follows

Subareas		Drainage Areas		
SCS	FCD	SCS		FCD
1	WS 100	6.16		6.45
1A		0.63	4.75	
2	WS 101	4.12		4.66
3	WS 102	4.35		4.12
4	WS 103	0.97		1.00
5		1.01		
6	WS 105	0.98	3.02	3.04
7		0.51		
8		0.52		
9	WS-104	1.54	4.06	4.24
10		2.52		
		23.31		23.51

ARIZONA
RWCD REACH III

PLANIMETER 236-A
MAP SCALE 1:24,000

FEB. 1984
B. FUSNIAK

SUB. DRAINAGE AREA	PLANIMETERING: INITIAL READING	SINGLE: FIRST READING	SINGLE: DIFF. FROM INITIAL	THREE: THIRD READING	THREE: DIFF. FROM INITIAL	THREE: AVG.	CONVERSION FACTOR	AREA Acres/M²
1A	0.00	4.400		13.21		4.403	91.827	404.34A/0.63 M.
1 (PARTIAL)		22.60		67.68		22.56		2,071.62A/3.24 M.
— " —		20.39		61.09		20.3633		1,869.90 A/2.92 M.
1 TOTAL								3,941.52 A/6.16 M.
2		28.76		86.16		28.720		2,637.27A/4.12 M.
3		30.40		90.96		30.320		2,784.19A/4.35 M.
4		6.78		20.21		6.7367		618.61A/0.97 M.
5		7.09		21.10		7.0333		645.85A/1.01 M.
6		6.85		20.49		6.8300		627.18A/0.98 M.
7		3.59		10.61		3.5367		324.76A/0.51 M.
8		3.68		10.77		3.5900		329.66A/0.52 M.
9		10.79		32.30		10.7667		988.67A/1.54 M.
10		17.58		52.59		17.5300		1,609.73A/2.52 M.
TOTAL AREA (1 THRU 10)				487.17		162.39	91.827	14,911.79 A/23.30 M.

101

DA = 4.66 M² − .63 = 4.03 (1)
4.12 − (2)

P = 3.61"

Lag = 1.61 hrs.

L = 0.6 Tc

$T_c = \frac{L}{0.6} = \frac{1.61}{0.6} = 2.68$ hrs.

RCN = 79

102

DA = 4.12 M² 4.35 − (3)

P =

L = 1.64

$T_c = \frac{1.64}{0.6} = 2.73$ hrs.

RCN = 79

103

DA = 1 M² 0.97 − (4)

L = 3.92 hrs

$T_c = \frac{3.92}{0.6} = 6.5$ hrs. ?

RCN = 54

105

(3) (6) (7) (8)
1.01 + .98 + .51 + .52 = 3.02

DA = 3.04 M²

L = ?

Tc = ?

RCN = ? 54

computed using overland flow kinematic conditions

15700' Rainfall S 0.0037 n = 0.035 (1.5, 2.5)

104

(9) (10)
1.51 + 2.52 = 4.06

DA = 4.24 M²

L = ?

Tc = ?

RCN = 80

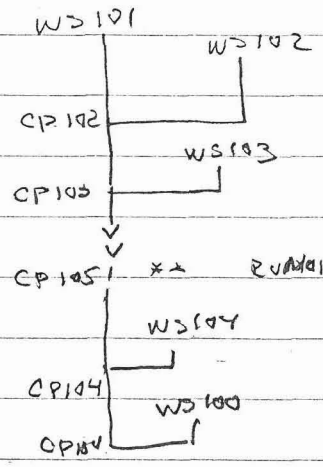
100

DA = 6.45 6.16 − (1)

L = 1.86

$T_c = \frac{1.86}{0.6} = 3.1$ hrs. ?

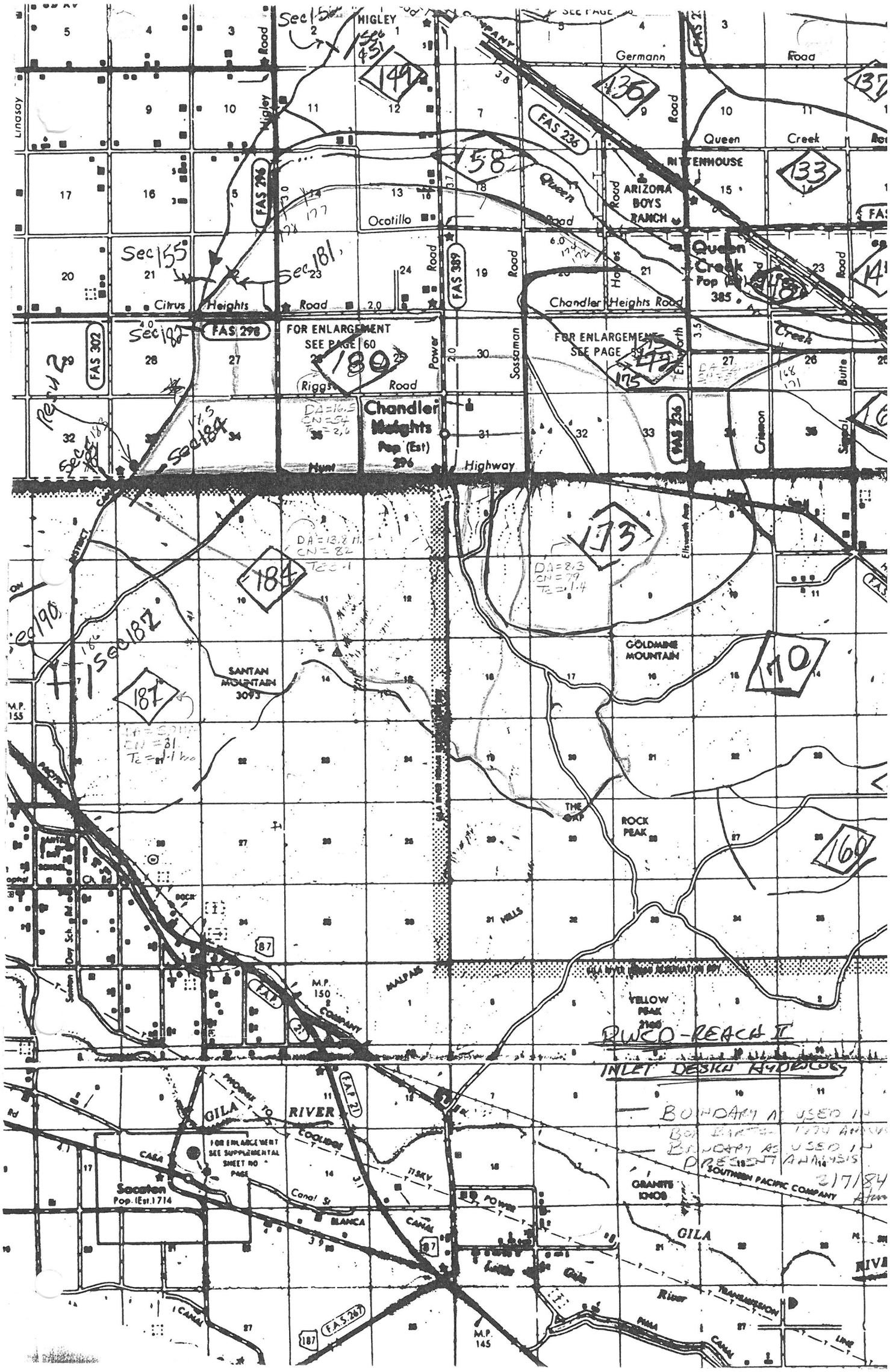
RCN = 79

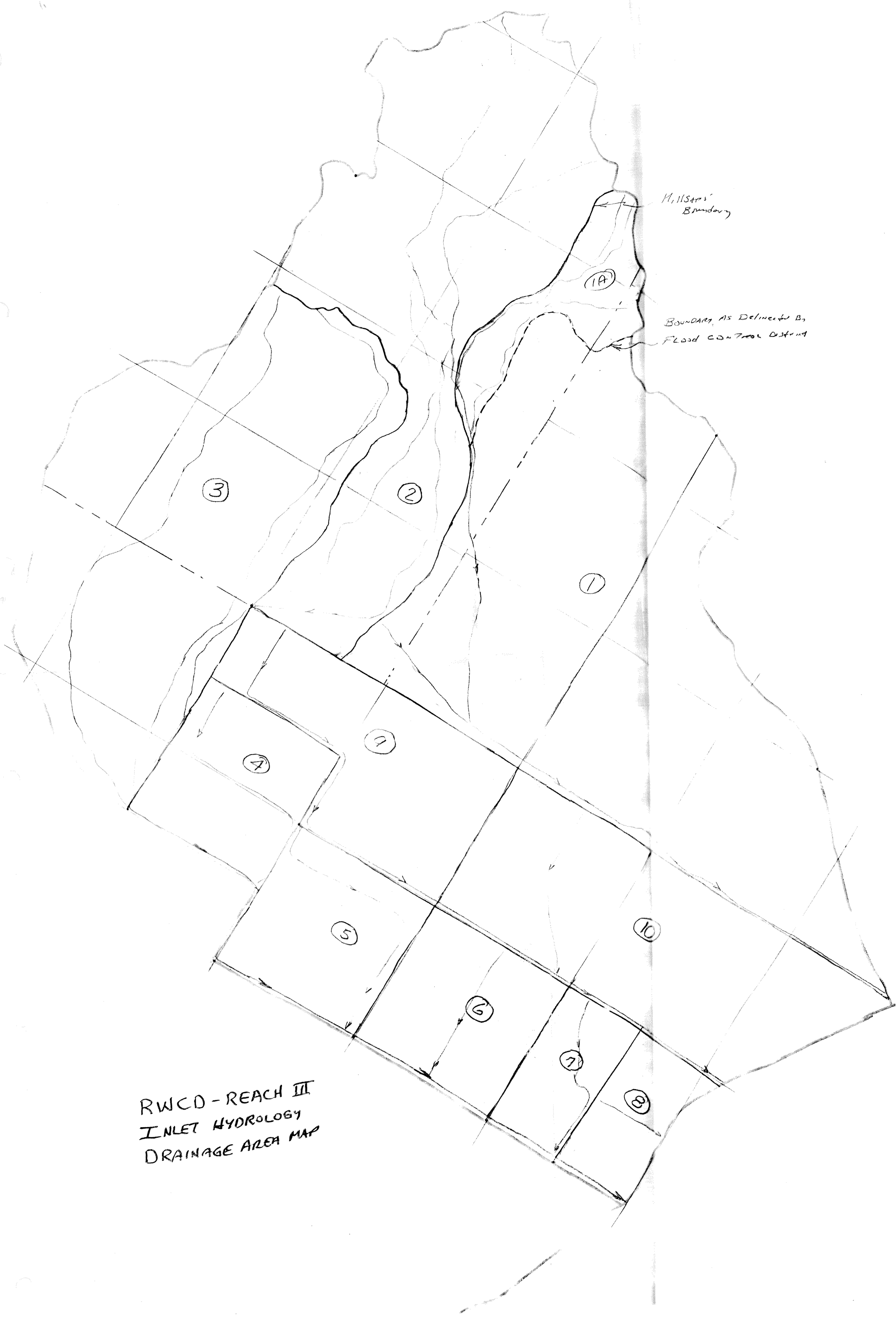


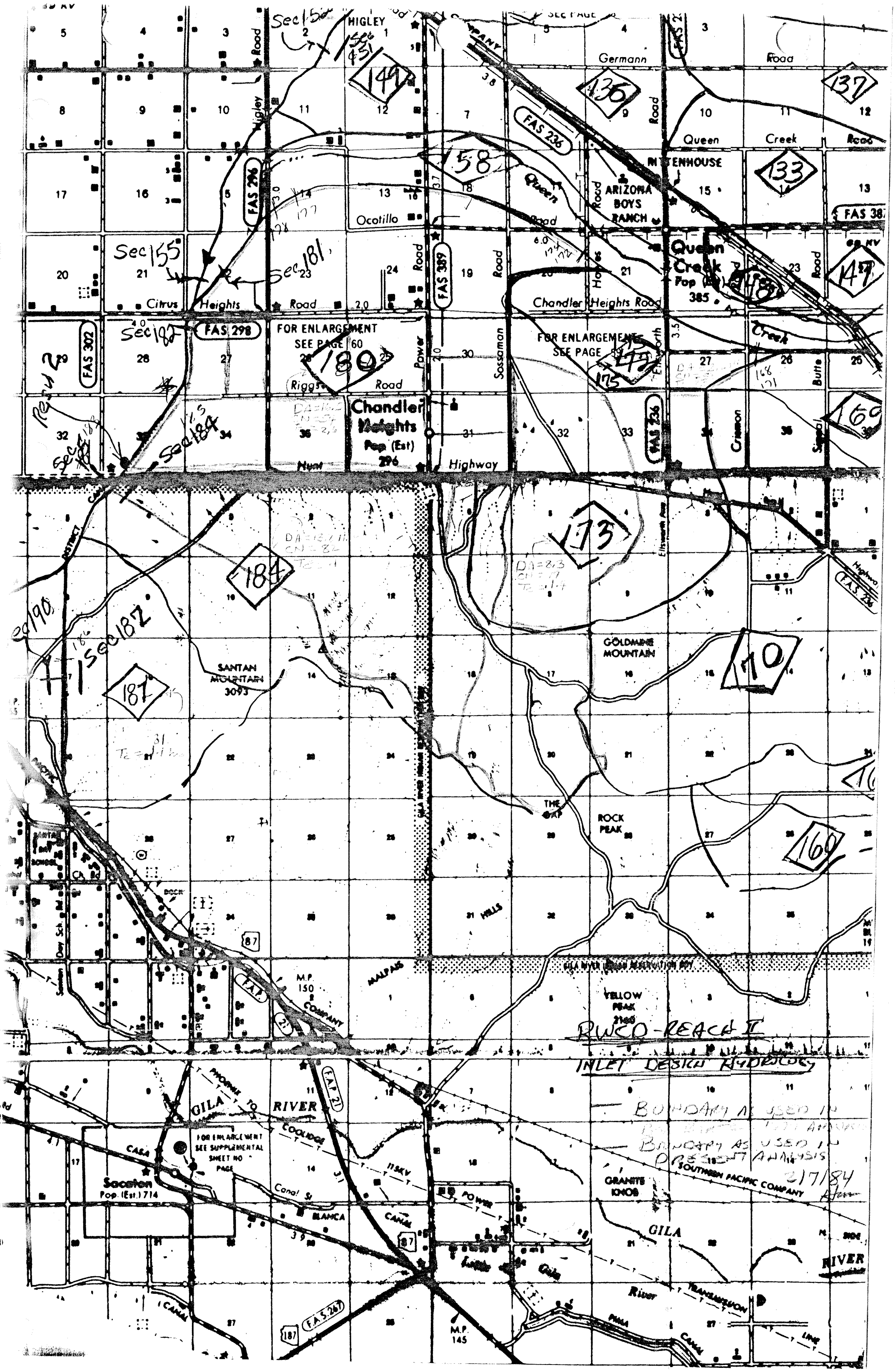
Marianne & ECO

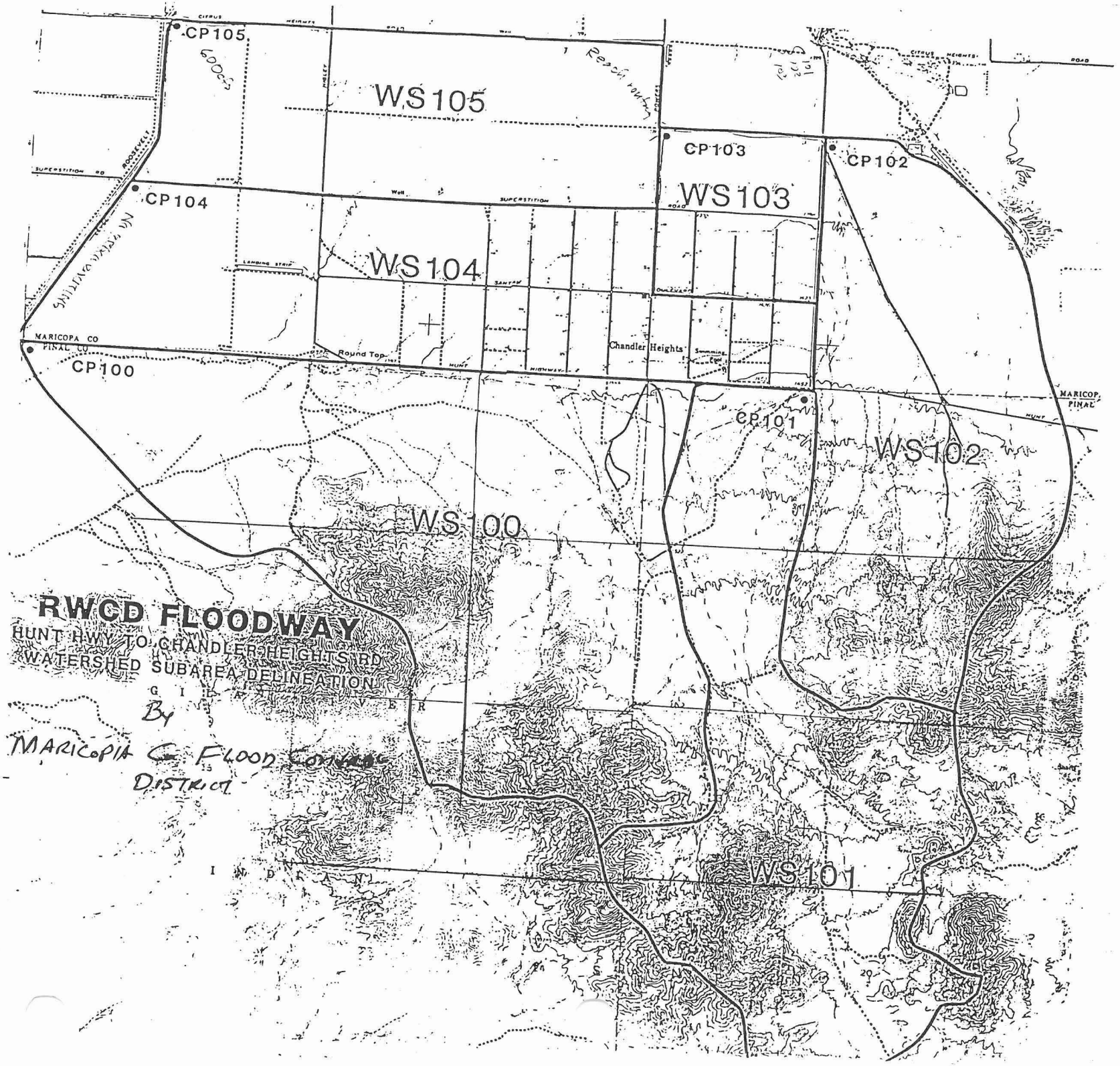
→ TOTAL = 23.51

Brunson → TOTAL = 22.68 + .63 = 23.31


HIGLEY
Germann Road
Queen Creek
FAS 236
ARIZONA BOYS RANCH
Ocotillo
Citrus Heights Road
Chandler Heights Road
Queen Creek
Pop (Est) 385
FAS 296
FAS 302
FAS 298
FAS 389
FOR ENLARGEMENT SEE PAGE 60
FOR ENLARGEMENT SEE PAGE 59
Riggs Road
Chandler Heights
Pop (Est) 296
Highway
Sossaman Road
Ellsworth Road
Crimson
Signal Butte
SANTAN MOUNTAIN 3093
GOLDMINE MOUNTAIN
THE ROCK
ROCK PEAK
MALPAIS HILLS
GILA RIVER INDIAN RESERVATION BDY
YELLOW PEAK 2160
M.P. 150
M.P. 155
M.P. 145
SOUTHERN PACIFIC COMPANY
GILA RIVER
COOLIDGE
FOR ENLARGEMENT SEE SUPPLEMENTAL SHEET NO PAGE
Sacaton
Pop. (Est.) 1714
Canal St
BLANCA CANAL
GRANITE 1240
GILA RIVER
Little Gila River
PIMA CANAL
TRANSMISSION LINE
FAS 267
Sec 155
Sec 181
Sec 187
Sec 184
Sec 190
Sec 182
DA=16.5
CN=54
Tc=2.6
DA=13.2 in
CN=82
Tc=1
DA=8.3
CN=79
Tc=1.4
CN=31
Tc=1 hr
RWCD-REACH II
INLET DESIGN HYDROLOGY
BOUNDARY AS USED IN
BOUNDARY AS USED IN
PRESENT ANALYSIS
2/7/84


Mill Stops' Boundary
Boundary As Delineated By Flood Control District
1A
1
2
3
4
5
6
7
8
9
10
RWCD - REACH III
INLET HYDROLOGY
DRAINAGE AREA MAP


HIGLEY
Germann Road
Queen Creek Road
ARIZONA BOYS RANCH
Ocotillo Road
Queen Creek
Pop (Est) 385
Citrus Heights Road
Chandler Heights Road
FOR ENLARGEMENT SEE PAGE 60
FOR ENLARGEMENT SEE PAGE 61
Riggs Road
Chandler Heights
Pop (Est) 296
Hunt Highway
SANTAN MOUNTAIN 3093
GOLDMINE MOUNTAIN
THE GAP
ROCK PEAK
YELLOW PEAK
MALPAIS HILLS
GILA RIVER INDIAN RESERVATION BDY
M.P. 150
M.P. 145
SOUTHERN PACIFIC COMPANY
GILA RIVER
Sacaton
Pop. (Est.) 714
FOR ENLARGEMENT SEE SUPPLEMENTAL SHEET NO. PAGE
Canal St
BLANCA
GRANITE KNOB
Gila River
RWCO-REACH II
INLET DESIGN HYDROLOGY
BOUNDARY AS USED IN PRESENT ANALYSIS
2/7/84


RWCD FLOODWAY
HUNT HWY TO CHANDLER HEIGHTS RD
WATERSHED SUBAREA DELINEATION
By
MARICOPA CO FLOOD CONTROL DISTRICT
CP105
CP104
CP103
CP102
CP101
CP100
WS105
WS104
WS103
WS102
WS101
WS100
SUPERSTITION RD
ROOSEVELT
SUPERSTITION
LANDING STRIP
SANTAN
HUNT
HIGHWAY
Round Top
Chandler Heights
MARICOPA CO
PINAL CO
MARICOPA
PINAL
GILA RIVER
INDIAN

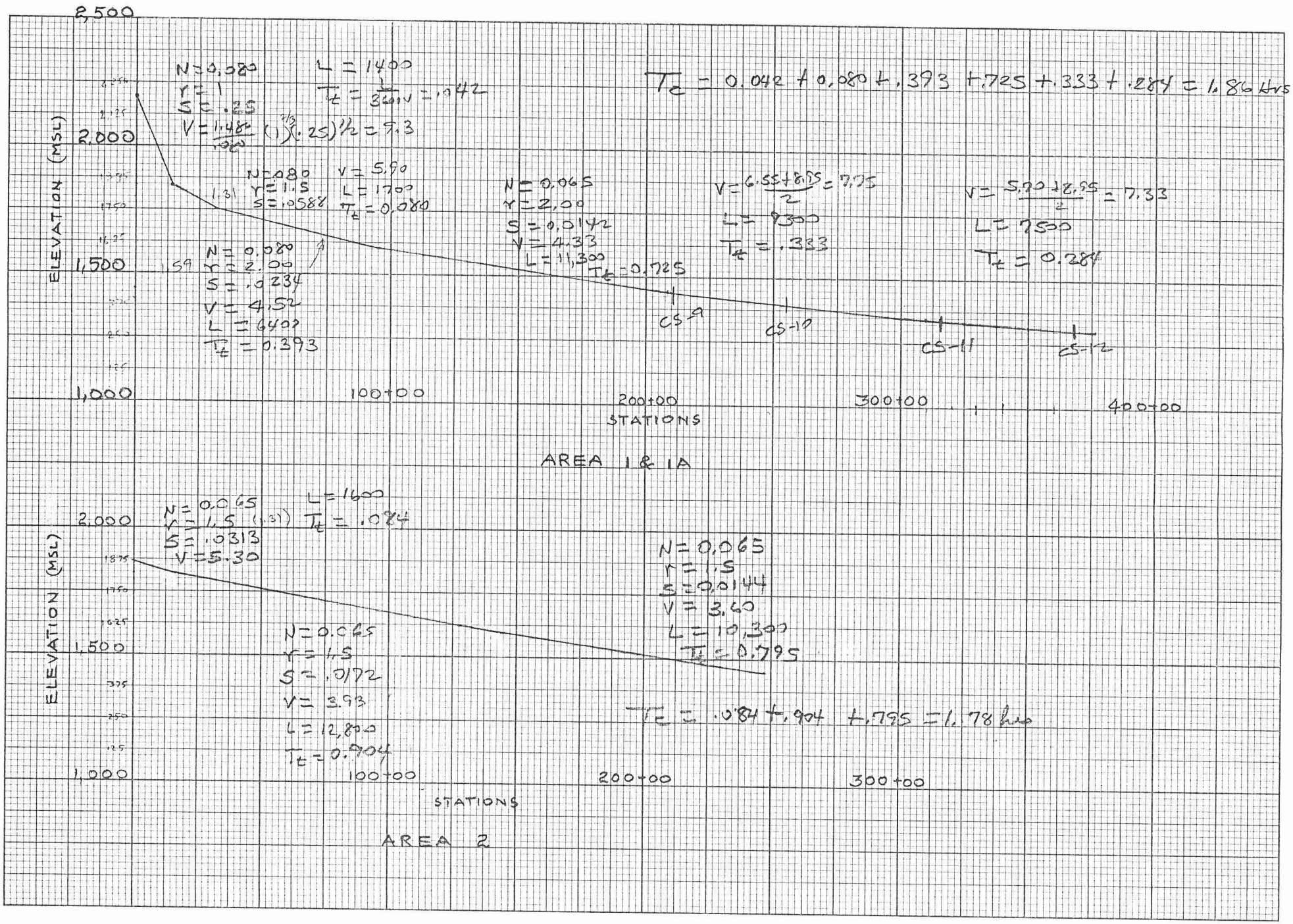
Feb 1984

TIMES OF CONC
RWCD REACH III
SIDE INLETS

Times of Concentration for the present study were based on channel hydraulic calculations. Cross section data and N-values were obtained during field surveys dated 2/2/84. Channel slopes were determined from 7½ minute USGS Quad Sheet. Tc's by outcome are as follows: They have been compared with those used by the Flood Control District

Subarea No. SCS	FCD	Tc by SCS (Hrs)	Tc by FCD (Hrs)	
1 & 1A	(WS-100)	1.86	3.10	(L = 1.61) (Lag)
2	(WS-101)	1.78	2.68	(L = 1.86)
3	(WS 102)	2.58	2.73	(L = 1.64)
4	(WS-103)	1.07	6.50	(L = 3.92)
5	(WS-105)	0.95	?	Kinematic wave procedure used.
6		1.14		
7		1.41		
8		0.60		
9	(WS-104)	1.72	?	Kinematic wave procedure used.
10		1.26		

K+E 20 X 20 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.



