99GH DEL 1189

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

OUTER LOOP HIGHWAY

MANAGEMENT CONSULTANT SERVICES

DRAINAGE REPORT
SCATTER WASH HYDROLOGY AND OUTER LOOP HIGHWAY INTERCEPTOR DRAIN

39TH AVENUE TO 7TH STREET

NOVEMBER, 1989

DeLEUW CATHER

Management Consultant for
Arizona Department of Transportation

DRAINAGE REPORT
SCATTER WASH HYDROLOGY AND OUTER LOOP HIGHWAY INTERCEPTOR DRAIN

39TH AVENUE TO 7TH STREET

NOVEMBER, 1989

Submitted by: _____
THOMAS A. ENGEL, P.E.

Registered Professional Engineer (Civil)
CERTIFICATE NO. 16975
THOMAS A. ENGEL
Date Signed 11-10-89
ARIZONA, U.S.A.

DRAINAGE REPORT
SCATTER WASH HYDROLOGY AND
OUTER LOOP HIGHWAY INTERCEPTOR DRAIN

TABLE OF CONTENTS

Introduction	1
Existing Drainage Conditions	1
Outer Loop Drainage Modifications	3
Conclusions and Recommendations	5

Figures 1 and 2

Appendicies

A. Pre-Project Conditions (Scatter Wash)
B. Outer Loop Improvements (Scatter Wash)
C. Interceptor Drain (w/o Detention Basin C)
D. Interceptor Drain Concept Design

INTRODUCTION

The Outer Loop Highway follows the alignment of Beardsley Road from the east drainage boundary at Cave Creek (Central Avenue extended) west to the west boundary at 35th Avenue in Phoenix, Arizona. Hydrologic analysis and conceptual design studies were completed by Greiner Engineering Sciences, Inc. (Greiner) in October 1987. CRS Sirrine (CRSS) was retained by ADOT to prepare construction plans and specifications for the I-17/Outer Loop Interchange. CRSS revised the hydrologic model to agree with observed local stormwater flows contributing to an existing Interceptor Drain from 15th Avenue to I-17, summarized in the Section 6 Drainage Report dated July, 1989. The Scatter Wash model north of Deer Valley Road and east of I-17 was refined by Greiner in a study for the City of Phoenix in 1989.

Since each of the three analyses is unique, a synthesis of the latest and most detailed watershed models for Scatter Wash and the Interceptor Drain is presented herein for the purpose of documenting the effect of Outer Loop storm drain improvements on Scatter Wash. The report focuses on how the Interceptor Drain and roadway drainage system affect the peak flow rate in Scatter Wash during the 100-year storm event.

Existing Drainage Conditions

Scatter Wash drains approximately 13.5 square miles of undeveloped to lightly developed desert land north of Beardsley Road extending eastward to the Union Hills. Urbanization in the study area is advancing at a rapid pace. The 1989 Greiner drainage model was used to determine peak flow rates into Scatter Wash from basins north of Deer Valley Road and East of I-17. The delineation of subbasins is presented in Figure 1. This model divides the drainage basin into two branches. The north branch of Scatter Wash contributes runoff to the 2 - 8' x 7' RCBC's located one one-quarter mile south of Pinnacle Peak Road. Overflow from this inlet passes partially into the I-17 median and south to the Deer Valley Interchange. The remaining overflow bypasses I-17 culverts and passes west at points further south.

The South Branch of Scatter Wash flows under I-17 through three culverts identified as I.D.'s 8, 9 and 10 on Figure 1. The combined flow through these culverts is 785 cfs. Stormwater which bypasses these I-17 cross culverts is routed south into the I-17/Deer Valley Interchange. The interchange depression is modeled as a small reservoir with a weir overflow spillway. Overflow from this depression was routed along Deer Valley Road to Scatter Wash.

A drainage basin approximately 0.04 square miles, south of Deer Valley Road, bounded by Lone Cactus Drive, Deer Valley Road, I-17 and 23rd Avenue drains to a CMPA (65-inch x 40-inch) under I-17. The maximum discharge from this culvert is 50 cfs. Any bypass flows north to the Deer Valley Interchange. It is estimated that minor bypass flows occur during the 100-year storm. Since this basin is small, its area was added to other basins contributing to Deer Valley Interchange runoff.

Stormwater runoff from between I-17 and 23rd Avenue south of Deer Valley Road is split between a partial flow under I-17 through existing culverts and partial flow to a detention basin at Intel which overflow into the Beardsley Road grade separation. Discharge from this detention basin reaches Scatter Wash south of Beardsley Road. The culvert discharge on the west side of I-17 generally flows south to Beardsley Road and thence southwest along I-17 and 27th Avenue.