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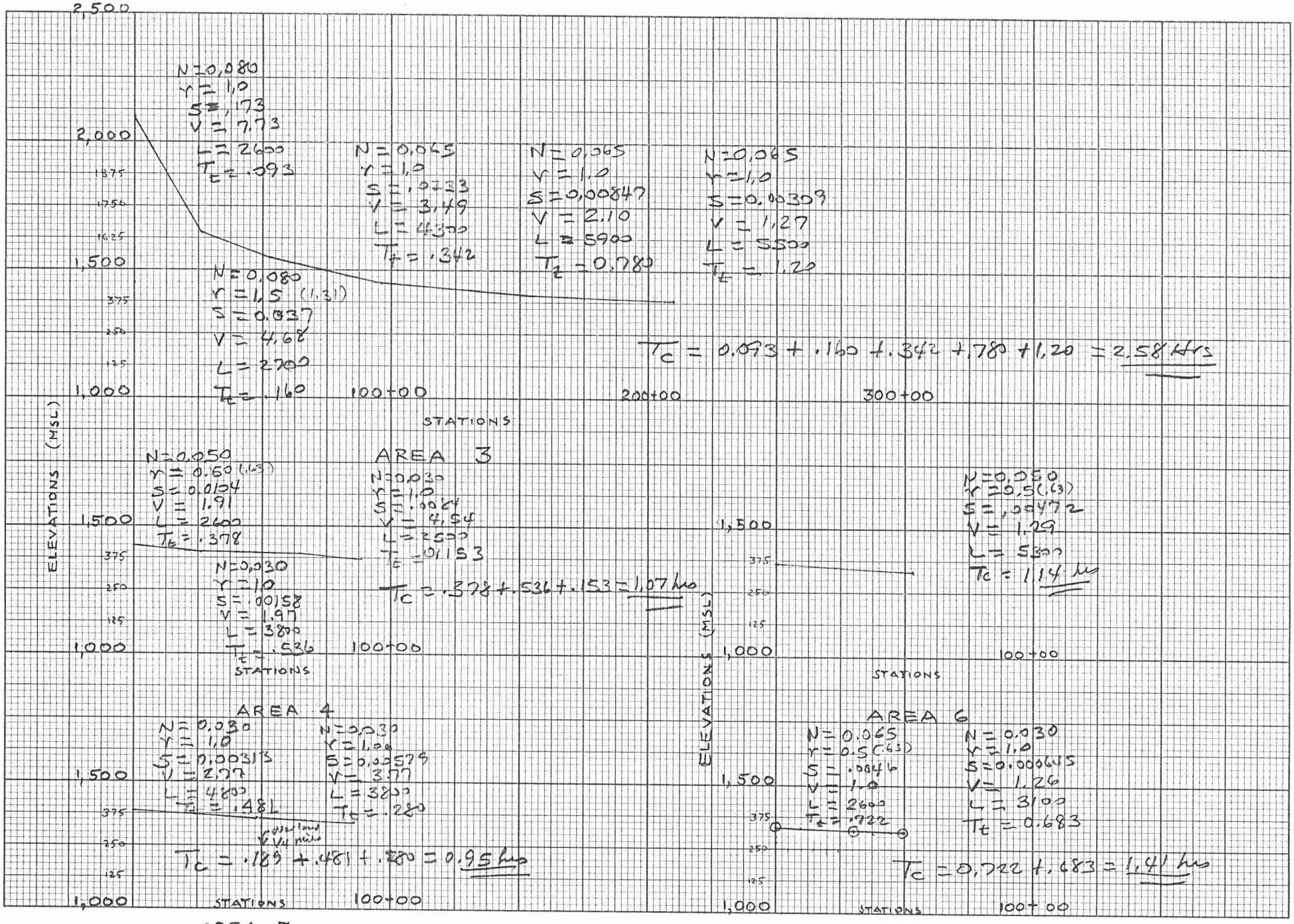
KEUFFEL & ESSER CO. MADE IN U.S.A.



K+E 20 X 20 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

N = 0.055
Y = 0.5 (.63)
S = .005
V = 1.20
L = 2600
T_c = 0.60 hrs

1,500
375
250
125
1,000
100+00
STATIONS

AREA 8

N = 0.050
Y = 0.5 (.63)
S = .0104
V = 1.91
L = 2600
T_c = .378

N = 0.030
Y = 1.0
S = .0112
V = 5.24
L = 2600
T_c = .138

N = 0.030
Y = 1.0
S = .00346
V = 2.91
L = 5200
T_c = .496

N = 0.03
Y = 1.0
S = .001
V = 1.57
L = 4000
T_c = .708

T_c = .378 + .708 + .138 + .496 = 1.72 hrs

1,500
375
250
125
1,000
100+00
200+00
STATIONS

ELEVATIONS (MSC)

AREA 9

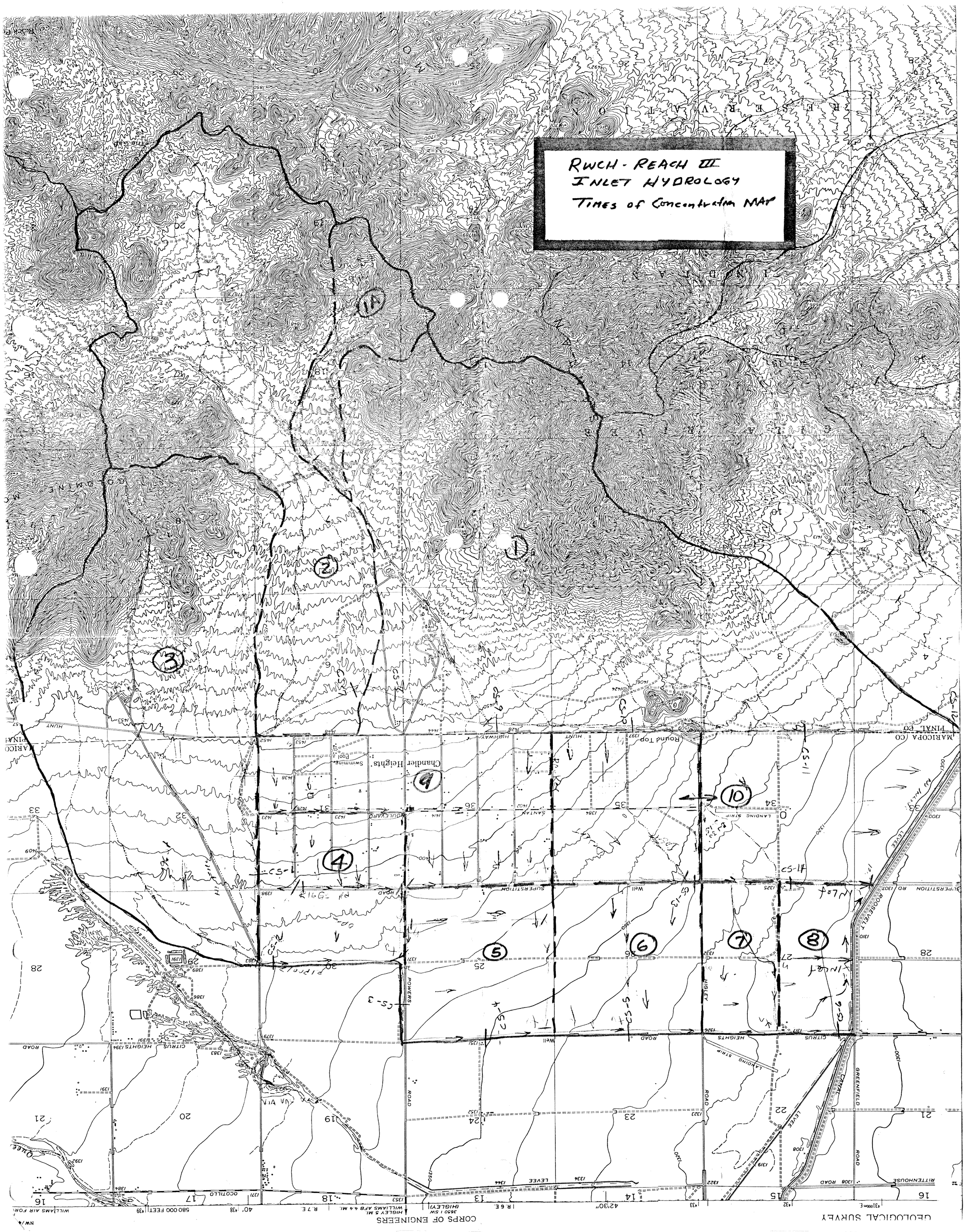
N = 0.065
Y = 1.0
S = .00867
V = 2.13
L = 6000
T_c = 0.782

N = 0.030
Y = 1.0
S = .00606
V = 3.86
L = 6600
T_c = .475

T_c = 0.782 + .475 = 1.26 hrs

1,500
375
250
125
1,000
100+00
200+00
STATIONS

AREA 10


RWCH - REACH III
INLET HYDROLOGY
TIMES of Concentration MAP
CS-1
CS-2
CS-3
CS-4
CS-5
CS-6
CS-7
CS-8
CS-9
CS-10
CS-11
CS-12
CS-13
CS-14
1
2
3
4
5
6
7
8
9
10
11
12
MARICOPA CO
PINAL CO
Chandler Heights
Round Top
POWERS
HIGLEY
GREENFIELD
ROAD
CANAL
LEVEE
LANDING STRIP
CITRUS
HEIGHTS
SUPERSTITION
ROOSEVELT
RITTENHOUSE
GEOLOGICAL SURVEY
CORPS OF ENGINEERS

COMPUTATION SHEET
SCS-ENG-522A
Rev 8-69

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

STATE: ARIZ.
PROJECT: RWCD - REACH III
BY: B.F.
DATE: FEB. 89
CHECKED BY:
DATE:
FOR NO.
SUBJECT: PROFILES FOR Tc
PAGE 1 4

AREA 1 & 1A

ELEV	Δ-ELEV	Δ-DIST	STA	SLOPE
✓ 2200			0+00	
	350 ✓	1,400 ✓		0.250
✓ 1850	100	1,700 ✓	14+00	.0588
✓ 1750	150	6,400 ✓	31+00	.0234
✓ 1600			95+00	
	160	11,300 ✓		0.0142
✓ 1440			208+00	
	90 ✓	9,300 ✓		.00968
✓ 1350			301+00	
	50 ✓	7,500 ✓		.00667
✓ 1300			376+00	

AREA - 2

✓ 1870			0+00	
	50	1,600		.0313
✓ 1820			16+00	
	70	4,000		.0175
✓ 1750			56+00	
	150	8,800		.0170
✓ 1600			144+00	
	148	10,300		.0144
1452			247+00	

ARIZ. RWCD - REACH III

BE FEB. 89

PROFILES FOR TR 2 4

AREA 3

ELEV.	Δ ELEV.	Δ DIST.	STA.	SLOPE
2,100			0+00	
	450	2,600		.173
1,650			26+00	
	100	2,700		.0370
1,550			53+00	
	100	4,300		.0233
1,450			96+00	
	50	5,900		.00847
1,400			155+00	
	17	5,500		.00309
1,383			210+00	

AREA 4

1,425			0+00	
	27	~~2,600~~		.0104
1,398			26+00	
	6	3,800		.00158
1,392			64+00	
	21	2,500		.00840
1,371			89+00	

AREA 5

1,382			0+00	
	15	4,800		.00313
1,367			48+00	
	22	3,800		.00579
1345			86+00	

ARIZ. RWCD - REACH III

B.F. FEB. 84

PROFILES FOR Tc 3 4

AREA 6

ELEV.	Δ ELEV.	Δ DIST.	STA.	SLOPE
1,360			0+00	
	25	5,300		.00472
1,335			53+00	

AREA 7

1332			0+00	
	12	2600		.0046
1,320			26+00	
	2	3,100		.00645
1,318			57+00	

AREA 8

1,318			0+00	
	13	2,600		.00500
1,305			26+00	

AREA 9

1,453			0+00	
	27	2,600		.0104
1,426			26+00	
	4	4,000		.00100
1,422			66+00	
	29	2600		.0112
1,393			92+00	
	18	5200		.00346
1,375			144+00	

ARIZ RWCD - REACH III

B.F. FEB. 84

PROFILES FOR Tc 4 4

AREA 10

ELEV.	Δ ELEV.	Δ DIST.	STA.	SLOPE
1,397			0+00	
	52	6,000		.00867
1,345			60+00	
	40	6,600		.00606
1305			126+00	

U.S. Department of Agriculture
Soil Conservation Service

SCD

Date 2/2/84

Work Unit

mer-Group

Location RWCD. REACH III

Job

Design Sur.

Const. Layout

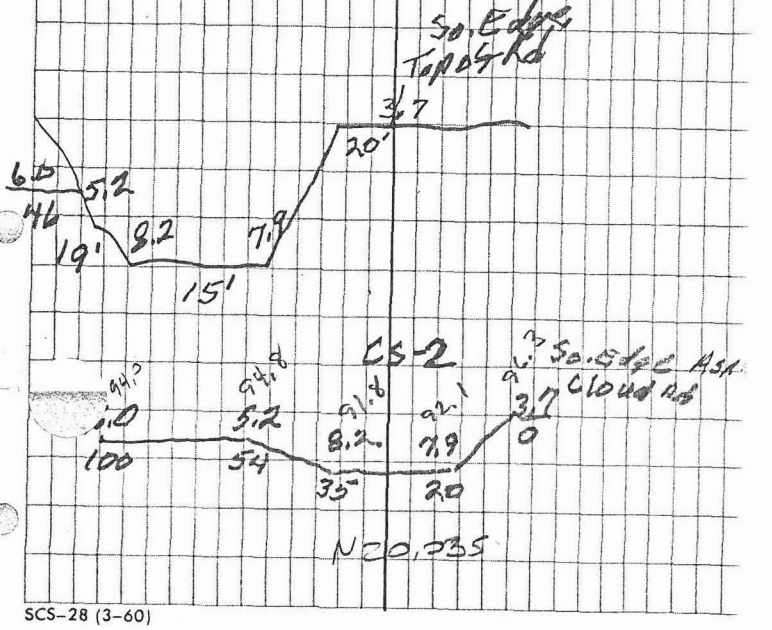
Const. Check

Other

Dist. Agri. No.

Field No.

ACP No.



SCS-28 (3-60)

U.S. Department of Agriculture
Soil Conservation Service

SCD

Date 2/2/84

Work Unit

ner-Group

Location RWCD - REACH III

Job

Design Sur.

Const. Layout

Const. Check

Other

Dist. Agri. No.

Field No.

ACP No.

CS-1

N = 0.035

Soissonian Rd

5.0	5.5	8.3	8.3	5.0	6.9	6.1	6.0	7.6	5.
102	81	66	56	49	48	41	31	10	0

N = 0.035

CS-6

8.6	8.6	5.3	5.3	9.5	9.5	6.
100	64	56	45	30	15	

N = 0.035

CS-5

5.3	8.5	8.5	5.	
4.9	52	38	22	0
100				

N = 0.035

CS-4

5.2	5.0	8.8	8.8	7.6
100	56	40	20	0

N = 0.035

CS-3

7.0	6.0	6.0	10	10	4.7	7.0	6.
118	103	94	81	75	57	49	20	0

SCS-28 (3-60)

U.S. Department of Agriculture
Soil Conservation Service

SCD

Date 2/2/84

Work Unit

ner-Group

Location RWCD - REACH III

Job

Design Sur.

Const. Layout

Const. Check

Other

Dist. Agri. No.

Field No.

ACP No.

CS-~~3~~ 14

N=0.035

94.4	89.7	89.7	89.4	
5.6	10.3	10.3	6.2	
40	24	12	0	

CS-8

N=0.055

94.0	89.5	89.4	89.7	94.0	NS
8.0	10.6	10.6	6.0	6.0	0.
95	46	29	16	10	0

N=0.055 CS-7 East Branch

92.3	90.5	90.5	94.0	NS 90.5
7.7	9.5	9.5	6.0	9.5
100	35	22	11	0

CS-9

N=0.040

93.0	90.0	88.7	88.7	94.0	94.0	NS 88.7
7.0	10.0	11.8	11.8	6.0	6.0	10.7
200	115	105	36	21	12	0

SCS-28 (3-60)

U.S. Department of Agriculture
Soil Conservation Service

SCD

Date 2/2/80

Work Unit

ner-Group

Location RWCD - REACH III

Job

Design Sur.

Const. Layout

Const. Check

Other

Dist. Agri. No.

Field No.

ACP No.

CS-10

N = 0.035

8.0	9.0	13.3	13.3	12.5	12.0	6.0	9.[illegible]			
200	109	75	56	50	31	15	0			

N = 0.035

CS-11

6.0	7.0	10.0	10.0	8.0	1.2	1.2	7.4	7.3	10.5	10.5
250	188	171	153	137	106	100	83	58	40	14

N = 0.035

CS-12

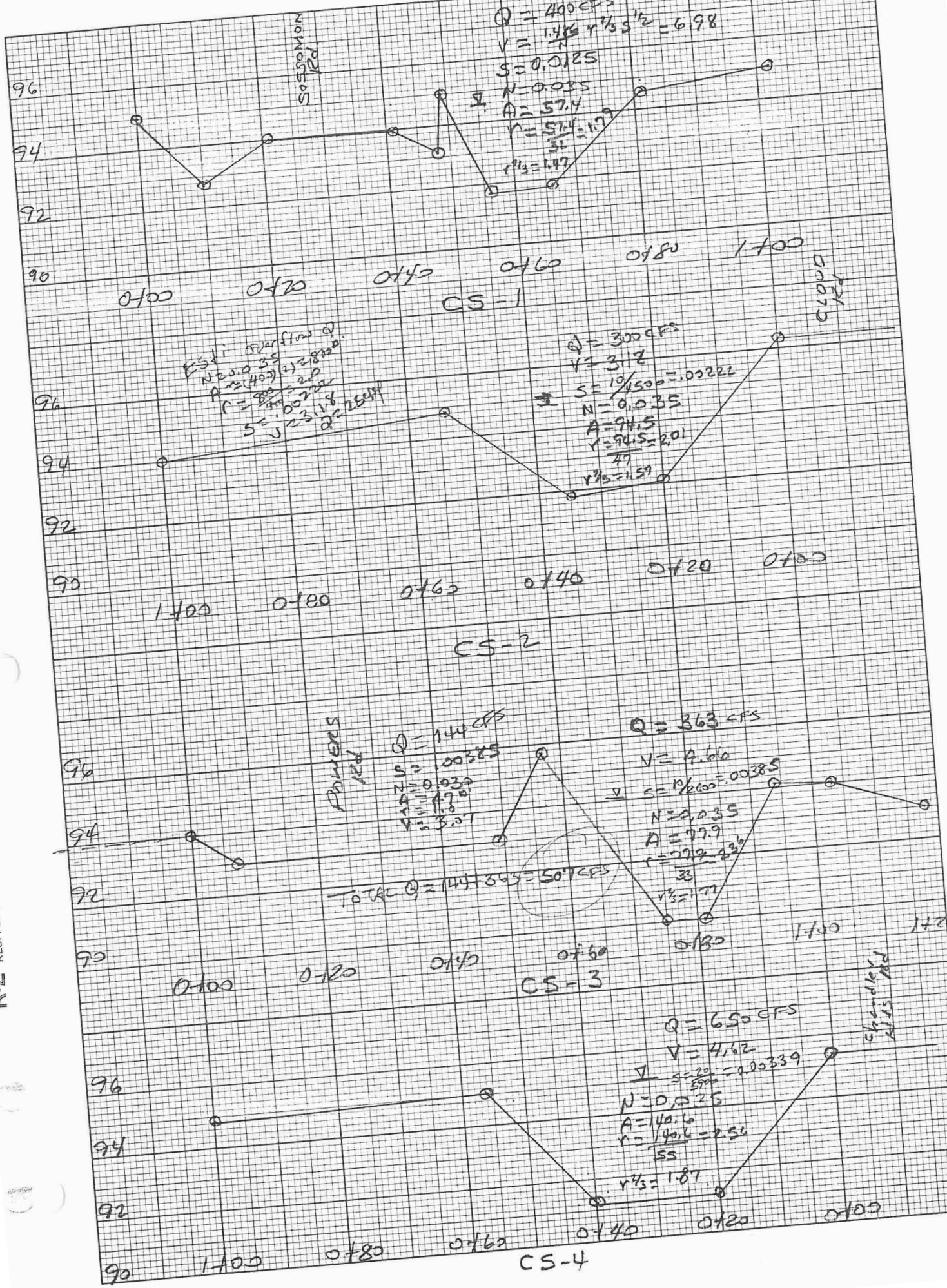
3.5	2.0	7.3	6.8	0.5	0.5	3.2	2.3	5.3	5.3	1.[illegible]
200	138	125	100	92	88	69	53	41	18	0

N = 0.035

CS-13

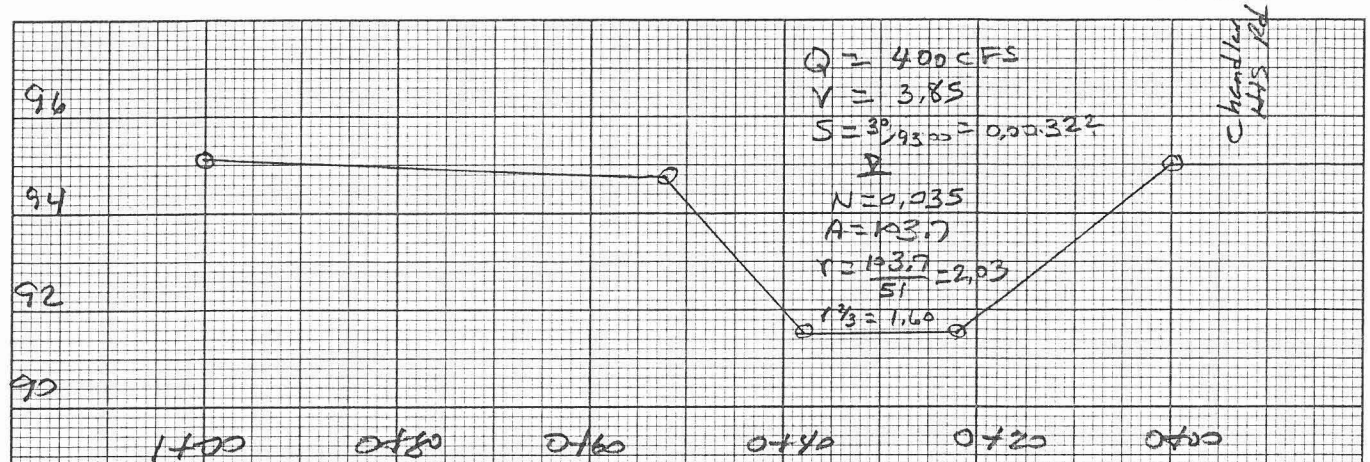
5.3	5.5	4.3	6.3	6.3	4.5	6.1	5.7	5.0	5.[illegible]	
200	100	76	67	60	59	53	10	8	0	

SCS-28 (3-60)

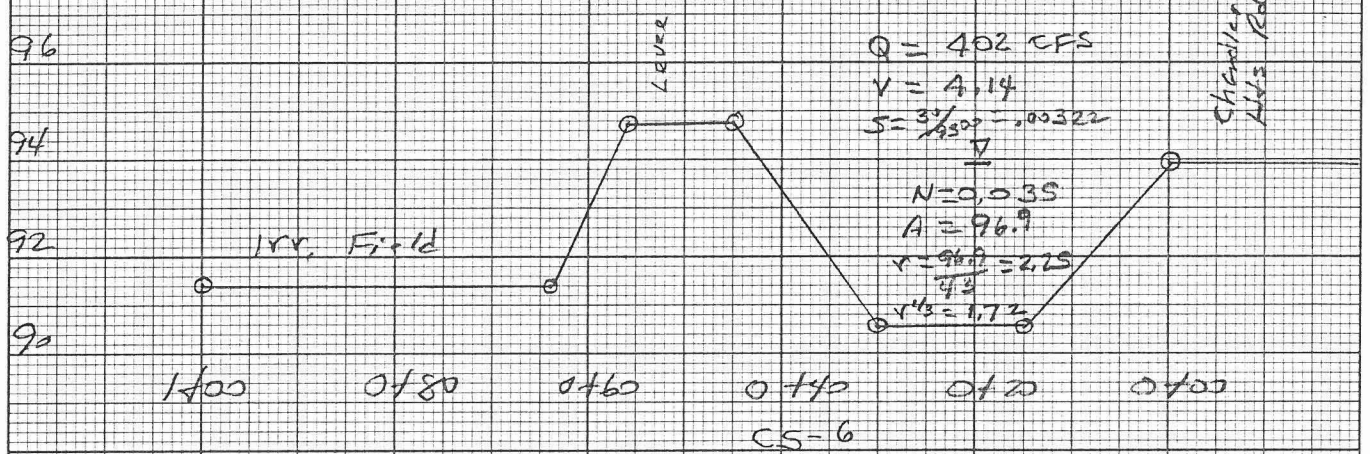


46 1240
K+E 20 X 20 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

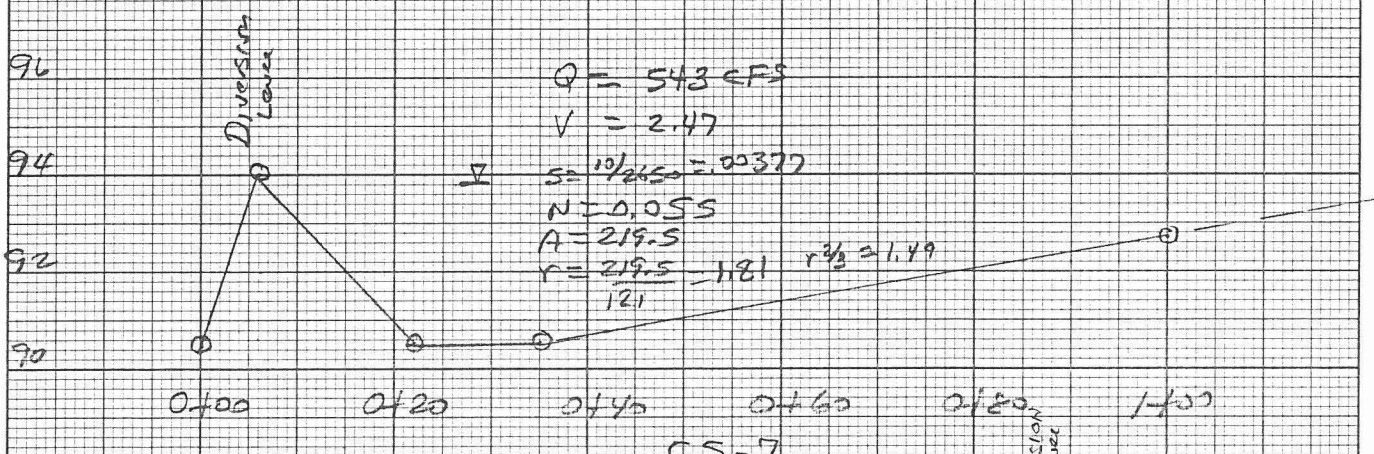
INLETS



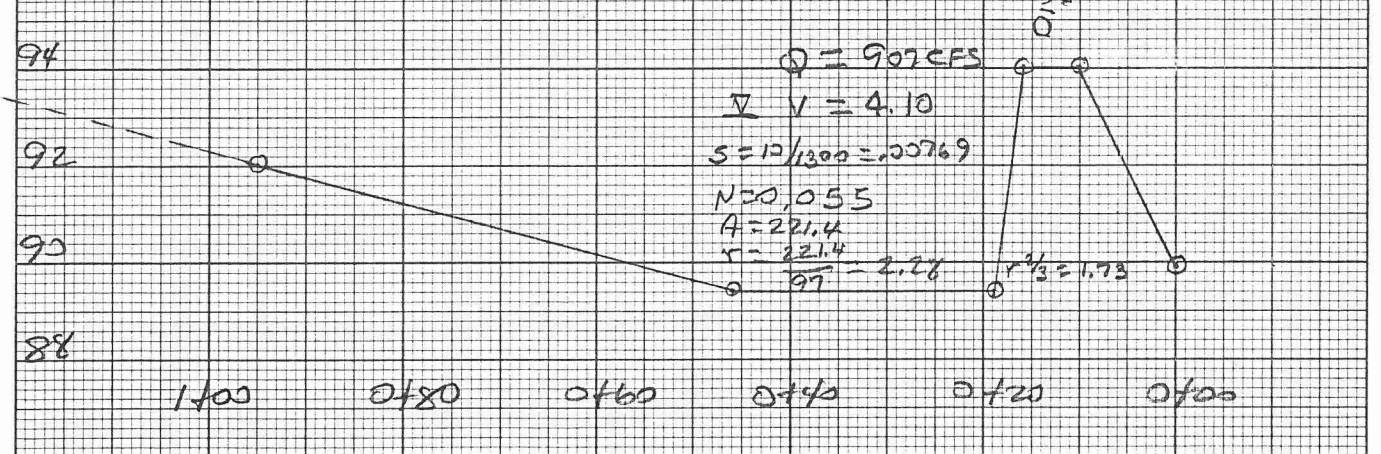
CS-5



CS-6



CS-7



CS-8

46 1240
K+E 20 X 20 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

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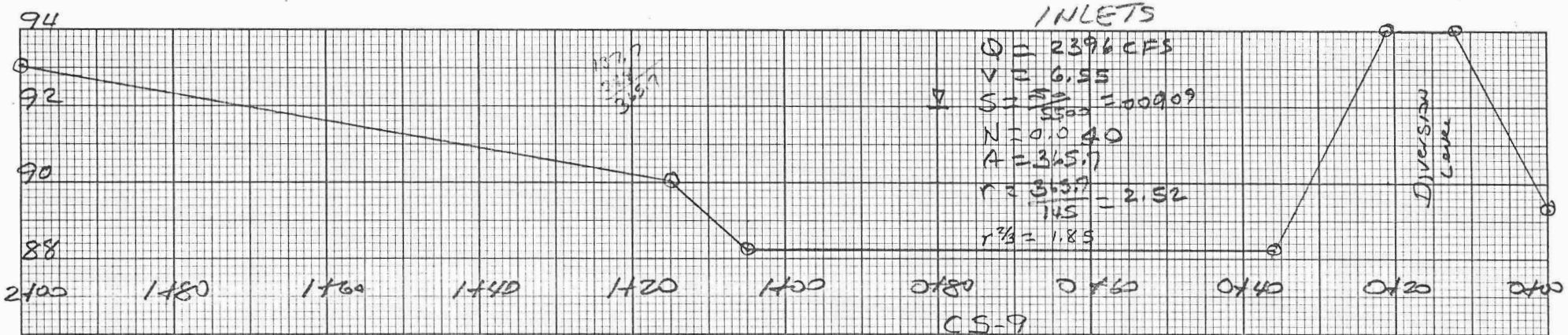
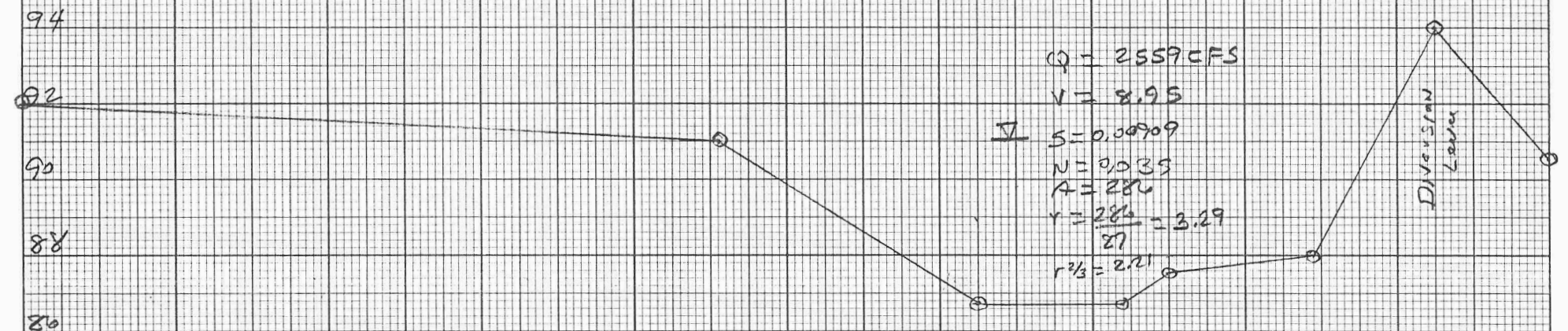
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 1240

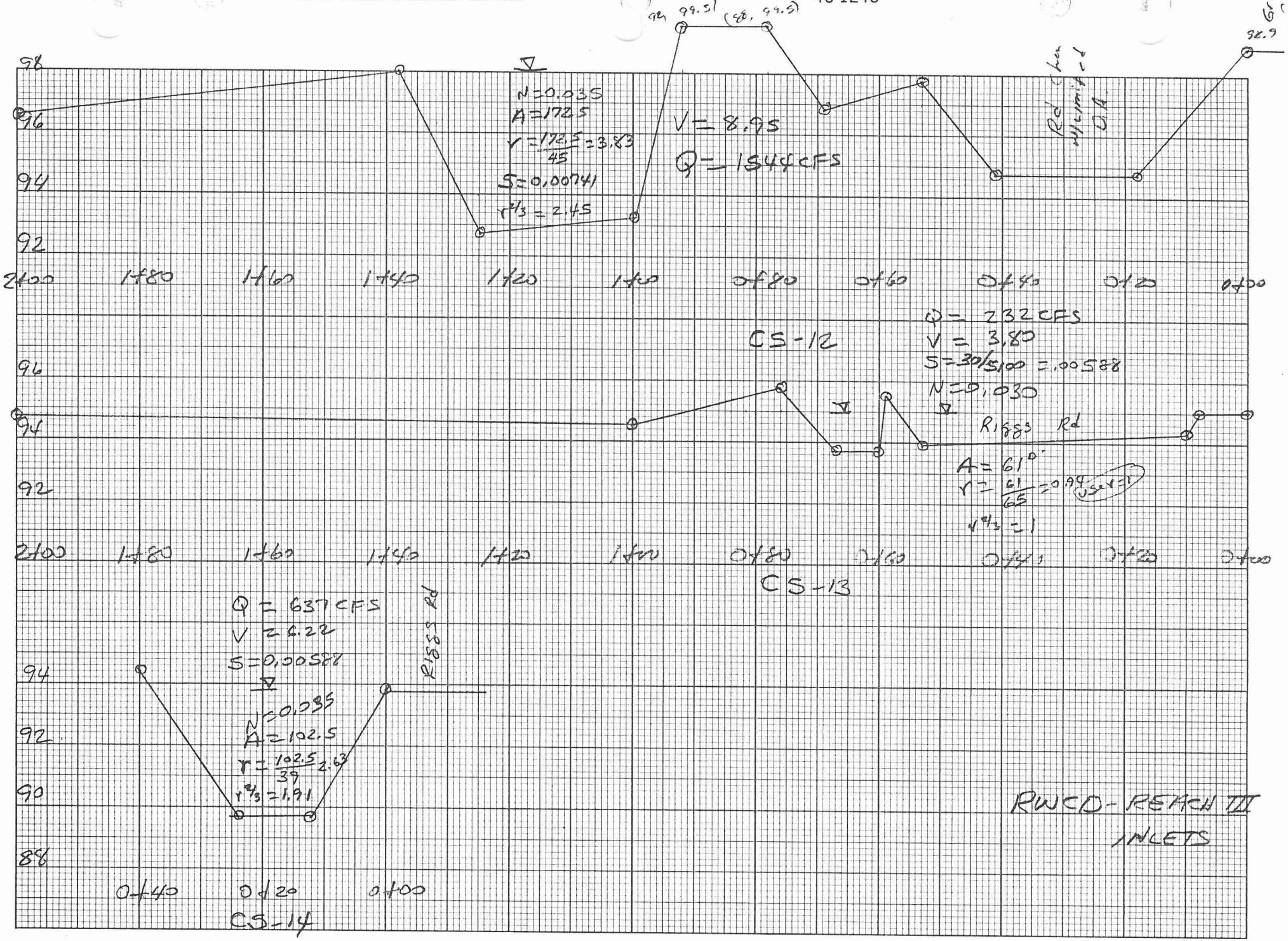
RWCD - REACH III
INLETS





K+E 20 X 20 TO THE INCH • 7 X 10 INCHES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 1240



Feb 1984

CURVE NUMBERS
REACH III, RWCD

The curve numbers for the present analysis were based on data developed by Bob Bartels dated Aug 1974. He had determined CN by Soil Group for the 24-Hour Storm. The only adjustment was to use a CN = 54 for Irrigated Agric. instead of CN = 50 since slightly higher runoff is expected for the citrus figure in the subject area as compared to the general assumption used in Mr. Bartels analysis. Also the drainage area was broken into a greater number of subareas. See calculations which follow on next sheet, including assumptions as developed by Mr Bartels. Also included as a part of this documentation is a soils map for the subject area.

ARIZONA RWCD - REACH III, Inlet Hydrology

Hum 2/8/84

ESTIMATED CN'S BY SUBAREA

FOR 24-Hour Storm

Subarea (No.)	TOTAL D. A. (Mi²)	% Vegetative Type & Soil [1] Desert BR B-Soil 10% cover $CN_{24}=75$	Desert Br. D-Soil 25% cover $CN_{24}=86$	Irr Agric $CN=54$ [2]	Weight 24-Hr CN
1+1A	6.79	61	39	—	79
2	4.12	51	49	—	80
3	4.35	70	23	Actually a Grass Pit 7	77
4	0.97	50		50	65
5	1.01			100	54
6	0.98			100	54
7	0.51	50		50	65
8	0.52			100	54
9	1.54	8		92	56
10	2.52	50		50	65

1] Data based on Bob Bartels dated Aug 1974
See attached write-up

2] Note CN for Irrigated Agric was raised from CN=50 to CN=54 since a portion of the Citrus Groves in the Present Study area are farrow Irrigated rather than Basin irrigated on which the CN=50 was based. The CN=54 was also used by MCCFCD in their Analysis. The CN for the desert brush areas appear to be reasonable for the Present Study.

ARIZONA RWCD

RMB Aug 20, 74

RC Number Calculations 1 2

The general writup, dealing with analysis of the watershed, states on page 2 of 4 the procedures used to determine rangeland, irr. land, and urban areas RCN.

This page gives the following values which will be used throughout the analysis.

Ⓐ Desert RANGELAND (B-SOIL) - use 24 hr RCN of 75
Ⓑ " " (D-Soil) " " " of 86

Ⓒ Irrigated Agriculture - use 24 Hr RCN of 50

Ⓓ 100 to 299 homes/sq mile - use 24 hr RCN of 75
Ⓔ 300 to 599 homes/sq mile - use " " of 77
Ⓕ 600 to 1199 homes/sq mile - use " " of 79
Ⓖ 1200 to 1999 " " - use " " of 80
Ⓗ 2000 + " " - use " " of 81

The RCN is determined for two conditions

Present (1975) and Future (2000)

The 1975 Land Use was determined by using MAG projection data for the urban areas + ortho quads + areal photos for agriculture areas.

The area to be studied was colored to define the areas listed as Ⓒ through Ⓗ above. A MAP was then used to estimate the % of each of the land uses in each of the Subwatersheds by coloring over the Subareas the land use.

This method will then give the composite RCN for present conditions.

A212 RWCD

RMB Aug 2074

RC Number Calculations 2 2

For Future Conditions a map was made up to show MAG + PINAL Co Land Use projections for the year 2000. It was estimated that the area under irr. in 1975 will be either irrigated or in houses in the year 2000. The map was first colored to show urban projections + then the Agri areas of 1975 were colored in.

For the area South of Powerline Channel no change in land use is projected between 1975 and 2000.

The Calc of the composite RCN was then done for the year 2000 same as was done for 1975.

This value is then modified to show the effect of storage required by zoning on all new construction after 1975.

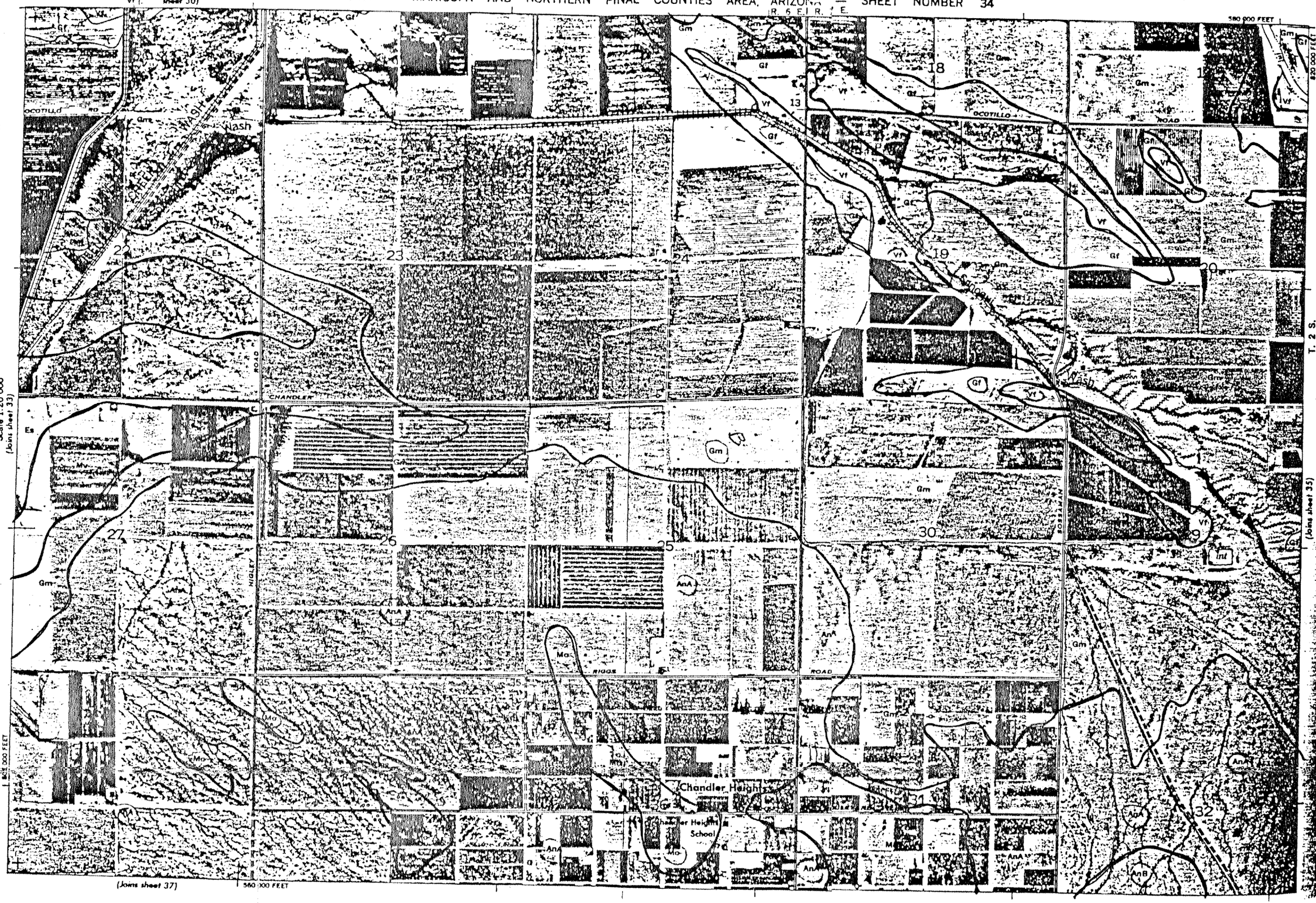
Two conditions were considered ½ inch storage and 1 inch storage. A relationship between old area developed + new area developed was estimated + a relationship was calculated for the amount of RCN reduction based on change in housing density. Figure A + the attached page of general writing shows the result of these calculations

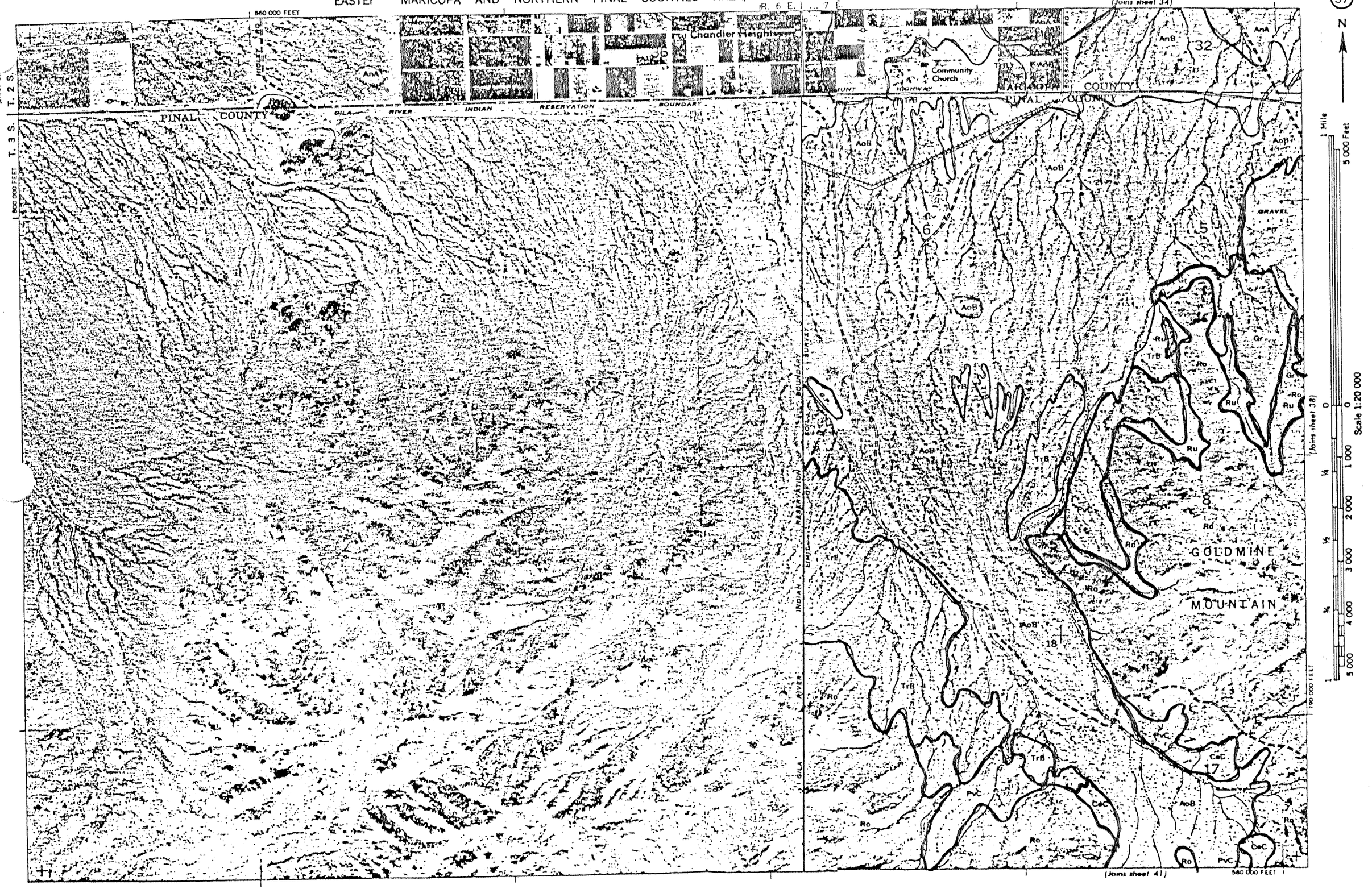
A map was ~~prepared~~ colored to show ranges of changes + this map is used to estimate the reduction to be used for Storage effect.

So the Future RCN will be based on both the year 2000 land use + the change in land use between 1975 and 2000.

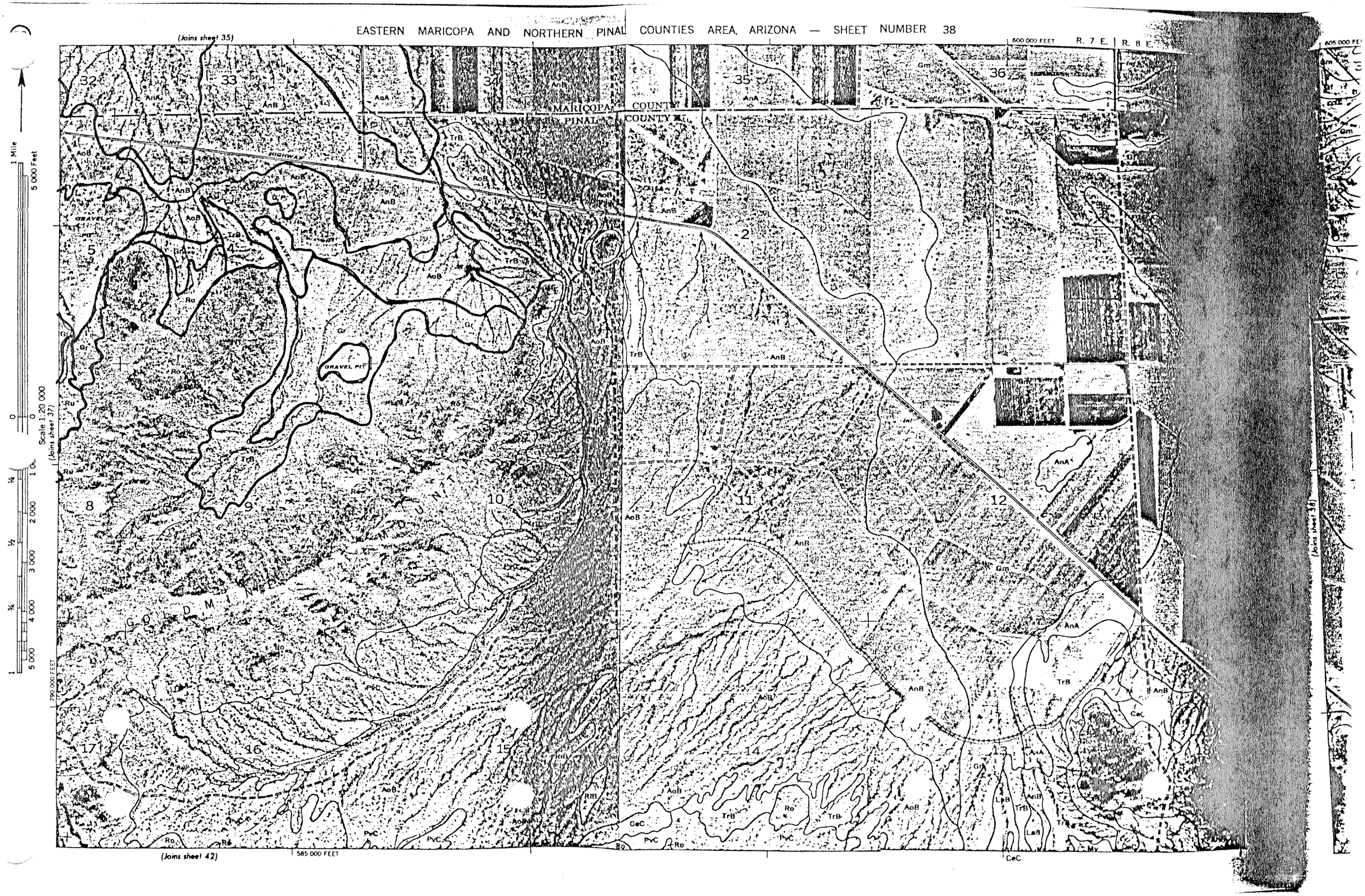
RWCD - REACH III
HYDROLOGIC SOIL GROUP MAP
- GROUP B: AnA, AnB, AoB, Es, Gf, GM, Mv, Mo, PvC, TvB, Vf
- GROUP D: CeC, Ro, Ru
1A
1
2
3
4
5
6
7
8
9
10
CS-1
CS-3
CS-4
CS-5
CS-6
CS-11
CS-12
CS-13
CS-14
Chandler Heights
Round Top
MARICOPA CO
PINAL CO
SUPERSTITION RD
CITRUS HEIGHTS ROAD
POWERS ROAD
HIGLEY ROAD
GREENFIELD ROAD
ROOSEVELT CANAL
RITTENHOUSE ROAD
CORPS OF ENGINEERS
GEOLOGICAL SURVEY

EAST MARICOPA AND NORTHERN PINAL COUNTIES AREA, ARIZONA — SHEET NUMBER 34




37
N
(Joins sheet 34)
(Joins sheet 38)
(Joins sheet 41)
(Joins sheet 22)
560 000 FEET
580 000 FEET
800 000 FEET
790 000 FEET
T. 2 S.
T. 3 S.
R. 6 E.
7 E.
Chandler Heights
Community Church
HIGHWAY
PINAL COUNTY
MARICOPA COUNTY
GILA RIVER INDIAN RESERVATION BOUNDARY
GRAVEL
GOLDMINE MOUNTAIN
Scale 1:20 000
1 Mile
5 000 Feet

EASTERN MARICOPA AND NORTHERN PINAL COUNTIES AREA, ARIZONA — SHEET NUMBER 38



41
N
560 000 FEET
R. 7 E.
(Joins sheet 37)
(Joins sheet 42)
775 000 FEET
580 000 FEET
T. 3 S.
INDIAN RESERVATION BOUNDARY
LIMIT OF SOIL SURVEY
The Gap
17
18
19
20
29
30
31
32
Ro
PvC
AoB
CaC
Ru
1 Mile
5 000 Feet
Scale 1:20 000
0
1 000
2 000
3 000
4 000
5 000
¼
½
¾
1

ARIZONA RWCD- REACH III, INLET HYDROLO

~~Hum~~ 2/9/84

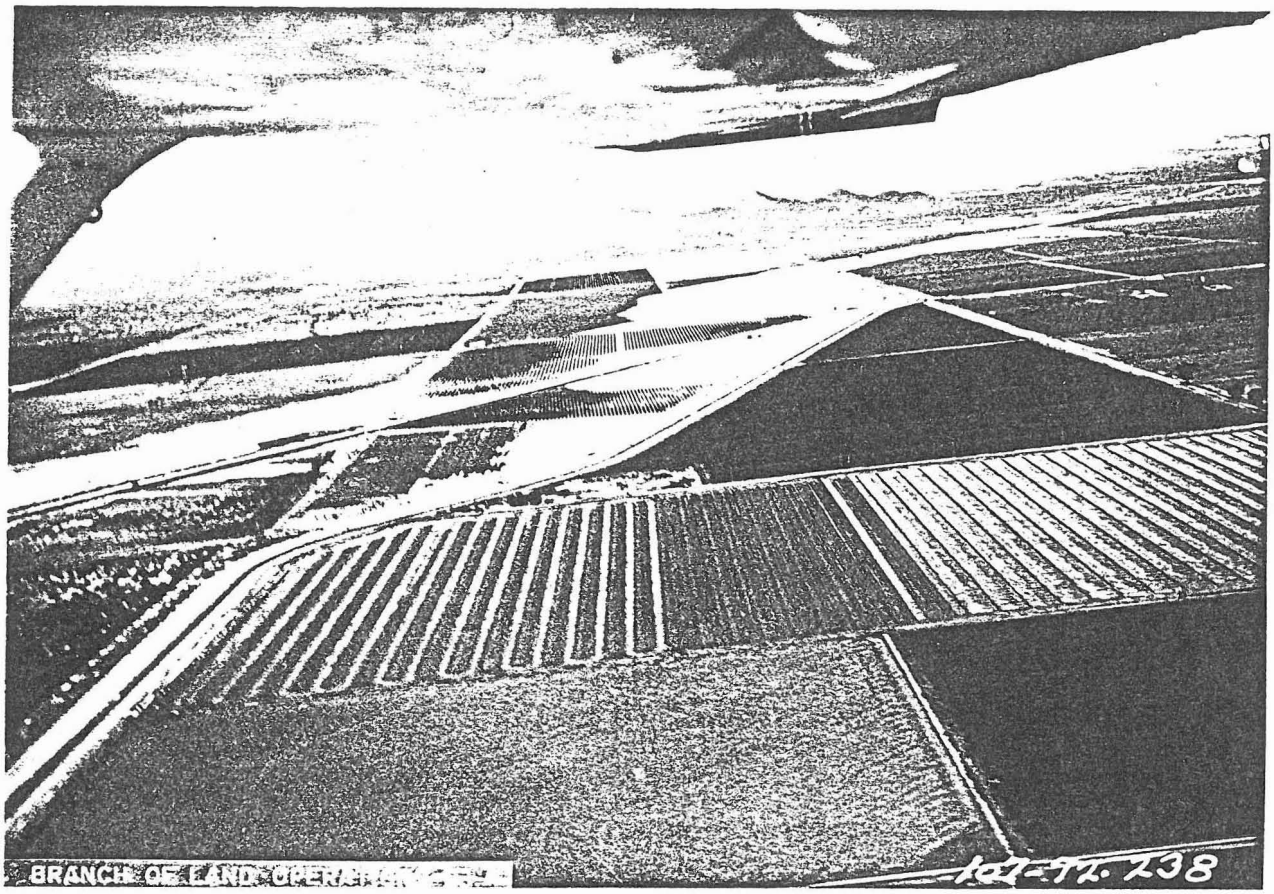
24-Hour Precipitation

1.) USE SAME POINT RAINFALL AS DETERMINED BY BOB BARTELS & SHOWN IN HIS "WORK OUTLINE, RWCD DESIGN HYDROLOGY", DATED Aug 27, 1974. (Copy Filed in Front of this Report)

Frequency Yrs	% chance	DESIGN POINT RAINFALL
100	1	3.70
25	4	2.80
10	10	2.20

2.) ADJUST FOR AREAL DISTRIBUTION BASED ON JIM MAUNES AREAL REDUCTION CURVE AS GIVEN IN SAME PAPER LISTED ABOVE

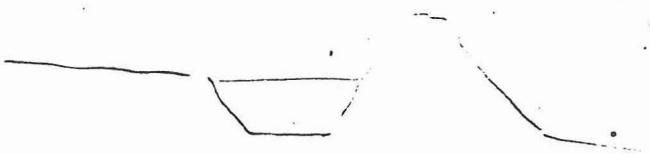
SUBAREAS NO.	TOTAL D.A. Mi²	FREQUENCY (YRS)	PT. RAINFALL (IN)	FACTOR	AREAL RAINFALL IN
1 & 1A	6.79	100	3.70	0.97	3.59
		25	2.80	0.97	2.72
		10	2.20	0.97	2.13
2,3,4,5,6,7,8	12.46	100	3.70	0.95	3.52
		25	2.80	0.95	2.66
		10	2.20	0.95	2.09
9 & 10	4.06	100	3.70	0.97	3.59
		25	2.80	0.97	2.72
		10	2.20	0.97	2.13



QUEEN CREEK FLOODING

Conference is effected by culverts under Citrus Heights Road at this time; since then bridge has been constructed Eppy

Queen Creek is increasing the threat of major damage to the reservation from flooding upstream. Landowners off the reservation have continually channeled their flood waters onto the reservation. The Gila River Indian Community will continue to vigorously oppose this increased concentration of flood waters until reservation channel needs are met. The solution to this problem is presently being worked on by all affected parties.