The drainage area west of I-17 was divided into eight basins. This is a refinement of the 1987 original Greiner report. Smaller basins more accurately represent the actual points of concentration and their routing from I-17 to the main channel of Scatter Wash. The subbasins are presented in Figure 2. Subbasins east of I-17 in Figure 2 were revised to agree with the latest Greiner Report (1989) in Figure 1 and used for the current model.

The hydrologic model (HEC-1) of existing conditions for Scatter Wash is presented in Appendix A. Peak flow for the 100-year storm is 4375 cubic feet per second occurs at hour 13.5. This peak flow represents the baseline flowrate for the 100-year storm and can not be exceeded with construction of the Outer Loop Highway drainage system.

Outer Loop Drainage Modifications

Construction of the Interceptor Drain for the Outer Loop Highway will result in diversion of storm runoff to Scatter Wash at the Beardsley Road crossing. Drainage basins from I-17 to the Cave Creek drainage boundary will be routed through a series of detention basins, channels and closed conduits as described in the final drainage report for the Outer Loop Highway, Section 6, (CRSS, 1989). Discharge from the Interceptor Drain will be combined with existing flows in Scatter Wash. Stormwater runoff from within the Outer Loop right-of-way will be collected in the gravity drain and conveyed to Scatter Wash immediately downstream of Beardsley Road (CRSS, 1989). Combined flows from the three sources will be added in a manner that will not exceed the present existing peak discharge for Scatter Wash during the 100-year storm.

The drainage basin near the northwest corner of the Deer Valley Airport is included in the Scatter Wash Model (Greiner, 1989) and the Interceptor Drain model. The Interceptor Drain model (CRSS, 1989) was modified to duplicate the boundary of the south Scatter Wash model presented in the Greiner Report (1989). This modification results in a small reduction of potential runoff entering Detention Basin B.

The modified hydrologic model (HEC-1) for Scatter Wash, presented in Appendix B indicates a peak discharge of 4051 cfs at 13.5 hours. Subbasins P11B, P11C and P11D are included in the Scatter Wash model existing conditions (Appendix A). However, they are eliminated from the Scatter Wash model with Outer Loop Improvements, as these subbasins are included in the Interceptor Drain Model (CRSS, 1989) and will no longer contribute overland flows.

Analysis also include elimination of input errors from earlier concept reports that had not been previously detected. The most significant modification is the elimination of Detention Basin F. During current calculations, it was discovered that the basin has no significant effect on the magnitude of flows reaching Beardsley Road crossing. The Interceptor Drain concept has been revised to reflect removal of the basin. The modified hydrologic model (HEC-1) for the Interceptor Drain is included as Appendix C. The peak flow of 582 cfs occurs at hour 13.1.

Depressed roadway drainage is collected from within the Outer Loop right-of-way from 7th Avenue into the Gravity Drain. Discharge calculations are presented in the Outer Loop Highway, Section 6, Final Drainage Report (CRSS, 1989). Design peak discharge for a 50-year storm event is 343 cfs at 8.3 hours. The early time to peak indicates that runoff from the depressed roadway areas has been completed prior to arrival of significant flow from Beardsley Road at Scatter Wash.

Conclusions and Recommendations

The Interceptor Drain, and Scatter Wash hydrographs are presented for the existing and Outer Loop conditions. Simple addition of hydrographs for Scatter Wash with Outer Loop and Interceptor Drain model would yield a peak discharge of 4591 cfs and would exceed the existing peak condition of 4375 cfs by 216 cfs or 5 percent.

This analysis indicates a detention basin is needed in the Interceptor Drain system as proposed in the Concept Drainage Report. The detention basin will be located at 35th Avenue and Beardsley Road. After the 35th Avenue basin was added to the Interceptor drain hydrologic model, the total flow in Scatter Wash will be no more than existing conditions. As a preliminary trial, a detention basin with a 33-inch orifice outlet was used. A sideflow weir will discharge 332 cfs into the basin while the remaining 250 cfs, is discharged directly to Scatter Wash. The peak discharge from the basin outlet is limited to 93 cfs. Combined discharge from the Interceptor Drain is therefore 343 cfs at hour 14.25. When combined with Scatter Wash, the resulting peak flow is 4386 cfs at hour 13.5 or only eleven cfs (0.25 percent) above the baseline Scatter wash flow.