120 9/96

(DES/TR20. RCH3)

RWCD - REACH III
INLET HYDROLOGY

2/10/84
HCM

10-YR - STORM 1
25-YR - STORM 2
100-YR - STORM-3

EXECUTIVE CONTROL CARD 43 OPERATION LIST

LISTING OF DATA IN CORE

```
    C RWCD REACH-3,INLET HYDROLOGY.

                        VELOCITY INCREMENT
1 CTABLE                          .2000

8                   .0000       .0800       .1800       .2500       .3200
8                   .3700       .4100       .4500       .4900       .5100
8                   .5400       .5700       .5900       .6100       .6300
8                   .6500       .6600       .6700       .6900       .7000
8                   .7100       .7200       .7300       .7400       .7500
8                   .7600       .7700       .7700       .7800       .7900
8                   .7900       .8000       .8100       .8100       .8200
8                   .8200       .8300       .8300       .8400       .8400
8                   .8400       .8500       .8500       .8600       .8600
8                   .8600       .8600       .8700       .8700       .8700
8                   .8800       .8800       .8800       .8900       .8900
8                   .8900       .8900       .8900       .8900       .9000
8                   .9000       .9000       .9000       .9000       .9100
8                   .9100       .9100       .9100       .9100       .9100
8                   .9200       .9200       .9200       .9200       .9200
8                   .9200       .9200       .9200       .9300       .9300
9 ENDTBL

                        TIME INCREMENT
4 DIMHYD

8                   .0000       .0300       .1000       .1900       .3100
8                   .4700       .6600       .8200       .9300       .9900
8                  1.0000       .9900       .9300       .8600       .7800
8                   .6800       .5600       .4600       .3900       .3300
8                   .2800       .2410       .2070       .1740       .1470
8                   .1260       .1070       .0910       .0770       .0660
8                   .0550       .0470       .0400       .0340       .0290
8                   .0250       .0210       .0180       .0150       .0130
8                   .0110       .0090       .0080       .0070       .0060
8                   .0050       .0040       .0030       .0020       .0010
8                   .0000       .0000       .0000       .0000       .0000
9 ENDTBL

  COMPUTED PEAK K FACTOR =  484.00


                        TIME INCREMENT
5 RAINFL 1                        .5000
```

```
8                .0000        .0080        .0170        .0260        .0350
8                .0450        .0550        .0650        .0760        .0870
8                .0990        .1120        .1250        .1400        .1560
8                .1740        .1940        .2190        .2540        .3030
8                .5150        .5830        .6240        .6540        .6820
8                .7050        .7270        .7480        .7670        .7840
8                .8000        .8160        .8300        .8440        .8570
8                .8700        .8820        .8930        .9050        .9160
8                .9260        .9360        .9460        .9550        .9650
8                .9740        .9830        .9920       1.0000       1.0000
9 ENDTBL

                   TIME INCREMENT
5 RAINFL 2                   .5000

8                .0000        .0050        .0110        .0160        .0220
8                .0280        .0350        .0410        .0480        .0560
8                .0630        .0710        .0800        .0890        .0980
8                .1090        .1200        .1330        .1470        .1630
8                .1810        .2040        .2350        .2830        .6630
8                .7350        .7720        .7990        .8200        .8380
8                .8540        .8680        .8800        .8910        .9020
8                .9120        .9210        .9290        .9370        .9450
8                .9520        .9590        .9650        .9720        .9780
8                .9840        .9890        .9950       1.0000       1.0000
9 ENDTBL

                   TIME INCREMENT
5 RAINFL 3                   .0200

8                .0000        .0080        .0162        .0246        .0333
8                .0425        .0524        .0630        .0743        .0863
8                .0990        .1124        .1265        .1420        .1600
8                .1800        .2050        .2550        .3450        .4370
8                .5300        .6030        .6330        .6600        .6840
8                .7050        .7240        .7420        .7590        .7750
8                .7900        .8043        .8180        .8312        .8439
8                .8561        .8678        .8790        .8898        .9002
8                .9103        .9201        .9297        .9391        .9483
8                .9573        .9661        .9747        .9832        .9916
8               1.0000       1.0000       1.0000       1.0000       1.0000
9 ENDTBL
```

STANDARD CONTROL INSTRUCTIONS

```
6 RUNOFF 1   2        6       4.1200      80.0000      1.78001 1 0 1 0 1
6 REACH  3 103   6    5    8100.0000        .8000       .00000 0 0 0 0 0
6 RUNOFF 1   3        6       4.3500      77.0000      2.58001 1 0 1 0 1
6 ADDHYD 4 103   5 6 7                                        1 1 0 1 0 1
6 REACH  3 104   7    5    5200.0000        .6500       .00000 0 0 0 0 0
6 RUNOFF 1   4        6        .9700      65.0000      1.07001 1 0 1 0 1
6 ADDHYD 4 104   5 6 7                                        1 1 0 1 0 1
6 SAVMOV 5 104   7    2
6 DIVERT 6 104   2 7 1     500.0000        .0000       .00000 0 0 0 0 0
6 REACH  3 105   7    5    8000.0000        .7600       .00000 0 0 0 0 0
6 RUNOFF 1   5        6       1.0100      54.0000       .95001 1 0 1 0 1
6 ADDHYD 4 105   5 6 7                                        1 1 0 1 0 1
6 SAVMOV 5 105   7    3
6 DIVERT 6 105   3 7 2     650.0000        .0000       .00000 0 0 0 0 0
6 REACH  3 106   7    5    2600.0000        .7000       .00000 0 0 0 0 0
6 RUNOFF 1   6        6        .9800      54.0000      1.14001 1 0 1 0 1
6 ADDHYD 4 106   5 6 7                                        1 1 0 1 0 1
6 SAVMOV 5 106   7    4
6 ADDHYD 4 116   1 2 3                                        1 1 0 1 0 1
6 DIVERT 6 106   4 7 1     400.0000        .0000       .00000 0 0 0 0 0
6 REACH  3 107   7    5    5400.0000        .7000       .00000 0 0 0 0 0
6 RUNOFF 1   7        6        .5100      65.0000      1.41001 1 0 1 0 1
6 ADDHYD 4 107   5 6 7                                        1 1 0 1 0 1
6 SAVMOV 5 107   7    4
6 ADDHYD 4 117   1 3 2                                        1 1 0 1 0 1
6 SAVMOV 5 117   2    1
6 DIVERT 6 107   4 7 2     400.0000        .0000       .00000 0 0 0 0 0
6 ADDHYD 4 127   1 2 3                                        0 0 0 0 0 0
6 SAVMOV 5 127   3    1
6 REACH  3 108   7    5    5200.0000        .7000       .00000 0 0 0 0 0
6 RUNOFF 1   8        6        .5200      54.0000       .60001 1 0 1 0 1
6 ADDHYD 4 108   5 6 7                                        1 1 0 1 0 1
6 SAVMOV 5 118   7    2
6 RUNOFF 1   9        6       1.5400      56.0000      1.72001 1 0 1 0 1
6 REACH  3 110   6    5   11300.0000        .7000       .00000 0 0 0 0 0
6 RUNOFF 1  10        6       2.5200      65.0000      1.26001 1 0 1 0 1
6 ADDHYD 4 110   5 6 7                                        1 1 0 1 0 1
6 SAVMOV 5 110   7    3
6 RUNOFF 1   1        6       6.7900      79.0000      1.82001 1 0 1 0 1
  ENDATA
```

END OF LISTING

PASS= 1

EXECUTIVE CONTROL CARD 44 OPERATION INCREM, MAIN TIME INCREMENT= .20
EXECUTIVE CONTROL CARD 45 OPERATION COMPUT. FROM XSECTN/STRUCT 2/ 0 TO XSECTN/STRUCT 118/ 0
STARTING TIME= .00 RAIN DEPTH= 2.09 RAIN DURATION= 1.00 RAIN TABLE NO.= 2 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 2
AREA= 4.12 INPUT RUNOFF CURVE= 80.0 TIME OF CONCENTRATION= 1.78

PEAK TIMES PEAK DISCHARGES PEAK ELEVATIONS
13.13 467.831 (RUNOFF)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.12

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.01	.16	2.16	6.28	35.95
12.00	DISCHG	87.43	160.87	264.79	357.27	434.55	461.57	466.36	443.68	399.13	352.31
14.00	DISCHG	307.47	271.51	239.89	213.98	192.47	173.42	157.92	145.08	133.76	124.42
16.00	DISCHG	116.17	108.65	102.15	96.38	91.17	86.99	83.28	79.95	77.11	74.52
18.00	DISCHG	72.17	69.96	67.77	65.56	63.42	61.41	59.61	58.20	56.94	55.89
20.00	DISCHG	54.90	53.91	52.96	51.77	50.66	49.53	48.44	47.43	46.68	46.11
22.00	DISCHG	45.64	45.18	44.69	44.10	43.38	42.56	41.68	40.89	40.24	39.73
24.00	DISCHG	39.12	38.03	36.41	33.33	29.62	25.15	20.59	16.32	12.54	9.67
26.00	DISCHG	7.28	5.56	4.29	3.25	2.47	1.89	1.42	1.08	.82	.61
28.00	DISCHG	.46	.34	.25	.18	.13	.08	.05	.03	.01	.00

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .6167 CFS-HRS= 1639.69 ACRE-FT= 135.50

SUBROUTINE REACH CROSS SECTION 103
LENGTH= 8100.00 INPUT COEFFICIENT= .8000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 6.800 AVERAGE ROUTING COEFF= .8000 NUMBER OF ROUTINGS= 1.32

SUBROUTINE RUNOFF CROSS SECTION 3
AREA= 4.35 INPUT RUNOFF CURVE= 77.0 TIME OF CONCENTRATION= 2.58

PEAK TIMES PEAK DISCHARGES PEAK ELEVATIONS
13.77 285.578 (RUNOFF)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.35

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	5.15	15.39
12.00	DISCHG	31.13	60.20	90.57	135.71	190.86	216.51	250.73	270.19	281.94	285.44
14.00	DISCHG	278.68	269.12	250.36	231.64	213.97	196.30	182.03	168.56	156.72	145.98
16.00	DISCHG	136.07	127.47	119.16	112.21	105.25	99.78	94.36	89.89	85.74	82.05
18.00	DISCHG	78.76	75.66	72.82	70.22	67.85	65.47	63.39	61.35	59.52	57.79
20.00	DISCHG	56.17	54.69	53.25	52.00	50.77	49.68	48.60	47.62	46.66	45.81

22.00	DISCHG	45.03	44.32	43.59	43.06	42.41	41.75	41.10	40.44	39.79	39.14
24.00	DISCHG	38.38	37.55	36.45	34.88	33.14	30.54	27.94	24.90	21.84	18.92
26.00	DISCHG	16.04	13.49	11.25	9.24	7.74	6.30	5.33	4.36	3.67	3.02
28.00	DISCHG	2.52	2.08	1.71	1.43	1.16	.97	.79	.66	.53	.44
30.00	DISCHG	.35	.29	.23	.18	.15	.11	.09	.06	.04	.03
32.00	DISCHG	.02	.01	.00							

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .4964 CFS-HRS= 1393.57 ACRE-FT= 115.16

SUBROUTINE ADDHYD CROSS SECTION 103
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.53	736.751	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 8.47

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.01	.09	6.35	19.53
12.00	DISCHG	52.67	120.37	211.20	343.18	482.57	603.06	689.54	729.57	734.86	707.50
14.00	DISCHG	657.86	603.32	544.40	491.11	444.23	402.29	367.25	336.24	309.88	286.75
16.00	DISCHG	266.35	248.75	232.42	218.38	205.19	194.14	183.98	175.47	167.73	160.93
18.00	DISCHG	154.87	149.26	144.22	139.30	134.72	130.17	126.02	122.05	118.61	115.51
20.00	DISCHG	112.72	110.18	107.75	105.48	103.18	101.00	98.80	96.71	94.70	92.97
22.00	DISCHG	91.51	90.25	89.15	88.02	86.83	85.54	84.13	82.53	81.15	79.78
24.00	DISCHG	78.44	77.03	75.06	72.17	68.10	62.25	55.63	48.17	40.73	33.78
26.00	DISCHG	27.55	22.28	17.93	14.36	11.65	9.28	7.60	6.08	4.98	4.01
28.00	DISCHG	3.26	2.64	2.13	1.73	1.39	1.13	.90	.73	.58	.46
30.00	DISCHG	.35	.29	.23	.18	.15	.11	.09	.06	.04	.03
32.00	DISCHG	.02	.01	.00							

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .5550 CFS-HRS= 3033.91 ACRE-FT= 250.72

SUBROUTINE REACH CROSS SECTION 104
LENGTH= 5200.00 INPUT COEFFICIENT= .6500 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.157 AVERAGE ROUTING COEFF= .6500 NUMBER OF ROUTINGS= 1.49

SUBROUTINE RUNOFF CROSS SECTION 4
AREA= .97 INPUT RUNOFF CURVE= 65.0 TIME OF CONCENTRATION= 1.07

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.94	21.339	(RUNOFF)
21.85	4.749	(RUNOFF)
23.80	4.195	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .97

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.19
12.00	DISCHG	1.67	5.81	12.11	17.76	20.89	21.27	19.87	18.24	16.62	15.22
14.00	DISCHG	14.00	12.33	12.06	11.32	10.73	10.23	9.80	9.41	9.02	8.67
16.00	DISCHG	8.31	7.96	7.65	7.39	7.20	7.07	6.98	6.90	6.79	6.64
18.00	DISCHG	6.47	6.29	6.09	5.90	5.73	5.61	5.54	5.50	5.48	5.44
20.00	DISCHG	5.35	5.24	5.13	5.04	4.95	4.84	4.73	4.68	4.71	4.75
22.00	DISCHG	4.73	4.67	4.58	4.51	4.42	4.30	4.19	4.14	4.16	4.20
24.00	DISCHG	4.16	3.95	3.45	2.67	1.88	1.23	.78	.50	.32	.20
26.00	DISCHG	.13	.08	.05	.03	.02	.01	.00			

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1602 CFS-HRS= 100.30 ACRE-FT= 8.29

SUBROUTINE ADDHYD CROSS SECTION 104
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.99	728.054	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 9.44

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.03	1.99
12.00	DISCHG	9.70	29.63	71.27	137.33	230.23	347.00	470.75	582.83	666.60	714.75
14.00	DISCHG	727.95	710.45	672.01	622.07	567.89	515.49	467.35	424.52	387.14	354.63
16.00	DISCHG	326.44	301.82	280.31	261.33	244.49	229.49	216.14	204.33	193.89	184.70
18.00	DISCHG	176.52	169.25	162.71	156.76	151.29	146.20	141.40	136.85	132.58	128.61
20.00	DISCHG	124.96	121.64	118.65	115.91	113.35	110.87	108.47	106.19	104.04	101.97
22.00	DISCHG	99.99	98.16	96.55	95.15	93.87	92.58	91.25	89.91	88.55	87.14
24.00	DISCHG	85.67	84.07	82.19	79.86	77.02	73.51	69.01	63.42	56.91	49.80
26.00	DISCHG	42.59	35.69	29.43	24.00	19.41	15.66	12.61	10.16	8.21	6.64
28.00	DISCHG	5.38	4.36	3.53	2.86	2.32	1.87	1.51	1.22	.98	.79
30.00	DISCHG	.63	.50	.39	.31	.25	.20	.16	.12	.09	.07
32.00	DISCHG	.05	.03	.02	.01	.00					

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .5144 CFS-HRS= 3133.90 ACRE-FT= 258.99

SUBROUTINE SAVMOV CROSS SECTION 104
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

SUBROUTINE DIVERT CROSS SECTION 104
INPUT HYDROGRAPH= 2 OUTPUT HYDROGRAPHS= 7,1

SUBROUTINE REACH CROSS SECTION 105
LENGTH= 8000.00 INPUT COEFFICIENT= .7600 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 5.383 AVERAGE ROUTING COEFF= .7600 NUMBER OF ROUTINGS= 1.57

SUBROUTINE RUNOFF CROSS SECTION 5

AREA= 1.01 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= .95

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
18.04	1.169	(RUNOFF)
19.83	1.236	(RUNOFF)
20.65	1.222	(RUNOFF)
21.95	1.267	(RUNOFF)
23.84	1.230	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.01

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14.00	DISCHG	.00	.01	.05	.13	.23	.35	.46	.57	.66	.74
16.00	DISCHG	.80	.85	.89	.93	.98	1.02	1.07	1.11	1.14	1.16
18.00	DISCHG	1.16	1.17	1.16	1.16	1.15	1.16	1.18	1.20	1.22	1.24
20.00	DISCHG	1.23	1.22	1.22	1.22	1.22	1.20	1.19	1.20	1.23	1.26
22.00	DISCHG	1.27	1.25	1.24	1.24	1.23	1.20	1.17	1.18	1.21	1.23
24.00	DISCHG	1.22	1.14	.96	.70	.46	.28	.17	.10	.06	.04
26.00	DISCHG	.02	.01	.01	.00						

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0167 CFS-HRS= 10.90 ACRE-FT= .90

SUBROUTINE ADDHYD CROSS SECTION 105
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
15.10	501.609	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.01

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
12.00	DISCHG	.59	3.78	13.61	36.70	79.69	146.50	238.40	349.73	442.57	483.72
14.00	DISCHG	495.80	499.97	499.80	500.07	500.22	500.34	500.46	491.11	462.96	426.06
16.00	DISCHG	390.04	357.68	329.28	304.46	282.72	263.58	246.62	231.54	218.13	206.25
18.00	DISCHG	195.74	186.45	178.20	170.84	164.22	158.23	152.72	147.61	142.81	138.27
20.00	DISCHG	134.00	130.02	126.37	123.05	120.03	117.24	114.62	112.15	109.79	107.54
22.00	DISCHG	105.38	103.30	101.32	99.51	97.89	96.43	95.07	93.77	92.47	91.16
24.00	DISCHG	89.78	88.28	86.61	84.70	82.52	79.98	76.99	73.31	68.73	63.17
26.00	DISCHG	56.76	49.83	42.78	36.01	29.83	24.41	19.81	16.01	12.91	10.41
28.00	DISCHG	8.41	6.80	5.50	4.46	3.61	2.93	2.37	1.92	1.55	1.25
30.00	DISCHG	1.01	.81	.65	.51	.41	.32	.26	.21	.16	.13
32.00	DISCHG	.10	.07	.05	.04	.02	.00				

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.4318 CFS-HRS= 2898.74 ACRE-FT= 238.73

SUBROUTINE SAVMOV CROSS SECTION 105

INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 3

SUBROUTINE DIVERT CROSS SECTION 105
INPUT HYDROGRAPH= 3 OUTPUT HYDROGRAPHS= 7,2

SUBROUTINE REACH CROSS SECTION 106
LENGTH= 2600.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= .64

SUBROUTINE RUNOFF CROSS SECTION 6
AREA= .98 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= 1.14

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
20.59	1.185	(RUNOFF)
22.08	1.217	(RUNOFF)
23.90	1.194	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14.00	DISCHG	.00	.01	.04	.09	.17	.27	.37	.48	.57	.65
16.00	DISCHG	.72	.78	.83	.87	.91	.96	1.00	1.04	1.08	1.10
18.00	DISCHG	1.12	1.12	1.13	1.12	1.12	1.12	1.14	1.15	1.17	1.19
20.00	DISCHG	1.19	1.19	1.19	1.18	1.18	1.17	1.16	1.16	1.18	1.20
22.00	DISCHG	1.22	1.22	1.21	1.20	1.19	1.17	1.15	1.15	1.16	1.18
24.00	DISCHG	1.18	1.13	1.01	.81	.60	.41	.26	.17	.11	.07
26.00	DISCHG	.05	.03	.02	.01	.01	.00				

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0167 CFS-HRS= 10.58 ACRE-FT= .87

SUBROUTINE ADDHYD CROSS SECTION 106
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
15.12	500.989	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.18	1.45	6.23	18.99	45.97	92.91	163.32	256.85	359.36	438.85
14.00	DISCHG	478.75	493.51	498.21	499.66	500.19	500.48	500.73	498.17	484.66	456.79
16.00	DISCHG	421.91	387.23	355.63	327.70	303.23	281.78	262.87	246.13	231.25	218.03
18.00	DISCHG	206.31	195.93	186.74	178.57	171.27	164.71	158.76	153.31	148.24	143.47

20.00	DISCHG	138.97	134.74	130.80	127.19	123.90	120.89	118.10	115.50	113.05	110.73
22.00	DISCHG	108.50	106.35	104.27	102.32	100.53	98.91	97.43	96.07	94.77	93.48
24.00	DISCHG	90.15	90.70	89.05	87.13	84.96	82.53	79.77	76.56	72.66	67.89
26.00	DISCHG	62.22	55.78	48.90	41.96	35.33	29.28	23.99	19.49	15.76	12.72
28.00	DISCHG	10.26	8.29	6.70	5.42	4.39	3.56	2.88	2.33	1.89	1.52
30.00	DISCHG	1.23	.99	.79	.63	.50	.40	.32	.25	.20	.16
32.00	DISCHG	.12	.09	.07	.05	.03	.00				

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 4.5843 CFS-HRS= 2899.37 ACRE-FT= 239.60

SUBROUTINE SAVMOV CROSS SECTION 106
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 4

SUBROUTINE ADDHYD CROSS SECTION 116
INPUT HYDROGRAPHS= 1,2 OUTPUT HYDROGRAPH= 3

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.99	228.033	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 10.45

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	82.83	166.60	214.75
14.00	DISCHG	227.95	210.45	172.01	122.07	67.89	15.49	.00			

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0381 CFS-HRS= 256.75 ACRE-FT= 21.22

SUBROUTINE DIVERT CROSS SECTION 106
INPUT HYDROGRAPH= 4 OUTPUT HYDROGRAPHS= 7,1

SUBROUTINE REACH CROSS SECTION 107
LENGTH= 5400.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= 1.32

SUBROUTINE RUNOFF CROSS SECTION 7
AREA= .51 INPUT RUNOFF CURVE= 65.0 TIME OF CONCENTRATION= 1.41

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.25	9.878	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .51

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02

12.00	DISCHG	.51	1.71	3.67	6.13	8.19	9.40	9.86	9.70	9.17	8.58
14.00	DISCHG	7.00	7.46	6.97	6.54	6.15	5.83	5.55	5.31	5.08	4.87
16.00	DISCHG	4.67	4.48	4.29	4.12	3.98	3.87	3.79	3.72	3.66	3.59
18.00	DISCHG	3.51	3.42	3.33	3.23	3.14	3.06	3.00	2.96	2.93	2.90
20.00	DISCHG	2.86	2.82	2.77	2.72	2.67	2.61	2.56	2.52	2.50	2.50
22.00	DISCHG	2.50	2.48	2.45	2.42	2.38	2.33	2.27	2.23	2.22	2.21
24.00	DISCHG	2.19	2.13	1.98	1.72	1.40	1.09	.80	.56	.40	.29
26.00	DISCHG	.21	.15	.10	.07	.05	.04	.02	.02	.01	.01
28.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1602 CFS-HRS= 52.72 ACRE-FT= 4.36

SUBROUTINE ADDHYD CROSS SECTION 107
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
14.88	405.821	(NULL)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .51

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
12.00	DISCHG	.51	1.79	4.38	9.47	19.19	37.87	71.17	123.92	198.53	289.63
14.00	DISCHG	360.50	392.55	402.46	405.18	405.75	405.70	405.51	405.30	405.08	404.87
16.00	DISCHG	404.67	404.48	398.58	379.52	353.52	327.61	303.95	282.89	264.22	247.65
18.00	DISCHG	232.92	219.83	208.20	197.89	188.74	180.60	173.33	166.79	160.86	155.41
20.00	DISCHG	150.33	145.55	141.04	136.82	132.91	129.31	126.00	122.98	120.19	117.60
22.00	DISCHG	115.16	112.83	110.58	108.40	106.32	104.36	102.56	100.92	99.44	98.06
24.00	DISCHG	96.73	95.35	93.82	92.04	90.00	87.72	85.21	82.46	79.41	75.89
26.00	DISCHG	71.68	66.65	60.81	54.35	47.57	40.80	34.38	28.54	23.43	19.08
28.00	DISCHG	15.45	12.49	10.08	8.15	6.59	5.33	4.32	3.50	2.83	2.29
30.00	DISCHG	1.85	1.50	1.21	.97	.78	.62	.50	.39	.31	.25
32.00	DISCHG	.20	.16	.12	.09	.07	.05	.02	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 8.3786 CFS-HRS= 2757.73 ACRE-FT= 227.90

SUBROUTINE SAVMOV CROSS SECTION 107
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 4

SUBROUTINE ADDHYD CROSS SECTION 117
INPUT HYDROGRAPHS= 1,3 OUTPUT HYDROGRAPH= 2

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
14.09	312.388	(NULL)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 11.43

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	82.83	166.60	253.60
14.00	DISCHG	306.70	303.96	270.22	221.73	168.08	115.98	100.73	98.17	84.66	56.79
16.00	DISCHG	21.91	.00								

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0613 CFS-HRS= 452.06 ACRE-FT= 37.36

SUBROUTINE SAVMOV CROSS SECTION 117
INPUT HYDROGRAPH= 2 OUTPUT HYDROGRAPH= 1

SUBROUTINE DIVERT CROSS SECTION 107
INPUT HYDROGRAPH= 4 OUTPUT HYDROGRAPHS= 7,2

SUBROUTINE ADDHYD CROSS SECTION 127
INPUT HYDROGRAPHS= 1,2 OUTPUT HYDROGRAPH= 3

SUBROUTINE SAVMOV CROSS SECTION 127
INPUT HYDROGRAPH= 3 OUTPUT HYDROGRAPH= 1

SUBROUTINE REACH CROSS SECTION 108
LENGTH= 5200.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= 1.27

SUBROUTINE RUNOFF CROSS SECTION 8
AREA= .52 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= .60

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
18.07	.606	(RUNOFF)
19.61	.647	(RUNOFF)
20.56	.633	(RUNOFF)
21.69	.668	(RUNOFF)
22.51	.639	(RUNOFF)
23.66	.650	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .52

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14.00	DISCHG	.00	.02	.06	.13	.20	.26	.32	.37	.41	.43
16.00	DISCHG	.45	.47	.49	.51	.53	.56	.59	.60	.60	.61
18.00	DISCHG	.61	.60	.59	.59	.59	.61	.62	.63	.65	.64
20.00	DISCHG	.63	.62	.63	.63	.62	.60	.60	.63	.67	.66
22.00	DISCHG	.65	.64	.54	.64	.62	.59	.59	.62	.65	.64
24.00	DISCHG	.62	.53	.33	.16	.07	.03	.01	.01	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0167 CFS-HRS= 5.61 ACRE-FT= .46

SUBROUTINE ADDHYD CROSS SECTION 108
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
16.31	400.568	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .52

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.01	.26	1.06	2.83	6.39	13.27	26.48	50.61	90.57	150.03
14.00	DISCHG	228.00	305.15	359.08	386.00	395.89	398.97	399.93	400.25	400.37	400.42
16.00	DISCHG	400.45	400.47	400.49	399.81	390.01	370.49	346.54	322.33	299.77	279.41
18.00	DISCHG	261.23	245.07	230.68	217.91	206.58	196.53	187.60	179.66	172.54	166.11
20.00	DISCHG	160.25	154.85	149.83	145.11	140.66	136.51	132.68	129.18	125.98	123.00
22.00	DISCHG	120.23	117.66	115.23	112.91	110.66	108.48	106.44	104.56	102.83	101.23
24.00	DISCHG	99.73	98.26	96.70	95.07	93.36	91.46	89.34	87.00	84.42	81.58
26.00	DISCHG	78.36	74.60	70.12	64.87	58.91	52.45	45.77	39.20	33.02	27.43
28.00	DISCHG	22.54	18.37	14.80	12.06	9.75	7.88	6.37	5.16	4.18	3.38
30.00	DISCHG	2.74	2.21	1.79	1.45	1.17	.94	.75	.60	.48	.38
32.00	DISCHG	.30	.24	.19	.15	.12	.09	.07	.04	.02	.00

TOTAL WATER. IN INCHES ON DRAINAGE AREA= 8.2050 CFS-HRS= 2753.53 ACRE-FT= 227.55

SUBROUTINE SAVMOV CROSS SECTION 118
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

ENDCMP

PASS= 2

EXECUTIVE CONTROL CARD 47 OPERATION COMPUT, FROM XSECTN/STRUCT 9/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= .00 RAIN DEPTH= 2.13 RAIN DURATION= 1.00 RAIN TABLE NO.= 2 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 1

SUBROUTINE RUNOFF CROSS SECTION 9
AREA= 1.54 INPUT RUNOFF CURVE= 56.0 TIME OF CONCENTRATION= 1.72

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
17.88	3.629	(RUNOFF)
22.04	3.130	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.54

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.00	.00	.00	.00	.03	.08	.22	.43	.71	1.06
14.00	DISCHG	1.43	1.81	2.15	2.45	2.71	2.93	3.11	3.26	3.39	3.47
16.00	DISCHG	3.53	3.57	3.58	3.59	3.59	3.59	3.60	3.61	3.62	3.63
18.00	DISCHG	3.63	3.61	3.57	3.53	3.48	3.44	3.40	3.38	3.36	3.36
20.00	DISCHG	3.35	3.33	3.31	3.28	3.25	3.21	3.17	3.15	3.13	3.13
22.00	DISCHG	3.13	3.13	3.12	3.10	3.08	3.04	2.98	2.96	2.93	2.92
24.00	DISCHG	2.90	2.85	2.71	2.49	2.20	1.85	1.50	1.17	.89	.68
26.00	DISCHG	.51	.38	.29	.22	.17	.13	.09	.07	.05	.04
28.00	DISCHG	.03	.02	.02	.01	.01	.00				

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0370 CFS-HRS= 36.78 ACRE-FT= 3.04

SUBROUTINE REACH CROSS SECTION 110
LENGTH= 11300.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= 2.77

SUBROUTINE RUNOFF CROSS SECTION 10
AREA= 2.52 INPUT RUNOFF CURVE= 65.0 TIME OF CONCENTRATION= 1.26

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.09	57.604	(RUNOFF)
21.85	12.943	(RUNOFF)
23.75	11.424	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 2.52

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.46
12.00	DISCHG	3.87	12.55	26.42	41.41	52.09	57.11	56.71	52.79	48.71	44.79
14.00	DISCHG	41.33	38.23	35.53	33.23	31.29	29.65	28.25	27.02	25.90	24.83
16.00	DISCHG	23.78	22.73	21.79	20.97	20.32	19.84	19.48	19.19	18.88	18.51

18.00	DISCHG	18.08	17.59	17.07	16.54	16.05	15.66	15.39	15.23	15.12	14.98
20.00	DISCHG	14.78	14.52	14.25	13.99	13.73	13.44	13.15	12.95	12.91	12.94
22.00	DISCHG	12.93	12.82	12.66	12.46	12.23	11.95	11.66	11.47	11.41	11.42
24.00	DISCHG	11.38	10.99	10.01	8.34	6.43	4.67	3.22	2.19	1.50	1.03
26.00	DISCHG	.70	.47	.32	.21	.14	.09	.06	.04	.02	.01
28.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1720 CFS-HRS= 279.76 ACRE-FT= 23.12

SUBROUTINE ADDHYD CROSS SECTION 110
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES 13.09 PEAK DISCHARGES 57.605 PEAK ELEVATIONS (NULL)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.06

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.46
12.00	DISCHG	3.87	12.55	26.42	41.41	52.09	57.11	56.71	52.81	48.76	44.94
14.00	DISCHG	41.62	38.74	36.33	34.35	32.76	31.47	30.39	29.45	28.59	27.74
16.00	DISCHG	26.87	25.97	25.16	24.42	23.83	23.39	23.05	22.77	22.46	22.11
18.00	DISCHG	21.69	21.20	20.69	20.16	19.66	19.26	18.96	18.75	18.60	18.43
20.00	DISCHG	18.19	17.91	17.62	17.35	17.07	16.77	16.45	16.22	16.15	16.15
22.00	DISCHG	16.11	15.98	15.80	15.59	15.36	15.07	14.78	14.56	14.47	14.45
24.00	DISCHG	14.37	13.96	12.95	11.26	9.31	7.45	5.86	4.61	3.63	2.83
26.00	DISCHG	2.18	1.65	1.24	.92	.68	.50	.37	.27	.20	.14
28.00	DISCHG	.10	.08	.06	.04	.03	.02	.02	.01	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1208 CFS-HRS= 316.53 ACRE-FT= 26.16

SUBROUTINE SAVMOV CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 3

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 6.79 INPUT RUNOFF CURVE= 79.0 TIME OF CONCENTRATION= 1.82

PEAK TIMES 13.18 PEAK DISCHARGES 728.917 PEAK ELEVATIONS (RUNOFF)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.79

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.01	.03	1.55	12.14	45.35
12.00	DISCHG	125.62	233.56	390.71	533.48	663.36	713.69	728.66	705.34	640.63	571.29
14.00	DISCHG	500.10	442.83	392.11	351.11	316.15	284.94	260.28	238.85	219.95	204.99
16.00	DISCHG	191.19	178.87	168.28	158.55	150.14	143.16	136.90	131.70	126.92	122.44
18.00	DISCHG	118.51	114.72	111.06	107.46	103.97	100.65	97.85	95.35	93.32	91.54

20.00	DISCHG	89.87	88.23	86.53	84.80	82.99	81.19	79.39	77.88	76.59	75.63
22.00	DISCHG	74.85	74.07	73.19	72.19	71.10	69.74	68.34	66.90	65.88	64.96
24.00	DISCHG	64.20	62.42	59.74	55.48	49.21	42.17	34.62	27.72	21.32	16.48
26.00	DISCHG	12.57	9.52	7.46	5.71	4.34	3.36	2.54	1.94	1.49	1.11
28.00	DISCHG	.85	.64	.46	.34	.25	.17	.11	.07	.03	.01
30.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .5989 CFS-HRS= 2624.54 ACRE-FT= 216.89

ENDCMP

18.00	DISCHG	18.08	17.59	17.07	16.54	16.05	15.66	15.39	15.23	15.12	14.98
20.00	DISCHG	14.78	14.52	14.25	13.99	13.73	13.44	13.15	12.95	12.91	12.94
22.00	DISCHG	12.93	12.92	12.56	12.46	12.23	11.95	11.66	11.47	11.41	11.42
24.00	DISCHG	11.38	10.99	10.01	8.34	6.43	4.67	3.22	2.19	1.50	1.03
26.00	DISCHG	.70	.47	.32	.21	.14	.09	.06	.04	.02	.01
28.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1720 CFS-HRS= 279.76 ACRE-FT= 23.12

SUBROUTINE ADDHYD CROSS SECTION 110
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.09	57.605	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.06

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.46
12.00	DISCHG	3.87	12.55	26.42	41.41	52.09	57.11	56.71	52.81	48.76	44.94
14.00	DISCHG	41.62	38.74	36.33	34.35	32.76	31.47	30.39	29.45	28.59	27.74
16.00	DISCHG	26.87	25.97	25.16	24.42	23.83	23.39	23.05	22.77	22.46	22.11
18.00	DISCHG	21.69	21.20	20.69	20.16	19.66	19.26	18.96	18.75	18.60	18.43
20.00	DISCHG	18.19	17.91	17.62	17.35	17.07	16.77	16.45	16.22	16.15	16.15
22.00	DISCHG	16.11	15.98	15.80	15.59	15.36	15.07	14.78	14.56	14.47	14.45
24.00	DISCHG	14.37	13.96	12.95	11.26	9.31	7.45	5.86	4.61	3.63	2.83
26.00	DISCHG	2.18	1.65	1.24	.92	.68	.50	.37	.27	.20	.14
28.00	DISCHG	.10	.08	.06	.04	.03	.02	.02	.01	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1208 CFS-HRS= 316.53 ACRE-FT= 26.16

SUBROUTINE SAVMOV CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 3

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 6.79 INPUT RUNOFF CURVE= 79.0 TIME OF CONCENTRATION= 1.82

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.18	728.917	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.79

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.01	.03	1.55	12.14	45.35
12.00	DISCHG	125.62	233.56	390.71	533.48	563.36	713.69	728.66	705.34	640.63	571.29
14.00	DISCHG	500.10	442.93	392.11	351.11	316.15	284.94	260.29	238.85	219.95	204.99
16.00	DISCHG	191.19	178.87	168.28	159.55	150.14	143.16	136.90	131.70	126.92	122.44
18.00	DISCHG	118.51	114.72	111.06	107.46	103.97	100.65	97.85	95.35	93.32	91.54

20.00	DISCHG	88.87	88.23	86.53	84.80	82.88	81.13	79.39	77.88	76.59	75.63
22.00	DISCHG	74.85	74.07	73.19	72.19	71.10	69.74	68.34	66.90	65.88	64.96
24.00	DISCHG	64.20	62.42	59.74	55.48	49.21	42.17	34.62	27.72	21.32	16.48
26.00	DISCHG	12.57	9.52	7.46	5.71	4.34	3.36	2.54	1.94	1.49	1.11
28.00	DISCHG	.85	.64	.46	.34	.25	.17	.11	.07	.03	.01
30.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .5983 CFS-HRS= 2624.54 ACRE-FT= 216.89

ENDCMP

18.00	DISCHG	18.08	17.59	17.07	16.54	16.05	15.66	15.39	15.23	15.12	14.98
20.00	DISCHG	14.78	14.52	14.25	13.99	13.73	13.44	13.15	12.95	12.91	12.94
22.00	DISCHG	12.93	12.82	12.66	12.46	12.23	11.95	11.66	11.47	11.41	11.42
24.00	DISCHG	11.38	10.99	10.01	8.34	6.43	4.67	3.22	2.19	1.50	1.03
26.00	DISCHG	.70	.47	.32	.21	.14	.09	.06	.04	.02	.01
28.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1720 CFS-HRS= 279.76 ACRE-FT= 23.12

SUBROUTINE ADDHYD CROSS SECTION 110
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.09	57.605	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.06

TIME										
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.46
12.00	DISCHG	3.87	12.55	26.42	41.41	52.09	57.11	56.71	52.81	48.76	44.94
14.00	DISCHG	41.62	38.74	36.33	34.35	32.76	31.47	30.39	29.45	28.59	27.74
16.00	DISCHG	26.87	25.97	25.16	24.42	23.83	23.39	23.05	22.77	22.46	22.11
18.00	DISCHG	21.69	21.20	20.69	20.16	19.66	19.26	18.96	18.75	18.60	18.43
20.00	DISCHG	18.19	17.91	17.62	17.35	17.07	16.77	16.45	16.22	16.15	16.15
22.00	DISCHG	16.11	15.98	15.80	15.59	15.36	15.07	14.78	14.56	14.47	14.45
24.00	DISCHG	14.37	13.96	12.95	11.26	9.31	7.45	5.86	4.61	3.63	2.83
26.00	DISCHG	2.18	1.65	1.24	.92	.68	.50	.37	.27	.20	.14
28.00	DISCHG	.10	.08	.06	.04	.03	.02	.02	.01	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1208 CFS-HRS= 316.53 ACRE-FT= 26.16

SUBROUTINE SAVMOV CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 3

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 6.79 INPUT RUNOFF CURVE= 79.0 TIME OF CONCENTRATION= 1.82

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.18	728.917	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.79

TIME										
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.01	.03	1.55	12.14	45.35
12.00	DISCHG	125.62	233.56	390.71	533.48	663.36	713.69	728.66	705.34	640.63	571.29
14.00	DISCHG	500.10	442.93	392.11	351.11	316.15	284.94	260.28	238.85	219.95	204.99
16.00	DISCHG	191.19	178.87	168.28	159.55	150.14	143.16	136.90	131.70	126.92	122.44
18.00	DISCHG	118.51	114.72	111.06	107.46	103.97	100.65	97.85	95.35	93.32	91.54

20.00	DISCHG	89.87	88.23	86.53	84.80	82.99	81.19	79.39	77.88	76.59	75.63
22.00	DISCHG	74.85	74.07	73.19	72.19	71.10	69.74	68.34	66.90	65.88	64.96
24.00	DISCHG	64.20	62.42	59.74	55.48	49.21	42.17	34.62	27.72	21.32	16.48
26.00	DISCHG	12.57	9.52	7.46	5.71	4.34	3.36	2.54	1.94	1.49	1.11
28.00	DISCHG	.85	.64	.46	.34	.25	.17	.11	.07	.03	.01
30.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .5989 CFS-HRS= 2624.54 ACRE-FT= 216.89

ENDCMP

22.00	DISCHG	67.77	66.66	65.69	64.69	63.67	62.66	61.64	60.62	59.61	58.61
24.00	DISCHG	57.46	56.19	54.51	52.14	49.53	45.64	41.74	37.20	32.62	28.25
26.00	DISCHG	23.95	20.15	16.90	13.79	11.56	9.41	7.95	6.51	5.48	4.51
28.00	DISCHG	3.76	3.11	2.56	2.13	1.74	1.45	1.17	.98	.79	.66
30.00	DISCHG	.53	.43	.34	.27	.22	.17	.13	.09	.07	.04
32.00	DISCHG	.02	.01	.00							

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .8409 CFS-HRS= 2360.61 ACRE-FT= 195.08

SUBROUTINE ADDHYD CROSS SECTION 103
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.47	1297.338	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 8.47

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.02	.07	.35	1.03	2.67	5.78	23.22	56.28
12.00	DISCHG	127.13	260.34	432.15	668.02	910.06	1107.39	1242.12	1293.48	1284.88	1223.00
14.00	DISCHG	1125.17	1021.85	913.22	815.17	731.73	657.06	595.61	541.47	495.75	455.83
16.00	DISCHG	420.80	390.91	363.26	339.80	317.75	299.55	282.77	268.78	256.06	244.91
18.00	DISCHG	235.04	225.96	217.88	210.04	202.82	195.65	189.15	182.95	177.54	172.66
20.00	DISCHG	168.25	164.23	160.41	156.90	153.35	150.01	146.65	143.47	140.40	137.76
22.00	DISCHG	135.51	133.58	131.87	130.13	128.31	126.33	124.19	121.93	119.70	117.63
24.00	DISCHG	115.60	113.46	110.52	106.22	100.22	91.60	81.87	70.92	59.99	49.78
26.00	DISCHG	40.63	32.88	26.47	21.21	17.23	13.72	11.25	9.00	7.37	5.94
28.00	DISCHG	4.83	3.92	3.16	2.57	2.06	1.68	1.33	1.09	.86	.69
30.00	DISCHG	.54	.43	.34	.27	.22	.17	.13	.09	.07	.04
32.00	DISCHG	.02	.01	.00							

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .9179 CFS-HRS= 5017.58 ACRE-FT= 414.65

SUBROUTINE REACH CROSS SECTION 104
LENGTH= 5200.00 INPUT COEFFICIENT= .6500 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.157 AVERAGE ROUTING COEFF= .6500 NUMBER OF ROUTINGS= 1.49

SUBROUTINE RUNOFF CROSS SECTION 4
AREA= .97 INPUT RUNOFF CURVE= 65.0 TIME OF CONCENTRATION= 1.07

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.76	66.895	(RUNOFF)
21.83	8.491	(RUNOFF)
23.79	7.414	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .97

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.10	2.06
12.00	DISCHG	11.15	29.89	51.17	64.30	66.71	60.77	52.33	45.27	39.28	34.56
14.00	DISCHG	30.75	27.67	25.24	23.27	21.72	20.45	19.37	18.39	17.51	16.72
16.00	DISCHG	15.94	15.21	14.56	14.00	13.58	13.29	13.09	12.89	12.64	12.34
18.00	DISCHG	11.99	11.62	11.23	10.94	10.51	10.27	10.11	10.03	9.98	9.88
20.00	DISCHG	9.70	9.48	9.27	9.10	8.92	8.70	8.49	8.40	8.43	8.49
22.00	DISCHG	8.45	8.32	8.16	8.02	7.86	7.64	7.43	7.33	7.36	7.41
24.00	DISCHG	7.34	6.96	6.08	4.71	3.31	2.16	1.37	.88	.56	.36
26.00	DISCHG	.22	.14	.09	.05	.03	.02	.01	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .3591 CFS-HRS= 224.78 ACRE-FT= 18.58

SUBROUTINE ADDHYD CROSS SECTION 104
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.92	1288.147	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 9.44

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.03	.13	.44	1.23	3.02	11.47
12.00	DISCHG	37.59	93.15	188.14	320.06	490.38	693.73	902.30	1084.68	1213.76	1278.96
14.00	DISCHG	1287.97	1237.89	1158.22	1061.43	959.48	862.82	775.54	698.82	632.56	575.43
16.00	DISCHG	526.19	483.44	446.36	413.86	385.24	359.94	337.57	317.92	300.60	285.39
18.00	DISCHG	271.88	259.89	247.14	239.43	230.58	222.40	214.75	207.57	200.84	194.57
20.00	DISCHG	188.81	183.54	178.78	174.42	170.37	166.48	162.73	159.21	155.90	152.75
22.00	DISCHG	149.70	146.88	144.38	142.20	140.19	138.16	136.10	134.03	131.96	129.83
24.00	DISCHG	127.59	125.10	122.13	118.40	113.97	108.58	101.79	93.47	83.85	73.37
26.00	DISCHG	62.76	52.61	43.41	35.41	28.65	23.13	18.64	15.02	12.15	9.82
28.00	DISCHG	7.96	6.45	5.23	4.24	3.44	2.78	2.25	1.81	1.46	1.17
30.00	DISCHG	.94	.75	.59	.47	.38	.30	.24	.18	.14	.10
32.00	DISCHG	.07	.05	.03	.02	.00					

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .8604 CFS-HRS= 5242.02 ACRE-FT= 433.20

SUBROUTINE SAVMOV CROSS SECTION 104
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

SUBROUTINE DIVERT CROSS SECTION 104
INPUT HYDROGRAPH= 2 OUTPUT HYDROGRAPHS= 7,1

SUBROUTINE REACH CROSS SECTION 105
LENGTH= 8000.00 INPUT COEFFICIENT= .7600 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 5.383 AVERAGE ROUTING COEFF= .7600 NUMBER OF ROUTINGS= 1.57

SUBROUTINE RUNOFF CROSS SECTION 5

AREA= 1.01 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= .95

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.55	8.083	(RUNOFF)
19.54	4.483	(RUNOFF)
21.84	4.039	(RUNOFF)
23.79	3.638	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.01

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.05	.40	1.52	3.42	5.47	6.98	7.79	8.05	8.08	7.99
14.00	DISCHG	7.79	7.57	7.34	7.14	6.98	6.82	6.69	6.54	6.38	6.20
16.00	DISCHG	6.00	5.81	5.63	5.50	5.41	5.38	5.37	5.34	5.28	5.19
18.00	DISCHG	5.07	4.95	4.80	4.66	4.56	4.49	4.47	4.47	4.48	4.46
20.00	DISCHG	4.38	4.29	4.22	4.17	4.11	4.00	3.91	3.91	3.98	4.04
22.00	DISCHG	4.01	3.94	3.87	3.83	3.76	3.64	3.54	3.53	3.59	3.64
24.00	DISCHG	3.58	3.33	2.79	2.04	1.33	.81	.48	.29	.17	.10
26.00	DISCHG	.06	.04	.02	.01	.00					

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0963 CFS-HRS= 62.79 ACRE-FT= 5.19

SUBROUTINE ADDHYD CROSS SECTION 105
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
14.08	507.631	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.01

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.01	.05	.20	.60	1.55
12.00	DISCHG	5.07	17.41	48.77	109.84	206.62	339.94	452.91	493.16	504.30	507.06
14.00	DISCHG	507.56	507.51	507.33	507.14	506.98	506.82	506.69	506.54	506.38	506.20
16.00	DISCHG	506.00	505.81	500.84	481.93	451.72	420.77	392.33	366.89	344.33	324.41
18.00	DISCHG	306.83	291.31	277.54	265.28	254.32	244.45	235.49	227.24	219.56	212.33
20.00	DISCHG	205.52	199.16	193.32	188.00	183.13	178.63	174.43	170.51	166.85	163.39
22.00	DISCHG	160.04	156.79	153.71	150.87	148.31	145.96	143.78	141.72	139.72	137.70
24.00	DISCHG	135.56	133.16	130.34	127.02	123.25	119.00	114.17	108.45	101.49	93.18
26.00	DISCHG	83.68	73.43	63.05	53.09	43.99	36.02	29.25	23.65	19.08	15.40
28.00	DISCHG	12.44	10.06	8.15	6.60	5.35	4.34	3.51	2.84	2.30	1.86
30.00	DISCHG	1.49	1.20	.96	.77	.61	.49	.39	.31	.24	.19
32.00	DISCHG	.14	.11	.09	.05	.03	.02	.00			

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 6.0070 CFS-HRS= 3915.48 ACRE-FT= 323.58

SUBROUTINE SAVMOV CROSS SECTION 105
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 3

SUBROUTINE DIVERT CROSS SECTION 105
INPUT HYDROGRAPH= 3 OUTPUT HYDROGRAPHS= 7,2

SUBROUTINE REACH CROSS SECTION 106
LENGTH= 2600.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= .64

SUBROUTINE RUNOFF CROSS SECTION 6
AREA= .98 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= 1.14

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.90	7.591	(RUNOFF)
21.91	3.891	(RUNOFF)
23.82	3.504	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.04	.31	1.07	2.44	4.12	5.63	6.68	7.27	7.52	7.59
14.00	DISCHG	7.53	7.38	7.21	7.03	6.87	6.73	6.59	6.45	6.31	6.14
16.00	DISCHG	5.96	5.78	5.61	5.45	5.34	5.28	5.25	5.22	5.16	5.09
18.00	DISCHG	4.99	4.88	4.75	4.62	4.51	4.43	4.38	4.36	4.36	4.34
20.00	DISCHG	4.29	4.22	4.15	4.09	4.03	3.95	3.87	3.83	3.85	3.88
22.00	DISCHG	3.89	3.85	3.80	3.74	3.68	3.60	3.51	3.46	3.48	3.50
24.00	DISCHG	3.49	3.73	2.96	2.38	1.74	1.18	.76	.50	.33	.22
26.00	DISCHG	.14	.09	.06	.04	.02	.01	.01	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0963 CFS-HRS= 60.92 ACRE-FT= 5.03

SUBROUTINE ADDHYD CROSS SECTION 106
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
14.29	514.797	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.02	.09	.29	.82
12.00	DISCHG	2.49	8.51	25.95	64.62	133.35	236.72	359.13	452.92	494.93	509.50
14.00	DISCHG	513.76	514.68	514.63	514.32	514.00	513.69	513.40	513.12	512.82	512.49
16.00	DISCHG	512.13	511.75	509.99	501.41	481.06	452.47	422.68	394.84	369.74	347.41
18.00	DISCHG	327.63	310.15	294.67	280.91	269.66	257.71	247.88	238.95	230.74	223.07
20.00	DISCHG	215.83	209.01	202.66	196.83	191.49	186.58	182.03	177.82	173.95	170.33

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 22.00    DISCHG      166.87    163.49    160.22    157.13    154.28    151.65    149.23    147.01    144.95    142.96
 24.00    DISCHG      140.89    138.54    135.68    132.19    128.18    123.79    119.03    113.77    107.65    100.37
 26.00    DISCHG       91.85     82.29     72.11     61.87     52.10     43.20     35.40     28.77     23.28     18.80
 28.00    DISCHG       15.17     12.26      9.92      8.03      6.51      5.27      4.27      3.46      2.80      2.26
 30.00    DISCHG        1.83      1.47      1.18       .95       .75       .60       .48       .38       .30       .24
 32.00    DISCHG         .19       .14       .11       .08       .05       .03       .00

          TOTAL WATER, IN INCHES ON DRAINAGE AREA=   6.2875        CFS-HRS=     3976.62        ACRE-FT=     328.63


SUBROUTINE SAVMOV    CROSS SECTION 106
          INPUT HYDROGRAPH= 7      OUTPUT HYDROGRAPH= 4


SUBROUTINE ADDHYD    CROSS SECTION 116
          INPUT HYDROGRAPHS= 1,2      OUTPUT HYDROGRAPH= 3

          PEAK TIMES                    PEAK DISCHARGES                PEAK ELEVATIONS
             13.92                          788.126                        (NULL)

   TIME                                HYDROGRAPH, TZERO=     .00        DELTA T=  .20        DRAINAGE AREA=  10.45
    .00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   2.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   4.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   6.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   8.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
  10.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
  12.00    DISCHG          .00       .00       .00       .00       .00    193.73    402.30    584.68    713.76    778.96
  14.00    DISCHG       783.97    737.89    658.22    561.43    458.48    362.82    275.54    198.82    132.56     75.43
  16.00    DISCHG        26.19       .00

          TOTAL WATER, IN INCHES ON DRAINAGE AREA=    .2065        CFS-HRS=     1392.81        ACRE-FT=     115.10


SUBROUTINE DIVERT    CROSS SECTION 106
          INPUT HYDROGRAPH= 4      OUTPUT HYDROGRAPHS= 7,1


SUBROUTINE REACH     CROSS SECTION 107
          LENGTH=   5400.00      INPUT COEFFICIENT=   .7000      INPUT ROUTINGS=   .00

          AVERAGE WATER VELOCITY=   3.967        AVERAGE ROUTING COEFF=  .7000        NUMBER OF ROUTINGS=  1.32


SUBROUTINE RUNOFF    CROSS SECTION   7
          AREA=    .51      INPUT RUNOFF CURVE=  65.0      TIME OF CONCENTRATION=  1.41

          PEAK TIMES                    PEAK DISCHARGES                PEAK ELEVATIONS
             13.02                           29.782                       (RUNOFF)

   TIME                                HYDROGRAPH, TZERO=     .00        DELTA T=  .20        DRAINAGE AREA=    .51
    .00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   2.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   4.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   6.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
   8.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
  10.00    DISCHG          .00       .00       .00       .00       .00       .00       .00       .00       .00       .72
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12.00	DISCHG	3.62	9.05	16.32	23.75	28.46	29.78	28.81	26.39	23.50	20.99
14.00	DISCHG	19.83	17.00	15.43	14.11	13.00	12.08	11.33	10.69	10.13	9.61
16.00	DISCHG	9.14	8.68	8.26	7.88	7.57	7.33	7.14	6.99	6.85	6.70
18.00	DISCHG	6.53	6.35	6.16	5.96	5.78	5.63	5.50	5.41	5.34	5.28
20.00	DISCHG	5.21	5.11	5.02	4.92	4.82	4.71	4.61	4.54	4.49	4.48
22.00	DISCHG	4.47	4.43	4.38	4.31	4.23	4.14	4.04	3.96	3.93	3.91
24.00	DISCHG	3.87	3.76	3.50	3.03	2.48	1.91	1.41	.99	.70	.51
26.00	DISCHG	.36	.26	.18	.13	.09	.06	.04	.03	.02	.01
28.00	DISCHG	.01	.00								

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .3592 CFS-HRS= 118.23 ACRE-FT= 9.77

SUBROUTINE ADDHYD CROSS SECTION 107
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES 14.25 PEAK DISCHARGES 415.609 PEAK ELEVATIONS (NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .51

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.01	.05	.89
12.00	DISCHG	4.11	10.51	21.16	38.87	68.19	117.10	193.55	294.71	371.84	404.81
14.00	DISCHG	413.94	415.53	414.99	413.97	412.96	412.07	411.33	410.69	410.13	409.61
16.00	DISCHG	409.14	408.68	408.26	407.88	407.57	407.33	407.14	406.99	404.54	391.25
18.00	DISCHG	371.09	350.40	331.20	313.93	298.52	284.82	272.61	261.71	251.90	242.98
20.00	DISCHG	234.73	227.00	219.72	212.90	206.56	200.72	195.34	190.40	185.86	181.70
22.00	DISCHG	177.84	174.18	170.65	167.23	163.93	160.81	157.90	155.23	152.81	150.59
24.00	DISCHG	148.48	146.32	143.87	140.88	137.29	133.15	128.60	123.74	118.57	112.85
26.00	DISCHG	106.26	98.59	89.83	80.21	70.17	60.18	50.72	42.12	34.58	28.17
28.00	DISCHG	22.83	18.45	14.91	12.05	9.75	7.89	6.40	5.18	4.20	3.40
30.00	DISCHG	2.75	2.22	1.79	1.44	1.16	.93	.74	.59	.47	.37
32.00	DISCHG	.30	.23	.18	.14	.10	.07	.05	.02	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 11.2346 CFS-HRS= 3697.73 ACRE-FT= 305.58

SUBROUTINE SAVMOV CROSS SECTION 107
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 4

SUBROUTINE ADDHYD CROSS SECTION 117
INPUT HYDROGRAPHS= 1,3 OUTPUT HYDROGRAPH= 2

PEAK TIMES 13.93 PEAK DISCHARGES 900.721 PEAK ELEVATIONS (NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 11.43

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.00	.00	.00	.00	.00	193.73	402.30	637.61	808.69	888.46
14.00	DISCHG	897.73	852.56	772.85	675.75	573.48	476.51	388.94	311.94	245.38	187.92
16.00	DISCHG	138.33	111.75	108.99	101.41	81.06	52.47	22.68	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .2427 CFS-HRS= 1790.31 ACRE-FT= 147.95

SUBROUTINE SAVMOV CROSS SECTION 117
INPUT HYDROGRAPH= 2 OUTPUT HYDROGRAPH= 1

SUBROUTINE DIVERT CROSS SECTION 107
INPUT HYDROGRAPH= 4 OUTPUT HYDROGRAPHS= 7,2

SUBROUTINE ADDHYD CROSS SECTION 127
INPUT HYDROGRAPHS= 1,2 OUTPUT HYDROGRAPH= 3

SUBROUTINE SAVMOV CROSS SECTION 127
INPUT HYDROGRAPH= 3 OUTPUT HYDROGRAPH= 1

SUBROUTINE REACH CROSS SECTION 108
LENGTH= 5200.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= 1.27

SUBROUTINE RUNOFF CROSS SECTION 8
AREA= .52 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= .60

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.10	4.463	(RUNOFF)
17.11	2.767	(RUNOFF)
18.53	2.319	(RUNOFF)
21.66	2.127	(RUNOFF)
23.65	1.916	(RUNOFF)

TIME HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .52

.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.04	.51	1.75	3.33	4.27	4.45	4.45	4.32	4.20	4.05
14.00	DISCHG	3.86	3.75	3.62	3.54	3.47	3.40	3.35	3.25	3.17	3.06
16.00	DISCHG	2.94	2.86	2.78	2.74	2.74	2.76	2.76	2.72	2.67	2.60
18.00	DISCHG	2.53	2.46	2.37	2.30	2.27	2.28	2.29	2.31	2.32	2.27
20.00	DISCHG	2.19	2.14	2.13	2.12	2.06	1.97	1.95	2.04	2.12	2.10
22.00	DISCHG	2.02	1.97	1.96	1.95	1.88	1.78	1.75	1.83	1.91	1.89
24.00	DISCHG	1.79	1.54	.97	.46	.21	.09	.04	.02	.01	.00

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .0963 CFS-HRS= 32.33 ACRE-FT= 2.67

SUBROUTINE ADDHYD CROSS SECTION 108
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
15.11	403.347	(NULL)
17.11	402.767	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .52

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03
12.00	DISCHG	.49	2.84	8.43	17.86	32.03	54.20	90.82	149.25	232.10	315.69
14.00	DISCHG	370.82	393.60	400.56	402.62	403.20	403.32	403.32	403.24	403.17	403.06
16.00	DISCHG	402.94	402.86	402.78	402.74	402.74	402.76	402.76	402.72	402.67	402.60
18.00	DISCHG	398.24	385.25	366.99	347.73	329.44	312.77	297.82	284.47	272.55	261.82
20.00	DISCHG	252.09	243.23	235.05	227.39	220.17	213.38	207.16	201.52	196.33	191.46
22.00	DISCHG	186.93	182.78	178.93	175.27	171.68	168.19	164.92	161.95	159.20	156.57
24.00	DISCHG	154.10	151.63	148.89	146.07	143.15	139.86	136.07	131.84	127.23	122.29
26.00	DISCHG	116.93	110.89	103.94	95.96	87.03	77.41	67.53	57.83	48.72	40.48
28.00	DISCHG	33.27	27.13	22.02	17.82	14.41	11.66	9.43	7.64	6.19	5.01
30.00	DISCHG	4.06	3.29	2.66	2.15	1.73	1.39	1.12	.90	.72	.57
32.00	DISCHG	.45	.36	.29	.22	.17	.13	.10	.07	.04	.02
34.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 10.9967 CFS-HRS= 3690.42 ACRE-FT= 304.98

SUBROUTINE SAVMOV CROSS SECTION 118
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

ENDCMP

PASS= 4

EXECUTIVE CONTROL CARD 51 OPERATION COMPUT, FROM XSECTN/STRUCT 9/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= .00 RAIN DEPTH= 2.72 RAIN DURATION= 1.00 RAIN TABLE NO.= 2 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 2

SUBROUTINE RUNOFF CROSS SECTION 9
AREA= 1.54 INPUT RUNOFF CURVE= 56.0 TIME OF CONCENTRATION= 1.72

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.82	20.195	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.54

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
12.00	DISCHG	.56	1.79	3.69	6.96	10.41	13.89	16.67	18.63	19.93	20.19
14.00	DISCHG	20.01	19.60	18.99	18.34	17.70	17.08	16.50	15.95	15.43	14.92
16.00	DISCHG	14.43	13.93	13.46	13.01	12.60	12.27	11.98	11.73	11.52	11.31
18.00	DISCHG	11.10	10.86	10.61	10.35	10.08	9.84	9.62	9.46	9.33	9.22
20.00	DISCHG	9.12	9.00	8.87	8.73	8.58	8.43	8.28	8.16	8.07	8.02
22.00	DISCHG	7.98	7.93	7.87	7.79	7.68	7.56	7.42	7.29	7.20	7.15
24.00	DISCHG	7.06	6.92	6.57	6.02	5.32	4.45	3.61	2.81	2.14	1.63
26.00	DISCHG	1.22	.92	.71	.53	.40	.30	.23	.17	.13	.09
28.00	DISCHG	.07	.05	.04	.02	.02	.01	.01	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .1462 CFS-HRS= 145.32 ACRE-FT= 12.01

SUBROUTINE REACH CROSS SECTION 110
LENGTH= 11300.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= 2.77

SUBROUTINE RUNOFF CROSS SECTION 10
AREA= 2.52 INPUT RUNOFF CURVE= 65.0 TIME OF CONCENTRATION= 1.26

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.90	172.968	(RUNOFF)
21.77	23.126	(RUNOFF)
23.71	20.182	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 2.52

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.03	5.09
12.00	DISCHG	24.36	62.46	110.82	151.18	170.64	170.33	155.17	135.32	118.89	104.92
14.00	DISCHG	93.43	83.85	75.98	69.56	64.33	60.02	56.44	53.39	50.71	48.18
16.00	DISCHG	45.74	43.44	41.46	39.72	38.33	37.28	36.49	35.81	35.13	34.35
18.00	DISCHG	33.46	32.47	31.43	30.38	29.41	28.65	28.10	27.74	27.48	27.19

20.00	DISCHG	26.78	26.26	25.72	25.22	24.71	24.16	23.60	23.21	23.10	23.12
22.00	DISCHG	23.07	22.86	22.53	22.15	21.71	21.19	20.67	20.30	20.17	20.17
24.00	DISCHG	20.07	19.38	17.67	14.68	11.33	8.21	5.67	3.86	2.64	1.80
26.00	DISCHG	1.23	.83	.56	.38	.25	.16	.10	.06	.03	.02
28.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .3835 CFS-HRS= 623.75 ACRE-FT= 51.55

SUBROUTINE ADDHYD CROSS SECTION 110
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.92	174.108	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.06

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.03	5.09
12.00	DISCHG	24.36	62.46	110.87	151.54	171.76	172.85	159.92	142.94	129.64	118.66
14.00	DISCHG	107.68	101.96	95.20	89.23	83.99	79.37	75.29	71.66	68.37	65.24
16.00	DISCHG	62.23	59.38	56.87	54.63	52.73	51.20	49.94	48.83	47.75	46.64
18.00	DISCHG	45.46	44.22	42.94	41.68	40.49	39.48	38.68	38.07	37.56	37.04
20.00	DISCHG	36.43	35.74	35.07	34.44	33.82	33.14	32.45	31.92	31.66	31.55
22.00	DISCHG	31.36	31.03	30.63	30.18	29.69	29.11	28.52	28.06	27.83	27.71
24.00	DISCHG	27.48	26.68	24.85	21.82	18.33	14.98	12.05	9.69	7.77	6.16
26.00	DISCHG	4.80	3.68	2.78	2.08	1.55	1.15	.85	.63	.46	.34
28.00	DISCHG	.24	.18	.13	.10	.07	.05	.04	.03	.02	.01
30.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .2935 CFS-HRS= 769.05 ACRE-FT= 63.55

SUBROUTINE SAVMOV CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 3

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 6.79 INPUT RUNOFF CURVE= 79.0 TIME OF CONCENTRATION= 1.82

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.11	1276.110	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.79

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.08	.24	1.18	3.17	6.68	17.35	46.85	121.29
12.00	DISCHG	277.16	478.84	754.81	993.73	1201.93	1265.80	1269.86	1209.12	1083.28	953.19
14.00	DISCHG	825.61	724.50	635.57	564.30	504.11	450.70	408.94	372.87	341.26	316.53
16.00	DISCHG	293.83	273.73	256.61	240.95	227.50	216.34	206.32	197.97	190.32	183.17
18.00	DISCHG	177.06	171.20	165.57	160.06	154.74	149.67	145.41	141.58	138.47	135.75

20.00	DISCHG	133.18	130.66	128.07	125.43	122.69	119.96	117.25	114.96	112.99	111.53
22.00	DISCHG	110.31	109.11	107.77	106.25	104.60	102.56	100.45	98.30	96.76	95.38
24.00	DISCHG	94.22	91.57	87.63	81.35	72.14	61.82	50.74	40.53	31.25	24.16
26.00	DISCHG	18.42	13.95	10.94	8.37	6.36	4.93	3.72	2.84	2.18	1.63
28.00	DISCHG	1.24	.93	.67	.51	.36	.25	.16	.10	.05	.02
30.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .9860 CFS-HRS= 4320.77 ACRE-FT= 357.07

ENDCMP

PASS= 5

EXECUTIVE CONTROL CARD 53 OPERATION COMPUT, FROM XSECTN/STRUCT 2/ 0 TO XSECTN/STRUCT 118/ 0
STARTING TIME= .00 RAIN DEPTH= 3.52 RAIN DURATION= 1.00 RAIN TABLE NO.= 2 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 3

SUBROUTINE RUNOFF CROSS SECTION 2
AREA= 4.12 INPUT RUNOFF CURVE= 80.0 TIME OF CONCENTRATION= 1.78

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.01	1369.267	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.12

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.06	.20	.58	1.46	2.73
10.00	DISCHG	4.89	7.95	11.74	17.13	23.97	32.09	43.95	65.95	98.20	212.17
12.00	DISCHG	385.13	617.76	908.04	1151.64	1335.10	1369.11	1342.32	1242.12	1092.92	943.90
14.00	DISCHG	809.41	703.90	612.11	537.89	477.31	424.22	381.66	346.84	316.45	291.77
16.00	DISCHG	270.26	250.82	234.37	219.87	206.85	196.44	187.15	178.79	171.77	165.47
18.00	DISCHG	159.87	154.72	149.61	144.53	139.60	134.99	130.85	127.59	124.69	122.22
20.00	DISCHG	119.94	117.64	115.21	112.72	110.20	107.63	105.18	102.89	101.16	99.84
22.00	DISCHG	98.74	97.65	96.46	95.17	93.54	91.72	89.75	87.98	86.53	85.37
24.00	DISCHG	84.00	81.62	78.09	71.46	63.49	53.89	44.13	34.96	26.87	20.72
26.00	DISCHG	15.59	11.90	9.19	6.95	5.30	4.06	3.04	2.31	1.76	1.31
28.00	DISCHG	.98	.73	.53	.39	.27	.18	.11	.06	.02	.01
30.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.6485 CFS-HRS= 4383.30 ACRE-FT= 362.24

SUBROUTINE REACH CROSS SECTION 103
LENGTH= 8100.00 INPUT COEFFICIENT= .8000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 6.800 AVERAGE ROUTING COEFF= .8000 NUMBER OF ROUTINGS= 1.32

SUBROUTINE RUNOFF CROSS SECTION 3
AREA= 4.35 INPUT RUNOFF CURVE= 77.0 TIME OF CONCENTRATION= 2.58

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.62	945.371	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.35

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.04
10.00	DISCHG	.16	.35	1.03	1.70	3.80	6.01	10.63	16.21	42.50	89.28
12.00	DISCHG	154.55	264.75	378.41	531.70	684.99	789.22	886.03	929.52	945.20	934.85
14.00	DISCHG	892.15	841.73	766.10	690.77	628.45	566.13	517.57	472.20	432.96	397.80
16.00	DISCHG	365.80	338.75	312.74	291.56	270.38	254.20	238.19	225.18	213.14	202.54
18.00	DISCHG	193.15	184.36	176.76	169.30	162.89	156.47	150.95	145.51	140.65	136.03
20.00	DISCHG	131.72	127.73	123.97	120.86	117.77	115.09	112.41	110.00	107.64	105.56

22.00	DISCHG	103.63	101.87	100.32	98.76	97.16	95.56	93.97	92.37	90.80	89.24
24.00	DISCHG	87.44	85.48	82.90	79.27	75.28	69.35	63.42	56.51	49.55	42.91
26.00	DISCHG	36.38	30.60	25.51	20.95	17.56	14.29	12.09	9.88	8.33	6.85
28.00	DISCHG	5.70	4.72	3.89	3.23	2.63	2.20	1.78	1.49	1.20	1.00
30.00	DISCHG	.80	.65	.52	.41	.33	.25	.20	.14	.10	.06
32.00	DISCHG	.04	.02	.01	.00						

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.4425 CFS-HRS= 4049.49 ACRE-FT= 334.65

SUBROUTINE ADDHYD CROSS SECTION 103
INPUT HYDROGRAPHS= 5.6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.42	2276.733	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 8.47

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.03	.13	.39	1.05
10.00	DISCHG	2.20	4.08	7.29	11.30	17.94	26.14	38.09	53.61	96.73	169.84
12.00	DISCHG	309.40	556.42	867.06	1276.04	1687.63	2006.81	2214.56	2276.11	2235.44	2108.14
14.00	DISCHG	1923.07	1732.66	1536.71	1360.01	1213.21	1081.74	974.77	880.79	801.82	733.15
16.00	DISCHG	673.13	622.38	575.50	536.17	499.21	469.05	441.21	418.08	397.07	378.69
18.00	DISCHG	362.50	347.67	334.62	321.97	310.45	299.03	288.72	278.89	270.30	262.52
20.00	DISCHG	255.48	249.06	242.99	237.50	231.96	226.79	221.57	216.65	211.91	207.82
22.00	DISCHG	204.33	201.30	198.63	195.92	193.08	190.03	186.74	183.27	179.85	176.68
24.00	DISCHG	173.55	170.28	165.80	159.30	150.27	137.33	122.77	106.38	90.03	74.74
26.00	DISCHG	61.03	49.43	39.82	31.92	25.93	20.66	16.95	13.57	11.12	8.97
28.00	DISCHG	7.30	5.91	4.78	3.89	3.11	2.55	2.02	1.65	1.30	1.04
30.00	DISCHG	.82	.65	.52	.41	.33	.25	.20	.14	.10	.06
32.00	DISCHG	.04	.02	.01	.00						

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.5430 CFS-HRS= 8434.22 ACRE-FT= 697.00

SUBROUTINE REACH CROSS SECTION 104
LENGTH= 5200.00 INPUT COEFFICIENT= .6500 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.157 AVERAGE ROUTING COEFF= .6500 NUMBER OF ROUTINGS= 1.49

SUBROUTINE RUNOFF CROSS SECTION 4
AREA= .97 INPUT RUNOFF CURVE= 65.0 TIME OF CONCENTRATION= 1.07

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.65	174.529	(RUNOFF)
21.81	14.874	(RUNOFF)
23.78	12.881	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .97

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.01	1.28	12.33
12.00	DISCHG	46.43	101.53	151.69	173.54	166.70	142.96	117.80	98.36	82.82	70.99
14.00	DISCHG	61.80	54.63	49.09	44.72	41.32	38.56	36.20	34.14	32.35	30.78
16.00	DISCHG	29.26	27.83	26.57	25.48	24.66	24.08	23.65	23.25	22.75	22.17
18.00	DISCHG	21.51	20.81	20.08	19.36	18.73	18.27	17.98	17.81	17.69	17.50
20.00	DISCHG	17.16	16.74	16.36	16.04	15.71	15.31	14.92	14.74	14.78	14.87
22.00	DISCHG	14.80	14.55	14.27	14.00	13.71	13.32	12.93	12.75	12.80	12.88
24.00	DISCHG	12.75	12.08	10.55	8.17	5.74	3.75	2.37	1.52	.97	.62
26.00	DISCHG	.39	.24	.15	.09	.05	.03	.01	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .7609 CFS-HRS= 476.32 ACRE-FT= 39.36

SUBROUTINE ADDHYD CROSS SECTION 104
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.86	2273.188	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 9.44

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.01	.05	.17
10.00	DISCHG	.48	1.12	2.27	4.21	7.10	11.39	17.46	25.85	38.54	71.08
12.00	DISCHG	147.30	280.94	474.64	717.51	1012.03	1353.32	1696.46	1987.99	2183.61	2267.74
14.00	DISCHG	2249.77	2147.50	1991.53	1810.45	1623.69	1449.08	1293.37	1157.68	1041.46	941.81
16.00	DISCHG	856.37	782.51	718.78	663.23	614.61	571.86	534.31	501.48	472.63	447.34
18.00	DISCHG	424.92	405.08	387.33	371.39	356.94	343.68	331.37	319.86	309.13	299.15
20.00	DISCHG	289.93	281.49	273.83	266.85	260.38	254.20	248.29	242.77	237.64	232.75
22.00	DISCHG	228.02	223.61	219.68	216.24	213.05	209.85	206.59	203.36	200.17	196.89
24.00	DISCHG	193.43	189.53	184.79	178.83	171.76	163.35	152.96	140.36	125.87	110.13
26.00	DISCHG	94.21	79.01	65.22	53.22	43.08	34.79	28.05	22.62	18.30	14.81
28.00	DISCHG	12.01	9.74	7.90	6.40	5.19	4.20	3.40	2.74	2.21	1.78
30.00	DISCHG	1.42	1.13	.90	.72	.57	.45	.36	.28	.21	.16
32.00	DISCHG	.11	.08	.05	.03	.01	.00				

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.4626 CFS-HRS= 8910.32 ACRE-FT= 736.35

SUBROUTINE SAVMOV CROSS SECTION 104
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

SUBROUTINE DIVERT CROSS SECTION 104
INPUT HYDROGRAPH= 2 OUTPUT HYDROGRAPHS= 7,1

SUBROUTINE REACH CROSS SECTION 105
LENGTH= 8000.00 INPUT COEFFICIENT= .7600 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 5.383 AVERAGE ROUTING COEFF= .7600 NUMBER OF ROUTINGS= 1.57

SUBROUTINE RUNOFF CROSS SECTION 5

AREA= 1.01 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= .95

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.77	51.985	(RUNOFF)
21.81	9.249	(RUNOFF)
23.78	8.132	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.01

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.62
12.00	DISCHG	5.99	20.43	39.09	49.74	51.91	47.80	42.63	37.85	33.73	30.42
14.00	DISCHG	27.60	25.38	23.55	22.08	20.91	19.89	19.05	18.29	17.56	16.85
16.00	DISCHG	16.10	15.42	14.80	14.30	13.97	13.77	13.63	13.46	13.21	12.89
18.00	DISCHG	12.53	12.15	11.74	11.34	11.03	10.82	10.72	10.68	10.65	10.55
20.00	DISCHG	10.34	10.08	9.88	9.73	9.55	9.28	9.04	9.01	9.14	9.25
22.00	DISCHG	9.17	8.97	8.80	8.67	8.50	8.22	7.97	7.92	8.04	8.13
24.00	DISCHG	7.99	7.42	6.21	4.53	2.95	1.79	1.07	.64	.39	.23
26.00	DISCHG	.14	.08	.04	.02	.01	.00				

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .3185 CFS-HRS= 207.61 ACRE-FT= 17.16

SUBROUTINE ADDHYD CROSS SECTION 105
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.28	538.463	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.01

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02
10.00	DISCHG	.07	.23	.59	1.29	2.53	4.53	7.56	11.97	18.21	27.81
12.00	DISCHG	50.48	105.33	205.72	351.50	480.86	528.01	537.57	536.60	533.42	530.35
14.00	DISCHG	527.58	525.38	523.55	522.08	520.91	519.89	519.05	518.29	517.56	516.85
16.00	DISCHG	516.10	515.42	514.80	514.30	513.97	513.77	513.63	513.46	513.21	504.97
18.00	DISCHG	484.01	460.35	437.91	417.60	399.40	383.11	368.41	354.99	342.57	330.92
20.00	DISCHG	319.95	309.69	300.26	291.67	283.79	276.47	269.67	263.42	257.67	252.26
22.00	DISCHG	247.01	241.88	237.01	232.53	228.44	224.64	221.11	217.81	214.69	211.56
24.00	DISCHG	208.19	204.31	199.56	193.84	187.39	180.28	172.44	163.42	152.68	140.03
26.00	DISCHG	125.68	110.27	94.67	79.74	66.10	54.13	43.98	35.57	28.71	23.18
28.00	DISCHG	18.74	15.16	12.29	9.96	8.08	6.55	5.31	4.30	3.47	2.81
30.00	DISCHG	2.26	1.82	1.46	1.16	.92	.74	.59	.46	.37	.29
32.00	DISCHG	.22	.16	.12	.08	.05	.03	.01	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 7.9533 CFS-HRS= 5184.12 ACRE-FT= 428.42

SUBROUTINE SAVMOV CROSS SECTION 105
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 3

SUBROUTINE DIVERT CROSS SECTION 105
INPUT HYDROGRAPH= 3 OUTPUT HYDROGRAPHS= 7,2

SUBROUTINE REACH CROSS SECTION 106
LENGTH= 2600.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= .64

SUBROUTINE RUNOFF CROSS SECTION 6
AREA= .98 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= 1.14

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.94	46.165	(RUNOFF)
21.84	8.920	(RUNOFF)
23.79	7.846	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.66
12.00	DISCHG	4.42	13.72	27.05	38.88	45.27	45.97	42.80	38.73	34.97	31.71
14.00	DISCHG	28.90	26.46	24.45	22.79	21.43	20.32	19.37	18.53	17.72	16.95
16.00	DISCHG	16.21	15.50	14.88	14.32	13.90	13.61	13.41	13.23	13.00	12.72
18.00	DISCHG	12.40	12.04	11.67	11.29	10.95	10.70	10.54	10.45	10.39	10.31
20.00	DISCHG	10.15	9.94	9.74	9.56	9.39	9.18	8.97	8.86	8.87	8.92
22.00	DISCHG	9.90	8.79	8.65	8.50	8.34	8.13	7.91	7.79	7.80	7.85
24.00	DISCHG	7.79	7.43	6.60	5.29	3.87	2.63	1.70	1.11	.73	.48
26.00	DISCHG	.31	.20	.13	.08	.05	.03	.02	.01	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .3185 CFS-HRS= 201.47 ACRE-FT= 16.65

SUBROUTINE ADDHYD CROSS SECTION 106
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.46	573.267	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .98

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01
10.00	DISCHG	.03	.11	.31	.74	1.55	2.93	5.11	8.39	13.13	20.72
12.00	DISCHG	37.42	76.99	153.89	272.45	412.38	519.07	563.19	572.75	570.15	564.56
14.00	DISCHG	558.91	553.85	549.67	546.22	543.43	541.13	539.19	537.50	535.93	534.42
16.00	DISCHG	532.96	531.53	530.23	529.08	528.19	527.58	527.18	526.84	526.41	523.55
18.00	DISCHG	512.32	492.12	469.18	446.96	426.64	408.41	392.10	377.42	364.01	351.55
20.00	DISCHG	339.81	328.72	318.39	308.89	300.19	292.15	284.67	277.84	271.66	265.97
22.00	DISCHG	260.53	255.17	249.95	245.01	240.42	236.14	232.15	228.53	225.25	222.14

24.00	DISCHG	218.88	215.03	210.14	203.93	196.73	188.96	180.83	172.18	162.45	151.16
26.00	DISCHG	139.15	123.66	108.32	92.94	78.27	64.92	53.21	43.27	35.02	28.29
28.00	DISCHG	22.84	18.47	14.95	12.11	9.82	7.96	6.45	5.23	4.23	3.42
30.00	DISCHG	2.76	2.23	1.78	1.43	1.14	.91	.72	.58	.46	.36
32.00	DISCHG	.28	.21	.16	.11	.08	.05	.03	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 8.5157 CFS-HRS= 5385.85 ACRE-FT= 445.09

SUBROUTINE SAVMOV CROSS SECTION 106
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 4

SUBROUTINE ADDHYD CROSS SECTION 116
INPUT HYDROGRAPHS= 1,2 OUTPUT HYDROGRAPH= 3

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.86	1773.168	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 10.45

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12.00	DISCHG	.00	.00	.00	217.51	512.03	853.32	1196.46	1487.99	1683.61	1767.74
14.00	DISCHG	1749.77	1647.50	1491.63	1310.45	1123.69	949.08	793.37	657.68	541.46	441.81
16.00	DISCHG	356.37	282.51	218.78	163.23	114.61	71.86	34.31	1.48	.00	

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .5836 CFS-HRS= 3936.05 ACRE-FT= 325.28

SUBROUTINE DIVERT CROSS SECTION 106
INPUT HYDROGRAPH= 4 OUTPUT HYDROGRAPHS= 7,1

SUBROUTINE REACH CROSS SECTION 107
LENGTH= 5400.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= 1.32

SUBROUTINE RUNOFF CROSS SECTION 7
AREA= .51 INPUT RUNOFF CURVE= 65.0 TIME OF CONCENTRATION= 1.41

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.89	77.166	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .51

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.04	.24	3.92
12.00	DISCHG	14.22	30.98	50.72	67.98	76.34	75.67	69.61	61.08	52.56	45.60

14.00	DISCHG	39.89	35.23	31.36	28.17	25.56	23.45	21.75	20.33	19.10	18.00
16.00	DISCHG	17.00	16.06	15.18	14.43	13.82	13.34	12.96	12.66	12.37	12.07
18.00	DISCHG	11.75	11.41	11.04	10.68	10.33	10.04	9.80	9.62	9.49	9.37
20.00	DISCHG	9.22	9.05	8.87	8.68	8.50	8.30	8.12	7.97	7.89	7.86
22.00	DISCHG	7.83	7.75	7.66	7.53	7.39	7.22	7.04	6.90	6.83	6.80
24.00	DISCHG	6.72	6.52	6.07	5.26	4.30	3.32	2.44	1.72	1.22	.88
26.00	DISCHG	.63	.44	.31	.22	.15	.11	.08	.05	.03	.02
28.00	DISCHG	.01	.01	.00							

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .7615 CFS-HRS= 250.66 ACRE-FT= 20.71

SUBROUTINE ADDHYD CROSS SECTION 107
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.47	452.729	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .51

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.01	.06	.18	.46	1.01	1.99	3.64	6.34	13.69
12.00	DISCHG	29.66	57.47	102.30	171.15	266.89	378.82	438.65	451.69	449.73	444.75
14.00	DISCHG	439.64	435.15	431.34	428.16	425.55	423.45	421.75	420.33	419.10	418.00
16.00	DISCHG	417.00	416.06	415.18	414.43	413.82	413.34	412.96	412.66	412.37	412.07
18.00	DISCHG	411.75	411.41	411.04	410.68	410.33	410.04	409.80	406.09	396.45	383.87
20.00	DISCHG	371.01	358.61	346.82	335.72	325.40	315.85	307.05	298.94	291.51	284.77
22.00	DISCHG	278.61	272.82	267.23	261.77	256.49	251.48	246.77	242.40	238.43	234.83
24.00	DISCHG	231.47	228.03	224.06	219.05	212.83	205.51	197.44	188.98	180.23	170.89
26.00	DISCHG	160.44	148.55	135.17	120.60	105.45	90.43	76.21	63.30	51.99	42.36
28.00	DISCHG	34.34	27.78	22.45	18.15	14.69	11.90	9.65	7.82	6.34	5.13
30.00	DISCHG	4.16	3.36	2.71	2.19	1.76	1.41	1.12	.89	.71	.57
32.00	DISCHG	.45	.35	.27	.21	.16	.11	.08	.05	.02	.00

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 14.7673 CFS-HRS= 4860.49 ACRE-FT= 401.67

SUBROUTINE SAVMOV CROSS SECTION 107
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 4

SUBROUTINE ADDHYD CROSS SECTION 117
INPUT HYDROGRAPHS= 1,3 OUTPUT HYDROGRAPH= 2

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.85	1936.068	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 11.43

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

12.00	DISCHG	.00	.00	.00	217.51	524.40	972.39	1359.65	1660.74	1853.76	1932.30
14.00	DISCHG	1908.68	1801.35	1641.29	1456.67	1267.12	1090.22	932.55	795.19	677.39	576.24
16.00	DISCHG	489.33	414.04	349.01	292.31	242.79	199.44	161.48	128.32	126.41	123.55
18.00	DISCHG	112.32	92.12	69.18	46.96	26.64	8.41	.00			

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .6391 CFS-HRS= 4714.33 ACRE-FT= 389.59

SUBROUTINE SAVMOV CROSS SECTION 117
INPUT HYDROGRAPH= 2 OUTPUT HYDROGRAPH= 1

SUBROUTINE DIVERT CROSS SECTION 107
INPUT HYDROGRAPH= 4 OUTPUT HYDROGRAPHS= 7,2

SUBROUTINE ADDHYD CROSS SECTION 127
INPUT HYDROGRAPHS= 1,2 OUTPUT HYDROGRAPH= 3

SUBROUTINE SAVMOV CROSS SECTION 127
INPUT HYDROGRAPH= 3 OUTPUT HYDROGRAPH= 1

SUBROUTINE REACH CROSS SECTION 108
LENGTH= 5200.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= 1.27

SUBROUTINE RUNOFF CROSS SECTION 8
AREA= .52 INPUT RUNOFF CURVE= 54.0 TIME OF CONCENTRATION= .60

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.45	33.586	(RUNOFF)
16.92	6.976	(RUNOFF)
19.50	5.490	(RUNOFF)
21.65	4.862	(RUNOFF)
23.65	4.277	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .52

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.22
12.00	DISCHG	7.09	25.17	33.25	30.55	26.22	21.74	18.60	16.29	14.66	13.38
14.00	DISCHG	12.20	11.45	10.77	10.30	9.91	9.54	9.25	8.86	8.53	8.16
16.00	DISCHG	7.75	7.46	7.20	7.02	6.97	6.87	6.93	6.77	6.61	6.41
18.00	DISCHG	6.19	5.99	5.74	5.54	5.47	5.45	5.45	5.47	5.47	5.34
20.00	DISCHG	5.13	5.01	4.86	4.83	4.77	4.55	4.43	4.67	4.85	4.79
22.00	DISCHG	4.60	4.48	4.43	4.39	4.23	3.99	3.93	4.10	4.27	4.21
24.00	DISCHG	3.99	3.41	2.15	1.02	.46	.20	.09	.04	.01	.00

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .3188 CFS-HRS= 106.99 ACRE-FT= 8.84

SUBROUTINE ADDHYD CROSS SECTION 108
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
14.09	411.368	(NULL)
16.92	406.976	(NULL)
19.50	405.707	(NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= .52

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.01	.04	.11	.30	.68	1.39	2.61	4.86
12.00	DISCHG	16.49	45.33	73.55	104.61	153.41	226.04	320.77	381.61	404.07	410.19
14.00	DISCHG	411.25	411.16	410.69	410.28	409.91	409.54	409.25	408.86	408.53	408.16
16.00	DISCHG	407.75	407.46	407.20	407.02	406.97	406.97	406.93	406.77	406.61	406.41
18.00	DISCHG	406.19	405.99	405.74	405.54	405.47	405.45	405.45	405.47	405.47	403.60
20.00	DISCHG	395.99	384.77	372.63	360.58	348.90	337.82	327.66	318.49	310.03	302.03
22.00	DISCHG	294.58	287.85	281.69	275.86	270.10	264.45	259.20	254.45	250.01	245.70
24.00	DISCHG	241.61	237.46	232.74	227.90	222.94	217.28	210.65	203.17	195.08	186.59
26.00	DISCHG	177.63	167.87	156.93	144.60	130.97	116.40	101.50	86.91	73.21	60.84
28.00	DISCHG	50.02	40.81	33.13	26.83	21.70	17.56	14.21	11.51	9.33	7.56
30.00	DISCHG	6.13	4.96	4.02	3.25	2.62	2.11	1.69	1.36	1.08	.86
32.00	DISCHG	.69	.55	.43	.34	.26	.20	.15	.11	.07	.04
34.00	DISCHG	.02	.00								

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 14.4020 CFS-HRS= 4833.20 ACRE-FT= 399.42

SUBROUTINE SAVMOV CROSS SECTION 118
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 2

ENDCMP

PASS= 6

EXECUTIVE CONTROL CARD 55 OPERATION COMPUT, FROM XSECTN/STRUCT 9/ 0 TO XSECTN/STRUCT 1/ 0
STARTING TIME= .00 RAIN DEPTH= 3.59 RAIN DURATION= 1.00 RAIN TABLE NO.= 2 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 3

SUBROUTINE RUNOFF CROSS SECTION 9
AREA= 1.54 INPUT RUNOFF CURVE= 56.0 TIME OF CONCENTRATION= 1.72

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.34	84.880	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 1.54

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.24	.86
12.00	DISCHG	6.65	16.89	31.17	50.55	66.41	78.87	84.08	84.73	82.14	75.73
14.00	DISCHG	69.75	64.13	59.15	54.72	50.71	47.31	44.38	41.74	39.48	37.47
16.00	DISCHG	35.59	33.84	32.27	30.83	29.51	28.47	27.54	26.72	26.02	25.36
18.00	DISCHG	24.74	24.10	23.43	22.75	22.07	21.46	20.91	20.48	20.13	19.82
20.00	DISCHG	19.54	19.23	18.90	18.55	18.19	17.82	17.46	17.17	16.94	16.79
22.00	DISCHG	16.67	16.54	16.38	16.17	15.93	15.64	15.31	15.04	14.81	14.69
24.00	DISCHG	14.48	14.17	13.44	12.30	10.86	9.08	7.36	5.73	4.37	3.33
26.00	DISCHG	2.48	1.88	1.44	1.08	.81	.62	.46	.34	.26	.19
28.00	DISCHG	.14	.10	.07	.05	.03	.02	.01	.00		

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .4118 CFS-HRS= 409.27 ACRE-FT= 33.82

SUBROUTINE REACH CROSS SECTION 110
LENGTH= 11300.00 INPUT COEFFICIENT= .7000 INPUT ROUTINGS= .00

AVERAGE WATER VELOCITY= 3.967 AVERAGE ROUTING COEFF= .7000 NUMBER OF ROUTINGS= 2.77

SUBROUTINE RUNOFF CROSS SECTION 10
AREA= 2.52 INPUT RUNOFF CURVE= 65.0 TIME OF CONCENTRATION= 1.26

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
12.80	431.285	(RUNOFF)
21.72	40.059	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 2.52

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	3.72	28.70
12.00	DISCHG	96.06	206.16	325.43	407.76	431.27	406.75	353.00	297.03	253.42	217.95
14.00	DISCHG	189.68	166.84	148.62	134.09	122.45	113.04	105.34	98.90	93.27	88.02
16.00	DISCHG	83.10	78.60	74.80	71.47	68.78	66.75	65.18	63.84	62.50	61.00
18.00	DISCHG	59.32	57.46	55.53	53.60	51.82	50.40	49.36	48.66	48.15	47.58
20.00	DISCHG	46.81	45.85	44.86	43.93	43.00	42.00	40.98	40.26	40.04	40.05

22.00	DISCHG	39.92	39.51	39.31	38.23	37.44	36.52	35.58	34.92	34.67	34.65
24.00	DISCHG	34.45	33.24	30.24	25.17	19.41	14.07	9.72	6.51	4.52	3.09
26.00	DISCHG	2.10	1.42	.96	.64	.43	.28	.18	.11	.06	.03
28.00	DISCHG	.01	.00								

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .7982 CFS-HRS= 1298.07 ACRE-FT= 107.27

SUBROUTINE ADDHYD CROSS SECTION 110
INPUT HYDROGRAPHS= 5,6 OUTPUT HYDROGRAPH= 7

PEAK TIMES 12.84 PEAK DISCHARGES 442.826 PEAK ELEVATIONS (NULL)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.06

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	3.72	28.70
12.00	DISCHG	96.08	206.32	326.39	411.89	442.06	428.18	388.80	348.16	318.31	292.65
14.00	DISCHG	269.68	248.00	227.35	208.45	191.68	177.13	164.61	153.76	144.23	135.56
16.00	DISCHG	127.63	120.52	114.40	108.99	104.40	100.64	97.49	94.72	92.12	89.54
18.00	DISCHG	86.92	84.24	81.57	78.96	76.52	74.45	72.74	71.37	70.22	69.06
20.00	DISCHG	67.77	66.38	65.02	63.76	62.52	61.20	59.85	58.78	58.20	57.85
22.00	DISCHG	57.40	56.72	55.70	55.05	54.11	53.03	51.92	51.04	50.54	50.24
24.00	DISCHG	49.76	48.30	45.09	39.82	33.78	27.94	22.79	18.53	15.01	11.99
26.00	DISCHG	9.39	7.23	5.48	4.11	3.07	2.29	1.70	1.26	.93	.68
28.00	DISCHG	.50	.37	.27	.20	.15	.11	.08	.06	.04	.02
30.00	DISCHG	.01	.00								

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .6516 CFS-HRS= 1707.29 ACRE-FT= 141.09

SUBROUTINE SAVMOV CROSS SECTION 110
INPUT HYDROGRAPH= 7 OUTPUT HYDROGRAPH= 3

SUBROUTINE RUNOFF CROSS SECTION 1
AREA= 6.79 INPUT RUNOFF CURVE= 79.0 TIME OF CONCENTRATION= 1.82

PEAK TIMES 13.05 PEAK DISCHARGES 2198.288 PEAK ELEVATIONS (RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 6.79

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.10	.33	1.00	2.46
10.00	DISCHG	4.51	8.44	13.83	20.57	31.03	44.04	60.65	91.50	156.08	300.41
12.00	DISCHG	580.45	934.63	1400.38	1790.36	2117.97	2194.52	2171.99	2042.10	1810.54	1576.63
14.00	DISCHG	1354.23	1179.81	1027.19	905.65	803.70	713.72	643.88	583.84	531.51	490.93
16.00	DISCHG	453.83	421.14	393.57	368.42	346.93	329.12	313.13	299.77	287.57	276.19
18.00	DISCHG	266.67	257.59	248.80	240.45	232.28	224.53	217.99	212.11	207.33	203.12
20.00	DISCHG	199.17	195.30	191.33	187.28	183.10	178.95	174.82	171.33	168.32	166.07

22.00	DISCHG	164.19	162.34	160.29	157.96	155.45	152.36	149.18	145.94	143.59	141.50
24.00	DISCHG	139.73	135.76	129.88	120.56	106.89	91.58	75.17	60.18	46.30	35.78
26.00	DISCHG	27.29	20.67	16.20	12.39	9.42	7.30	5.52	4.21	3.23	2.42
28.00	DISCHG	1.84	1.38	1.00	.75	.54	.37	.24	.14	.07	.03
30.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= 1.6327 CFS-HRS= 7154.71 ACRE-FT= 591.27

ENDCMP

SUMMARY TABLE 1

ALT	STORM	ID	DA SQ-MI.	RAIN TBLE	AMC	DELTA-T HRS.	TZERO HRS.	PRECIP IN.	PRECIP DURATION	PEAK-Q CFS	PEAK-TIME	PEAK-ELEV	RUNOFF IN.	CSM
1	1	2	4.12	2	2	.20	.00	2.09	24.00	467.83	13.13	.00	.62	113.55
1	1	3	4.35	2	2	.20	.00	2.09	24.00	285.58	13.77	.00	.50	65.65
1	1	103	8.47	2	2	.20	.00	2.09	24.00	736.75	13.53	.00	.56	86.98
1	1	4	.97	2	2	.20	.00	2.09	24.00	21.34	12.94	.00	.16	22.00
1	1	104	9.44	2	2	.20	.00	2.09	24.00	728.05	13.99	.00	.51	77.12
1	1	5	1.01	2	2	.20	.00	2.09	24.00	1.27	21.95	.00	.02	1.25
1	1	105	1.01	2	2	.20	.00	2.09	24.00	501.61	15.10	.00	4.43	496.64
1	1	6	.98	2	2	.20	.00	2.09	24.00	1.22	22.08	.00	.02	1.24
1	1	106	.98	2	2	.20	.00	2.09	24.00	500.99	15.12	.00	4.58	511.21
1	1	116	10.45	2	2	.20	.00	2.09	24.00	228.03	13.99	.00	.04	21.82
1	1	7	.51	2	2	.20	.00	2.09	24.00	9.88	13.25	.00	.16	19.37
1	1	107	.51	2	2	.20	.00	2.09	24.00	405.82	14.89	.00	8.38	795.73
1	1	117	11.43	2	2	.20	.00	2.09	24.00	312.39	14.09	.00	.06	27.33
1	1	8	.52	2	2	.20	.00	2.09	24.00	.67	21.69	.00	.02	1.28
1	1	108	.52	2	2	.20	.00	2.09	24.00	400.57	16.31	.00	8.20	770.32
1	1	9	1.54	2	2	.20	.00	2.13	24.00	3.63	17.88	.00	.04	2.36
1	1	10	2.52	2	2	.20	.00	2.13	24.00	57.60	13.09	.00	.17	22.86
1	1	110	4.06	2	2	.20	.00	2.13	24.00	57.60	13.09	.00	.12	14.19
1	1	1	6.79	2	2	.20	.00	2.13	24.00	728.92	13.18	.00	.60	107.35
1	2	2	4.12	2	2	.20	.00	2.66	24.00	799.72	13.07	.00	1.00	194.11
1	2	3	4.35	2	2	.20	.00	2.66	24.00	521.85	13.70	.00	.84	119.97
1	2	103	8.47	2	2	.20	.00	2.66	24.00	1297.34	13.47	.00	.92	153.17
1	2	4	.97	2	2	.20	.00	2.66	24.00	66.90	12.76	.00	.36	68.96
1	2	104	9.44	2	2	.20	.00	2.66	24.00	1288.15	13.92	.00	.86	136.46
1	2	5	1.01	2	2	.20	.00	2.66	24.00	8.08	13.55	.00	.10	8.00
1	2	105	1.01	2	2	.20	.00	2.66	24.00	507.63	14.08	.00	6.01	502.61
1	2	6	.98	2	2	.20	.00	2.66	24.00	7.59	13.80	.00	.10	7.75
1	2	106	.98	2	2	.20	.00	2.66	24.00	514.80	14.29	.00	6.29	525.30
1	2	116	10.45	2	2	.20	.00	2.66	24.00	788.13	13.92	.00	.21	75.42
1	2	7	.51	2	2	.20	.00	2.66	24.00	29.79	13.02	.00	.36	58.42
1	2	107	.51	2	2	.20	.00	2.66	24.00	415.61	14.25	.00	11.23	814.92
1	2	117	11.43	2	2	.20	.00	2.66	24.00	900.72	13.93	.00	.24	78.80
1	2	8	.52	2	2	.20	.00	2.66	24.00	4.46	13.10	.00	.10	8.58
1	2	108	.52	2	2	.20	.00	2.66	24.00	403.35	15.11	.00	11.00	775.67
1	2	9	1.54	2	2	.20	.00	2.72	24.00	20.20	13.82	.00	.15	13.11
1	2	10	2.52	2	2	.20	.00	2.72	24.00	172.97	12.90	.00	.38	68.64
1	2	110	4.06	2	2	.20	.00	2.72	24.00	174.11	12.92	.00	.29	42.88
1	2	1	6.79	2	2	.20	.00	2.72	24.00	1276.11	13.11	.00	.99	187.94
1	3	2	4.12	2	2	.20	.00	3.52	24.00	1369.27	13.01	.00	1.65	332.35
1	3	3	4.35	2	2	.20	.00	3.52	24.00	945.37	13.62	.00	1.44	217.33
1	3	103	8.47	2	2	.20	.00	3.52	24.00	2276.73	13.42	.00	1.54	268.80
1	3	4	.97	2	2	.20	.00	3.52	24.00	174.53	12.65	.00	.76	179.93
1	3	104	9.44	2	2	.20	.00	3.52	24.00	2273.19	13.86	.00	1.46	240.80
1	3	5	1.01	2	2	.20	.00	3.52	24.00	51.98	12.77	.00	.32	51.47
1	3	105	1.01	2	2	.20	.00	3.52	24.00	538.46	13.28	.00	7.95	533.13
1	3	6	.98	2	2	.20	.00	3.52	24.00	46.17	12.94	.00	.32	47.11
1	3	106	.98	2	2	.20	.00	3.52	24.00	573.27	13.46	.00	8.52	584.97
1	3	116	10.45	2	2	.20	.00	3.52	24.00	1773.17	13.86	.00	.58	169.68
1	3	7	.51	2	2	.20	.00	3.52	24.00	77.17	12.89	.00	.76	151.31
1	3	107	.51	2	2	.20	.00	3.52	24.00	452.73	13.47	.00	14.77	887.70
1	3	117	11.43	2	2	.20	.00	3.52	24.00	1936.07	13.85	.00	.64	169.38
1	3	8	.52	2	2	.20	.00	3.52	24.00	33.59	12.45	.00	.32	64.59
1	3	108	.52	2	2	.20	.00	3.52	24.00	411.37	14.09	.00	14.40	791.09

10-18

25-18

100-18

1	3	9	1.54	2	2	.20	.00	3.59	24.00	84.88	13.34	.00	.41	55.12
1	3	10	2.52	2	2	.20	.00	3.59	24.00	431.29	12.80	.00	.80	171.14
1	3	110	4.06	2	2	.20	.00	3.59	24.00	442.83	12.84	.00	.65	103.07
1	3	1	6.79	2	2	.20	.00	3.59	24.00	2198.29	13.05	.00	1.63	323.75

SUMMARY TABLE 3

	DISCHARGE,CFS									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
XSEC/STRUC NO. 1 ALTERNATE 1	728.92	1276.11	2198.29	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 2 ALTERNATE 1	467.83	799.72	1369.27	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 3 ALTERNATE 1	285.58	521.85	945.37	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 4 ALTERNATE 1	21.34	66.90	174.53	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 5 ALTERNATE 1	1.27	8.08	51.98	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 6 ALTERNATE 1	1.22	7.59	46.17	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 7 ALTERNATE 1	9.88	29.79	77.17	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 8 ALTERNATE 1	.67	4.46	33.59	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 9 ALTERNATE 1	3.63	20.20	84.88	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO. 10 ALTERNATE 1	57.60	172.97	431.29	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.103 ALTERNATE 1	736.75	1297.34	2276.73	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.104 ALTERNATE 1	728.05	1288.15	2273.19	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.105 ALTERNATE 1	501.61	507.63	538.46	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.106 ALTERNATE 1	500.99	514.80	573.27	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.107 ALTERNATE 1	405.82	415.61	452.73	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.108 ALTERNATE 1	400.57	403.35	411.37	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.110 ALTERNATE 1	57.60	174.11	442.83	.00	.00	.00	.00	.00	.00	.00

XSEC/STRUC NO.116											
ALTERNATE	1	223.03	788.13	1773.17	.00	.00	.00	.00	.00	.00	.00
XSEC/STRUC NO.117											
ALTERNATE	1	312.39	900.72	1936.07	.00	.00	.00	.00	.00	.00	.00

ENDJOB CARD ENCOUNTERED. END OF JOB.

```
END OF  1 JOBS IN THIS RUN

@END
@END IGNORED - IN CONTROL MODE

@FIN
```

```
  RUNID: SCS04M   ACCT: 1604000101     PROJECT: SCS04

***** DISPLAYED LOG ENTRY SECTION *****
  13:20:37        SCS04M FIN

***** RESOURCE UTILIZATION SECTION *****
    RESOURCE                                                AVG
      TIME          CPU           IO           CCER       SIZE   QUALIFIER      FILENAME       PROGRAM      VERSION
  ------------ ------------ ------------ ------------ ----  ------------ ------------ ------------ ------------
  00:00:43.117 00:00:04.829 00:00:10.261 00:00:07.352  59K  SCS76         ABS           TR20         CONVEX
  00:00:00.617 00:00:00.000 00:00:00.351 00:00:05.509   3K  RESOURCES USED IN CONTROL MODE
  ============ ============ ============ ============ ====
  00:00:43.734 00:00:04.829 00:00:10.612 00:00:12.862  47K  SUMMARY

  IMAGES  READ:   66        PAGES:  48

  START:    13:20:21 FEB 10,1984    FIN:  13:20:37 FEB 10,1984

***** COST SECTION *****

  CHARGES BASED ON  BATCH  RUN  AT L PRIORITY
  RT  ($000.68/MIN)   :$000000.49
  CPU ($001.44/MIN)   :$000000.11
  IO  ($000.75/MIN)   :$000000.13
  CCER($001.44/MIN)   :$000000.30
                       ----------

  ESTIMATED TOTAL COST:$000001.03
                       ==========
```

* * * * * * UNIVAC 1100 TIME/SHARING EXEC --- MULTI-PROCESSOR SYSTEM --- LEV. SB-38R5A-1K SITE * FCCC-B * * * * * *

PASS= 3

EXECUTIVE CONTROL CARD 49 OPERATION COMPUT, FROM XSECTN/STRUCT 2/ 0 TO XSECTN/STRUCT 118/ 0
STARTING TIME= .00 RAIN DEPTH= 2.66 RAIN DURATION= 1.00 RAIN TABLE NO.= 2 SOIL CONDITION= 2
ALTERNATE NO.= 1 STORM NO.= 2

SUBROUTINE RUNOFF CROSS SECTION 2
AREA= 4.12 INPUT RUNOFF CURVE= 80.0 TIME OF CONCENTRATION= 1.78

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.07	799.722	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.12

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.03	.12	.49	1.42	2.89	6.36	15.11	29.31	90.44
12.00	DISCHG	187.53	320.98	495.84	646.52	765.62	797.30	792.14	742.05	659.35	575.02
14.00	DISCHG	497.01	435.24	381.24	337.33	301.22	269.44	243.78	222.67	204.17	189.04
16.00	DISCHG	175.77	163.73	153.45	144.35	136.15	129.59	123.75	118.49	114.06	110.04
18.00	DISCHG	106.43	103.09	99.76	96.44	93.21	90.20	87.49	85.36	83.47	81.86
20.00	DISCHG	80.38	78.88	77.29	75.65	73.99	72.30	70.68	69.18	68.04	67.19
22.00	DISCHG	66.47	65.77	64.99	64.14	63.07	61.86	60.55	59.38	58.42	57.66
24.00	DISCHG	56.75	55.15	52.79	48.31	42.93	36.44	29.84	23.65	18.18	14.01
26.00	DISCHG	10.54	8.05	6.22	4.70	3.58	2.74	2.06	1.57	1.19	.88
28.00	DISCHG	.67	.49	.36	.26	.18	.12	.07	.04	.02	.01
30.00	DISCHG	.00									

TOTAL WATER, IN INCHES ON DRAINAGE AREA= .9989 CFS-HRS= 2656.01 ACRE-FT= 219.49

SUBROUTINE REACH CROSS SECTION 103
LENGTH= 8100.00 INPUT COEFFICIENT= .8000 INPUT ROUTINGS= .00

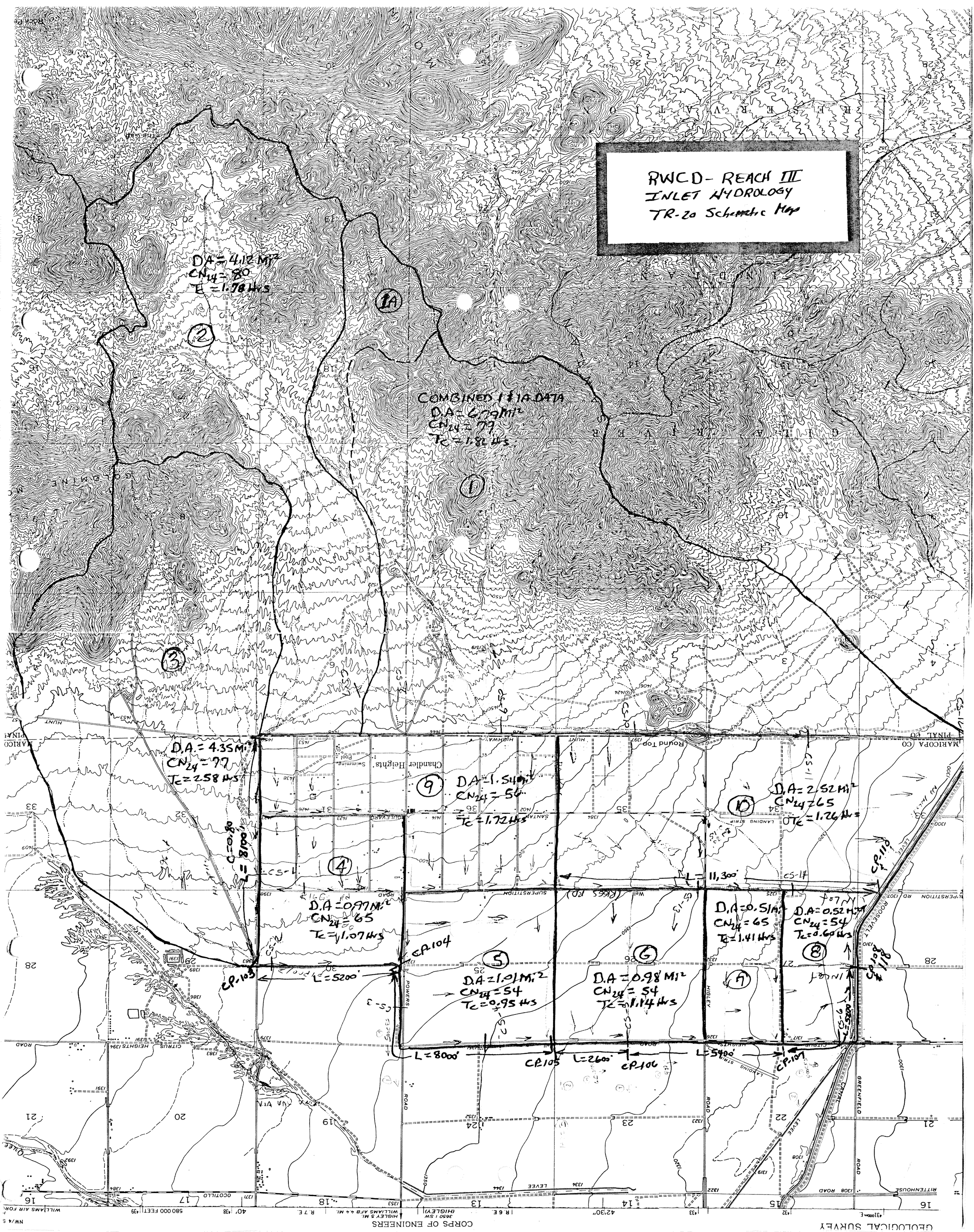
AVERAGE WATER VELOCITY= 6.800 AVERAGE ROUTING COEFF= .8000 NUMBER OF ROUTINGS= 1.32

SUBROUTINE RUNOFF CROSS SECTION 3
AREA= 4.35 INPUT RUNOFF CURVE= 77.0 TIME OF CONCENTRATION= 2.58

PEAK TIMES	PEAK DISCHARGES	PEAK ELEVATIONS
13.70	521.849	(RUNOFF)

HYDROGRAPH, TZERO= .00 DELTA T= .20 DRAINAGE AREA= 4.35

TIME											
.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8.00	DISCHG	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10.00	DISCHG	.00	.00	.00	.00	.04	.09	.57	1.22	12.61	34.60
12.00	DISCHG	67.05	124.90	184.92	269.95	354.98	416.96	475.46	505.23	520.02	519.91
14.00	DISCHG	501.25	477.88	439.08	400.39	366.73	333.07	306.46	281.50	259.76	240.17
16.00	DISCHG	222.24	206.91	192.14	179.96	167.79	158.37	149.04	141.41	134.34	128.09
18.00	DISCHG	122.54	117.31	112.76	108.29	104.40	100.51	97.13	93.81	90.84	88.02
20.00	DISCHG	85.39	82.95	80.54	78.68	76.73	75.04	73.34	71.81	70.31	68.99


RWCD- REACH III
INLET HYDROLOGY
TR-20 Schematic Map
D.A = 4.12 MI²
CN24 = 80
Tc = 1.78 Hrs
COMBINED 1 & 1A DATA
D.A = 6.09 MI²
CN24 = 79
Tc = 1.81 Hrs
D.A. = 4.35 MI²
CN24 = 77
Tc = 2.58 Hrs
D.A = 1.54 MI²
CN24 = 50
Tc = 1.72 Hrs
D.A = 2.52 MI²
CN24 = 65
Tc = 1.26 Hrs
D.A = 0.97 MI²
CN24 = 65
Tc = 1.07 Hrs
D.A = 0.51 MI²
CN24 = 65
Tc = 1.41 Hrs
D.A = 0.52 MI²
CN24 = 54
Tc = 0.60 Hrs
D.A = 1.01 MI²
CN24 = 54
Tc = 0.95 Hrs
D.A = 0.98 MI²
CN24 = 54
Tc = 1.14 Hrs
L = 11,300'
L = 5200'
L = 8000'
L = 2600'
L = 5400'
CP-103
CP-104
CP-105
CP-106
CP-107
CP-108
CP-110
CS-14
CS-13
CS-3
CS-4
CS-9
CS-11
CS-12
CS-2
CS-1
MARICOPA CO
PINAL CO
POWERS ROAD
HIGLEY ROAD
GREENFIELD ROAD
ROOSEVELT
SUPERSTITION RD
LANDING STRIP
CENTRAL
LEVEE
Chandler Heights
Round Top
GEOLOGICAL SURVEY
CORPS OF ENGINEERS

NOECON

(DES, 120. RCH3)

(DES/TR 20. RCH3)

TR - 20

JOB & TITLE

SCS-ENG.-264 DRAFT
REV. May 1982

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Watershed RWCD (R-3) Hydrologist Hem Date 2/9/84 SHEET _____ OF _____

1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0	1 2 3 4 5 6 7 8 9 0
	HOLDOUT	ECON.	FULLPRINT	PASS=XXX	SUMMARY	NOPLOTS	Routings (1)
JOB TR-20			FULLPRINT		SUMMARY		
TITLE	RWCD-REACH III, INLET HYDROLOGY, Feb 10, 1984						
~~TITLE~~							

JOB Record (required)

Columns 1-3 JOB

Columns 5-9 TR-20

Columns 11-17 HOLDOUT
Use only if a holdout hydrograph is desired.

Columns 21-24 ECON

Use only if peak discharge output for ECON2/URB1 is desired. Locations for this output must be selected for inclusion in Summary Tables 1 and 3 also. Such designation can be made using summary option explained below (columns 51-57) or on Standard Control (column 71).

Columns 31-39 FULLPRINT — Get all peak & vol output w/o showing on Standard Control, but not hydrographs
Use only if FULLPRINT option is desired.

Columns 41-48 PASS=XXX Right justified.
Use only if PASS number, XXX, is greater than 1. XXX is an integer, right justified.

Columns 51-57 SUMMARY
Use only if Summary Tables 1 and 3 are to include all Standard Control operations (except SAVMOV).
Replaces [illegible] in Standard Control

Columns 61-67 NOPLOTS
Use if no cross section rating plots are desired. Blank = End Area plots

ENDPLOT
Use if only cross section rating plots are desired with no routings.

Columns 73-80 Optional user information, printed at top of input listing.

TITLE Records (one required, second is optional)

Columns 1-5 TITLE

Columns 7-9 XXX (first TITLE record only).
An optional user file number, XXX, is an integer, right justified.

Columns 11-80 Both titles may be any characters desired.

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed RWCD-R-3 Hydrologist Hm Date 2/9/84

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	LACH	3			7		5										
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	002				6	4.12	80.	1.78	1	1		1		1	3
6	ADDHYD	4			5	6	7										
5	SAVMOV	5															
5	SAVMOV	5															
	ADDHYD	4			5	6	7										
	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

STANDARD CON[illegible]L FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed RWCD - R-3 Hydrologist Hem Date 2/9/84

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T = 0, FT.									
6	RESVOR	2			4		7										
					6			LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	103		7		5	8100.	0.80								4
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	003				6	4.35	77.	2.58	1	1		1		1	5
6	ADDHYD	4	103		5	6	7				1	1		1		1	6
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed RWCD (R-3) Hydrologist Hzm Date 2/5/84

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	104		7		5	5200.	0.65								7
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	004				6	0.97	65.	1.07	1	1		1		1	8
6	ADDHYD	4	104		5	6	7				1	1		1		1	9
6	SAVMOV	5	104		7		2										10
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6	104		2	7	1	500.									11
6	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

142

STANDARD CO[illegible]L FOR WATERSHED

___of ___

SCS - 273
Rev. 2 - 68

Watershed RWCD (R-3) Hydrologist Hem Date 2/9/84

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	105		7		5	8000.	0.76								12
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	005				6	1.01	54.	0.95	1	1		1		1	13
6	ADDHYD	4	105		5	6	7				1	1		1		1	14
6	SAVMOV	5	105		7		3										15
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6	105		3	7	2	650.									16
6	ENDATA							NOTE: This card to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 28, 1963

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed RWCD (R-3) Hydrologist Hem Date 2/9/84

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	106		7		5	2600.	0.70								17
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	006				6	0.98	54.	1.14	1	1		1		1	18
6	ADDHYD	4	106		5	6	7				1	1		1		1	19
6	SAVMOV	5	106		7		4										20
6	SAVMOV	5															
			116		1	2	3										
6	ADDHYD	4	~~106~~		X	X	X				1	1		1		1	21
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6	106		4	7	1	400.									22
	END DATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed RWCD (R-3) Hydrologist Hem Date 2/9/84

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	107		7		5	5400.	0.70								23
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	007				6	0.51	65.	1.41	1	1		1		1	24
6	ADDHYD	4	107		5	6	7				1	1		1		1	25
6	SAVMOV	5	107		7		4										26
6	SAVMOV	5															
6	ADDHYD	4	~~107~~ 117		~~5~~ 1	~~6~~ 3	7 2				1	1		1		1	27
6	SAVMOV	5	~~107~~ 117		2		1										28
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6	107		4	7	2	400.									29
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

6 ADDHYD (4) ~~107~~ 127 1 2 3
6 SAVMOV (5) ~~107~~ 127 3 1

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

30
31

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed RWCD (R-3) Hydrologist Hem Date 2/9/84

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	108		7		5	5200.	0.70								32
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	008				6	0.52	54.	0.60	1	1		1		1	33
6	ADDHYD	4	168		5	6	7				1	1		1		1	34
6	SAVMOV	5	113		7		2										.35
6	SAVMOV	5															
6	ADDHYD	4															
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed RWCD (R-3) Hydrologist Hem Date 2/9/84

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3			7		5										
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	009				6	1.54	56.	1.72	1	1		1		1	5C
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed RWCD (R-3) Hydrologist Hem Date 2/9/84

DATA CODE	SUBROUTINE (OPERATION) NAME	NO.	X SECTION/ STRUCTURE XSECT NO.	STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	INPUT #2	OUT-PUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	HYD	ELEV	VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
	IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.	Put "1" in space						
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
					6			LENGTH. FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3	110		X		5	11300.	0.70								37
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	010				6	2.52	65.	1.26	1	1		1		1	38
6	ADDHYD	4	110		5	6	7				1	1		1		1	39
6	SAVMOV	5	110		7		3										40
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT1	OUT-PUT2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6															
	ENDATA							NOTE: This card is to be used only at end of all standard control cards.									

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

STANDARD CONTROL FOR WATERSHED

Page ____ of ____

SCS - 273
Rev. 2 - 68

Watershed: RWCD (R-3) Hydrologist: Hem Date: 2/5/84

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields. Put "1" in space

DATA CODE	SUBROUTINE (OPERATION) NAME	SUBROUTINE (OPERATION) NO.	X SECTION/ STRUCTURE XSECT NO.	X SECTION/ STRUCTURE STRUCT. NO.	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO./ IDENTIFICATION
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1					6										
								SURF. ELEV. AT T=0, FT.									
6	RESVOR	2			6		7										
								LENGTH, FT.	(OPTIONAL) ROUTING COEFFICIENT (C)								
6	REACH	3			7		5										
								AREA, SQ. MI.	RUNOFF CURVE NO.	TIME OF CONCENTRATION, HRS.							
6	RUNOFF	1	001				6	6.79	79.	1.82	1	1		1		1	1
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
6	SAVMOV	5															
6	ADDHYD	4			5	6	7										
6	SAVMOV	5															
					IN-PUT	OUT-PUT 1	OUT-PUT 2	OUTPUT 1 DISCHARGE, CFS									
6	DIVERT	6															

ENDATA — NOTE: This card is to be used only at end of all standard control cards.

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, SEPT. 30, 1963

MODIFY STANDARD CONTROL

:S - 275
:v. 2 - 68

Watershed _____ Hydrologist _____ Date _____

DATA CODE	OPERATION NAME	OPERATION NO	XSECTN STRUCTURE XSECTN NO	XSECTN STRUCTURE STRUCT NO	HYDROGRAPH NUMBER INPUT #1	HYDROGRAPH NUMBER INPUT #2	HYDROGRAPH NUMBER OUTPUT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	OUTPUT OPTIONS PRINT PEAK	PRINT HYD	PRINT ELEV	PRINT VOL	PUNCH	SUM	CARD NO. / IDENTIFICATION

IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.

IMPORTANT: Modifications must be given in the order that they appear on the standard control list.

7	INSERT	2						NOTE: The following cards are inserted following the XSECTN STRUCTURE specified									
6																	
6																	
6																	
6																	
7	ALTER	3						NOTE: Data given in columns 1 to 18 must be identical with standard control card to be altered									
6																	
6																	
6																	
6																	
7	DELETE	4						NOTE: Data given in columns 1 to 18 must be identical with standard control card to be deleted									
6																	
6																	
6																	
6																	
7	LIST							NOTE: This card is used for printout of tabular data and standard control list that are currently effective									43
7	UPDATE	1						NOTE: This card is used to make permanent changes in the library tape. Printout of library tape follows changes									
7	BASFLOWS	5						NEW BASE FLOW, CFS	NOTE: This card normally precedes a COMPUT card								

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, JAN 20, 1964

EXECUTIVE CO[illegible] FOR WATERSHED

SCS - 274
Rev. 2-68

Watershed RWCD (R-3) Hydrologist Ham Date 2/9/84

DATA CODE	OPERATION NAME	OPERATION NO.	FROM XSECTN OR STRUCT	THRU (1) XSECTN OR STRUCT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	RAIN TABLE NO	AMC	ALTERNATE NO.	STORM NO.	CARD NO./ IDENTIFICATION
					IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							
					MAIN TIME INCREMENT, HRS.	(This increment is required for initial computations. Remains in force until new increment is entered or permanent data changed.)						
7	INCREM	6			0.20							44
					STARTING TIME, HRS.	10-YR RAINFALL DEPTH, INCHES (Set depth and duration to 1.0 for actual rainfall)	RAINFALL DURATION, HRS.					
7	COMPUT	7	002	118	0.0	2.09	1.0	2	2	01	01	45
	ENDCMP	1			NOTE. This card is required at "end" of a watershed, it may follow a series of COMPUT cards.							46
					10-YR (Cont.)							
7	COMPUT	7	009	001	0.0	2.13	1.0	2	2	01	01	47
	ENDCMP	1			NOTE. This card is required at "end" of a watershed, it may follow a series of COMPUT cards.							48X
					25-YR							
7	COMPUT	7	002	118	0.0	2.66	1.0	2	2	01	02	49
	ENDCMP	1			NOTE. This card is required at "end" of a watershed, it may follow a series of COMPUT cards.							50
					25-YR (Cont.)							
7	COMPUT	7	009	001	0.0	2.72	1.0	2	2	01	02	51
	ENDCMP	1			NOTE. This card is required at "end" of a watershed, it may follow a series of COMPUT cards.							52
	ENDJOB	2			NOTE. This card terminates the entire watershed program.							

(1) Starting from the beginning or from the end of the preceding COMPUT card, the program will start with the 1st operation on the standard control list following the XSECTN / STRUCT under FROM and will perform all operations through the 1st appearance of the XSECTN / STRUCT under THRU. Two or more COMPUT cards in series will normally cover successive parts of the standard control list.

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, JAN 20, 1964

EXECUTIVE CO[illegible] FOR WATERSHED

SCS - 274
Rev. 2-68

Watershed RWCD (R-3) Hydrologist Hum Date 2/9/84

DATA CODE	OPERATION NAME	OPERATION NO.	FROM XSECTN OR STRUCT	THRU (1) XSECTN OR STRUCT	DATA FIELD #1	DATA FIELD #2	DATA FIELD #3	RAIN TABLE NO	AMC	ALTERNATE NO.	STORM NO.	CARD NO./ IDENTIFICATION
					IMPORTANT: Line out unused cards. Data fields require decimal points. KEYPUNCHER: Left justify data fields.							
					MAIN TIME INCREMENT, HRS.	(This increment is required for initial computations. Remains in force until new increment is entered or permanent data changed.)						
7	INCREM	6										
					STARTING TIME, HRS.	100-YR RAINFALL DEPTH, INCHES (Set depth and duration to 1.0 for actual rainfall)	RAINFALL DURATION, HRS.					
7	COMPUT	7	002	118	0.0	3.52	1.0	2	2	01	03	53
	ENDCMP	1			NOTE. This card is required at "end" of a watershed, it may follow a series of COMPUT cards.							54
						100-YR (Cont.)						
7	COMPUT	7	009	001	0.0	3.59	1.0	2	2	01	03	55
	ENDCMP	1			NOTE. This card is required at "end" of a watershed, it may follow a series of COMPUT cards.							56
7	COMPUT	7										
	ENDCMP	1			NOTE. This card is required at "end" of a watershed, it may follow a series of COMPUT cards.							
7	COMPUT	7										
	ENDCMP	1			NOTE. This card is required at "end" of a watershed, it may follow a series of COMPUT cards.							
	ENDJOB	2			NOTE: This card terminates the entire watershed program							57

(1) Starting from the beginning or from the end of the preceding COMPUT card, the program will start with the 1st operation on the standard control list having the XSECTN / STRUCT under FROM and will perform all operations through the 1st appearance of the XSECTN / STRUCT under THRU. Two or more COMPUT cards in series will normally cover successive parts of the standard control list.

WATERSHED PROGRAM, SOIL CONSERVATION SERVICE, JAN 20, 1964

with Buckhorn-Mesa and Queen Creek Dams Constructed for all except ALT 6.

ARIZONA
R. W. Burges Sept. 16, 74

Summary of Alternates

RWCD Design

Location	1973 Analysis Assuming year 2020 Land Use (Solid Urban above) (Guadalupe) X Sec No	100yr Peak	1974 Analysis X-Section number for Alt 1 to 4	ALT 1 1975 Land Use with MAG Projections 100yr Peak	ALT 2 2000 Land Use MAG Projections with ½ inch urban Storage 100yr Peak	ALT 3 2000 Land Use MAG Projections with 1" of urban storage 100yr Peak	ALT 4 2000 Land Use MAG Projections with No Storage 100yr Peak	X-Section number for Alt 5+6	ALT 5 2000 Land Use MAG Projections with 1 inch of Storage + 2 dams along RWCD 100yr. Peak	ALT 6 2000 Land Use MAG Projections without one inch of Storage without Buckhorn Mesa Dams Constructed No dams along RWCD 100yr Peak
RWCD @ Brown Road	3	2210	3	550	1380	1160	1620	1	1160	1170
RWCD @ Apache Trail	10	2920	10	1290	2340	1965	2675	4	1965	2020 (MAG Low)
RWCD @ Broadway	14	3035	14	1720	2690	2290	3070	7	2290	2420 (MAG Low)
RWCD @ Southern	35	4980	35	2430	3955	3440	4490	16	3440	3685
RWCD @ Superstition	82	10950	82	3090	5470	4720	6240	34	4720	6350
RWCD @ Baseline	86	10020	86	3110	5450	4700	6260	37	4700	6370
RWCD @ GUADALUPE	124	13125	124	3420	5620	4860	6420	56	4860	7140
RWCD @ Elliot	145	16370	145	3710	5850	5110	6645	68	5110	7630
	155	15480	155	3940	6010	5285	6800	75	5285	7950
RWCD above Powerline (Pay Rd)	186	18600	186	4830	6605	5890	7350	100	5890	8840
Below DAM	B 01								4795	
RWCD Below Powerline Channel	038	23800	338	6180	7175	6470	7910	129	6140	9790
RWCD @ So. Pacific RR	056	23800	356	6400	7570	6880	8300	145	6350	Rest of Run did Not Work
RWCD at GERMANN	064	23800	364	6425	7500	6820	8210	152	6385	
RWCD above Queen Creek	67	23800	367	6425	7380	6730	8060	155	6390	
Queen Creek before Junctn	166		466	1910	1910	1910	1910	181	1910	inflow above Sec. 4 lost about 600 cfs due to error in input data so all values between 4 and 16 could be about 600 low.
RWCD Below Queen Creek Junctn	167	25600	467	7925	8705	8070	9370	182	7900	
RWCD At Reservation	170	25600	470	8270	9270	8610	9940	185	7560	
RWCD at Placeit turns West on Reservation	173	25600	473	8350	9300	8690	9930	190	7600	
						Use for Design this Land Use + Storage			Possible ALT for Design	RMO Sept 16, 74

Note 2nd DAM Built just up stream

ARIZONA	RWCD			
R.M. Davis Sept. 5, 74				

Summary of Alternates

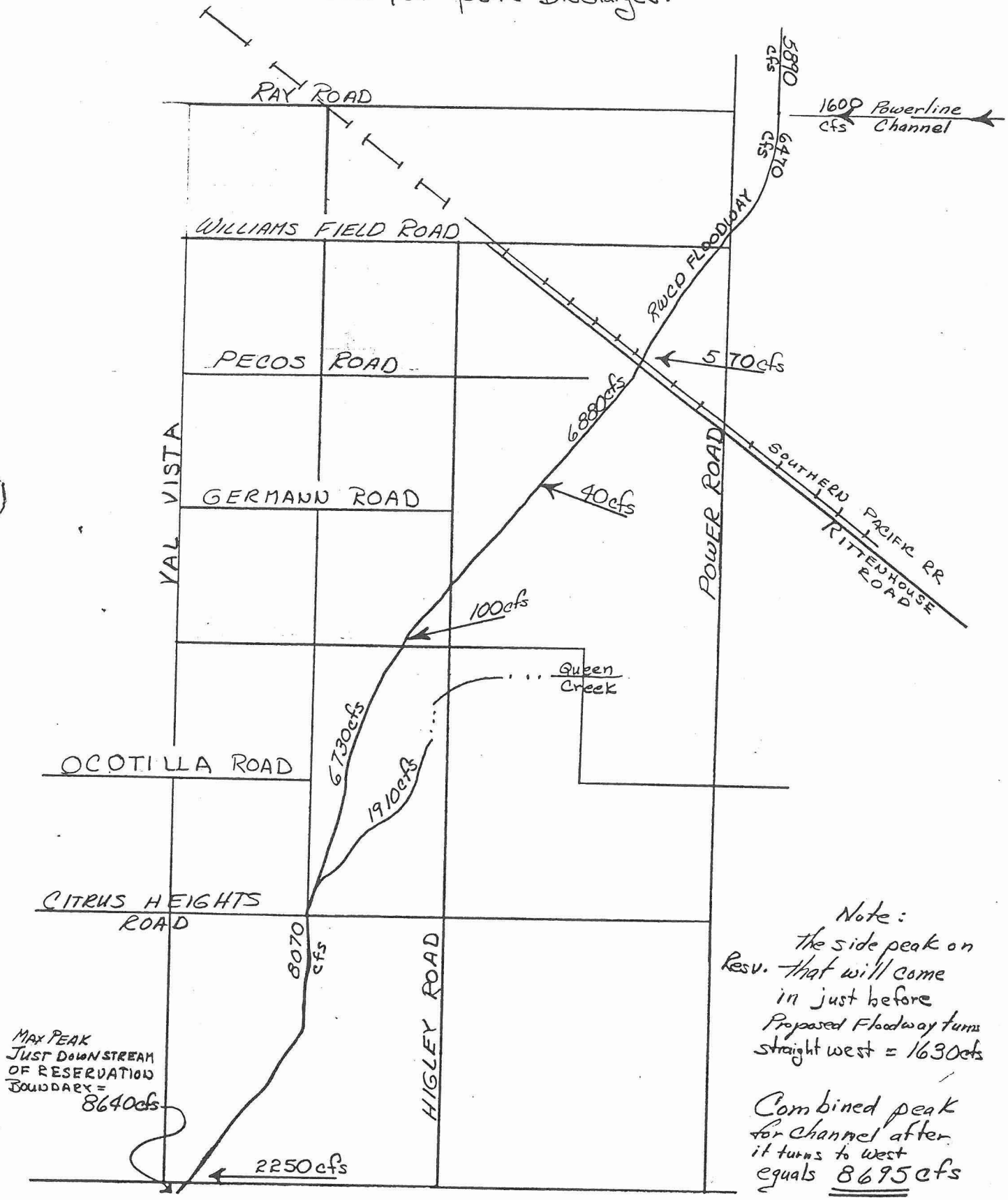
	① 1975 Land Use with 8M Constructed And L.Q. Creek Constructed	② 2000 Land Use With ½ inch DAMS Constructed	③ 2000 Land Use with 1 inch DAMS Constructed	④ 2000 Land Use No on site Storage DAMS Constructed	⑤ 2000 Land Use ~~[illegible]~~ inch of on site Storage with 2 dams along RWCD + BM + LQ Built	⑥ 2000 Land Use with no Dams built on B. Mesa.
	(100 Year Storm)					
RWCD @ Brown Road 3	550	1380	1160	1620	1160	
RWCD @ Apache Trail 10	1290	2340	1965	2675	1965	
RWCD @ Broadway 14	1720	2690	2290	3070	2290	
RWCD @ Southern 35	2430	3955	3440	4490	3440	
RWCD @ Superstition 82	3090	5470	4720	6240	4720	
RWCD @ Baseline 86	3110	5450	4700	6260	4700	
RWCD @ Guadalupe 124	3420	5620	4860	6420	4860	
RWCD @ Elliot Rd 145	3710	5850	5110	6645	5110	
155	3940	6010	5285	6800	5285	
RWCD above Powerline 186	4830	6605	5890	7350	5890 (4795 below dam)	
RWCD Below Powerline 338	6180	7175	6470	7910	6140	
RWCD @ Southern Pacific 356	6400	7570	6880	8300	6350	
364	6425	7500	6820	8210	6385	
RWCD above Queen Creek 367	6425	7380	6730	8060	6390	
466	1910	1910	1910	1910	1910	
RWCD below Queen Creek 467	7925	8705	8070	9370	7900	
RWCD @ Reservation 470	8270	9270	8640	9940	7560	
RWCD where it turns to West on Reservation 473	8350	9300	8690	9930	7600	

ARIZONA RWCD

RM BARTELS Sept 11, 74

Summary of Alternate 3 2 2

100 year peak Discharges.



Note: the side peak on Resv. that will come in just before Proposed Floodway turns straight west = 1630 cfs

Combined peak for channel after it turns to west equals 8695 cfs

QUESTIONS NEEDING FIELD EXAMINATION:

① Is Sossaman Road a sufficient barrier that upslope runoff is diverted into Sonogui Wash as the Work Plan hydrology sub area indicates?

② Do curve numbers need to be reduced for surface storage not accounted for in the basic curve numbers? Due to irrigation basin or level border systems, dikes along tailend of fields, etc.

④ Do the irrigation systems include a significant amount of border or basin irrigation; especially in the orchards that would retain surface runoff?

⑤ Where does excess runoff from the fields go? Would the larger floods collect into the roads and eventually collect in the drainage ditches?

⑥ What are the capacity limitations of the drainage ditches that have been installed? Especially along Chandler Heights Road, Hunt Road (extended above the RWCD Floodway), CITRUS etc? When these ditches are exceeded where does the flow go?

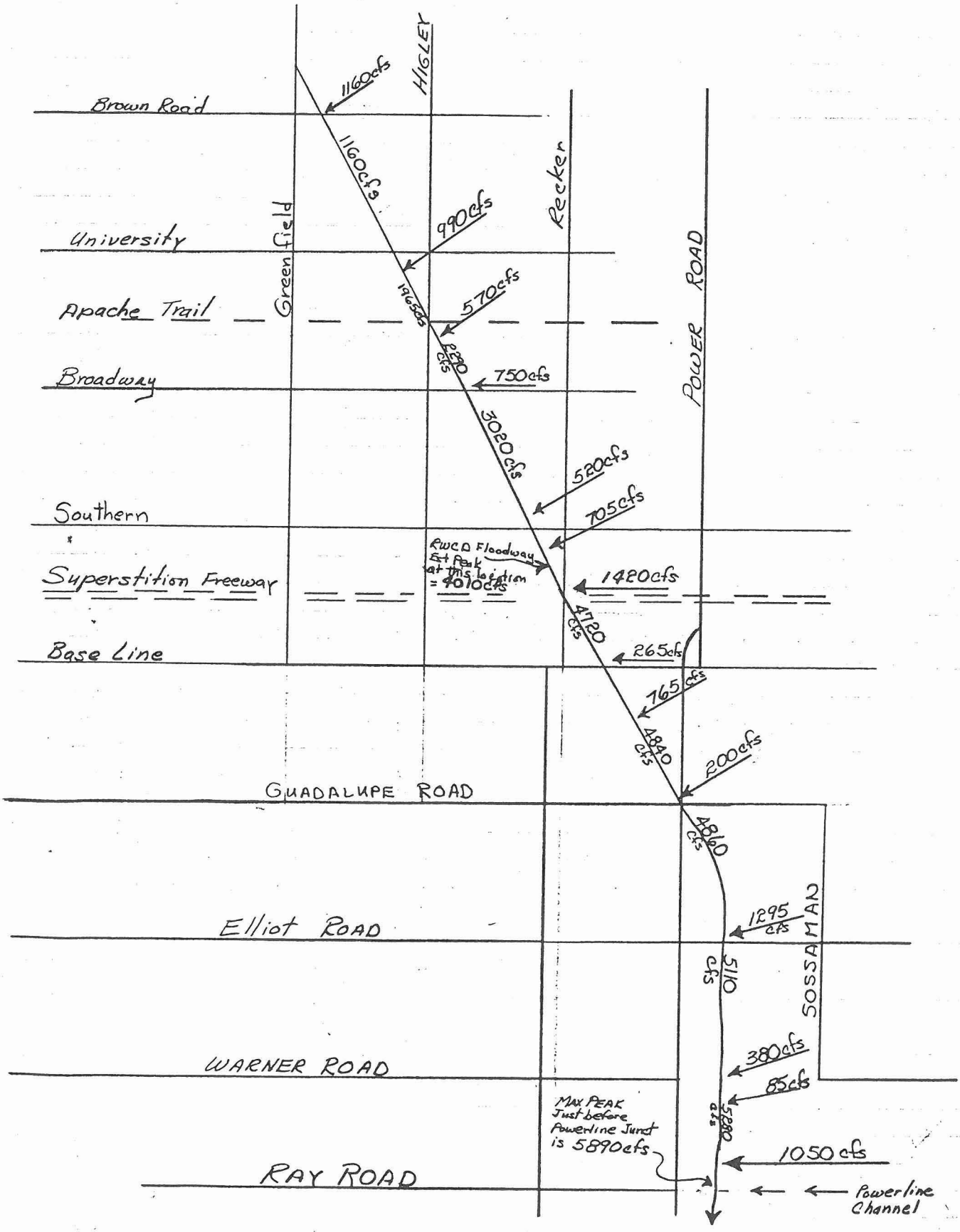
⑦ Where are the present inlet locations along the RWCD Floodway?

⑧ Does the present design adequately provide to bring Sonogui Wash into the floodway above Chandler Heights Road?

ARIZONA RWCD

R.M. BARTELS Sept 10, 74

Summary of Design Peaks (ALT 3)

100 year Storm

1 2