This analysis indicates that the Interceptor Drain must include a detention basin near 35th Avenue and Beardsley Road. The area of the basin could be approximately 4 acres with a nominal depth of 10 feet. The combined flow to Scatter Wash from the basin and the Interceptor Drain can be limited to 424 cfs, if flows greater than 250 cfs are diverted to the basin. The diverted flow can be optimized within limits imposed by the maximum Scatter Wash flow of 4375 cfs. The conceptual hydrologic (HEC-1) model of the Interceptor Drain and detention basin is presented in Appendix D.

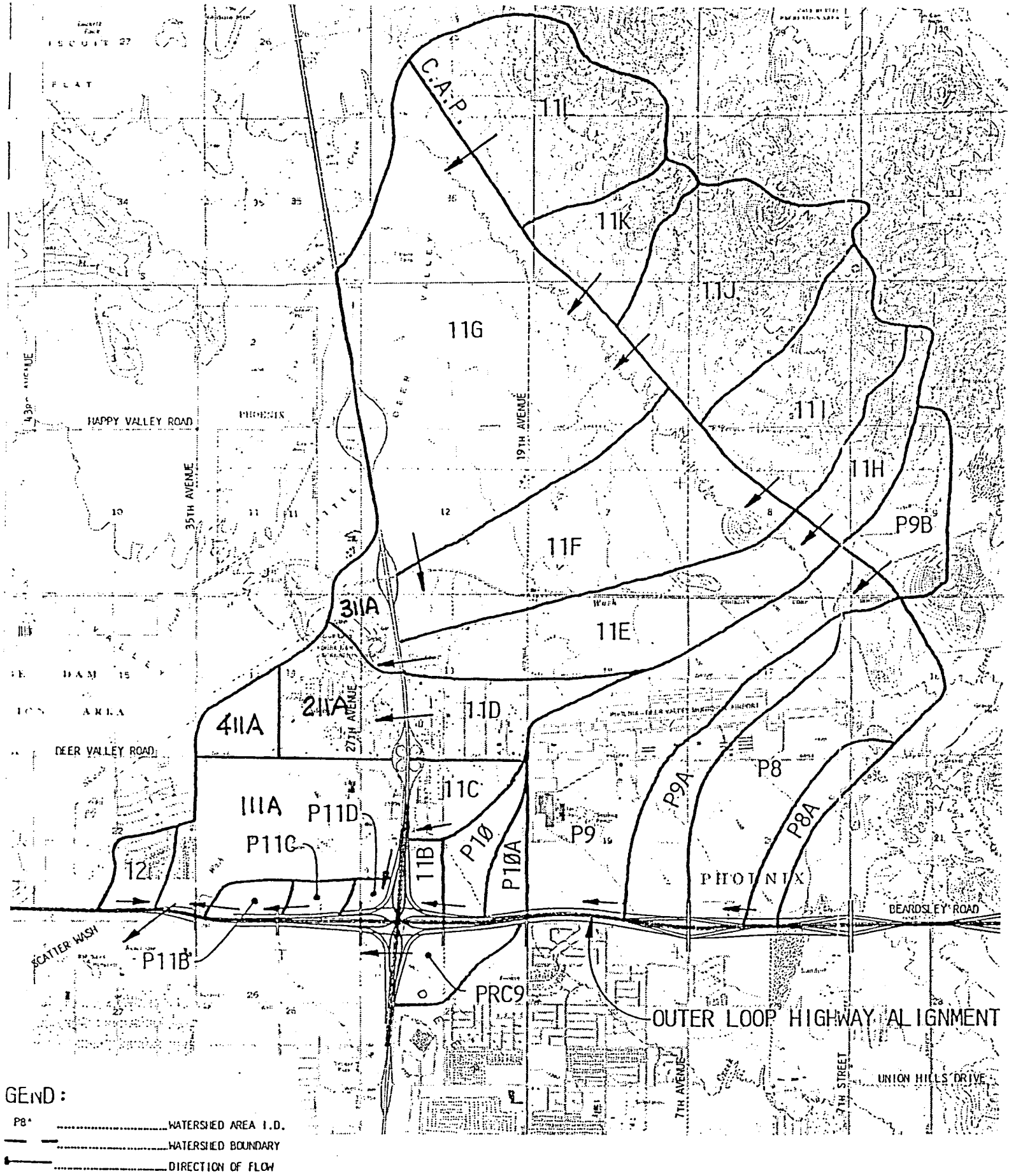


FIGURE 2
(GREINER, 1987)

APPENDIX A

SCATTER WASH
PRE-PROJECT CONDITIONS

```
****
FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1.1985
U.S. ARMY CORPS OF ENGINEERS. THE HYDROLOGIC ENGINEERING CENTER. 609 SECOND STREET. DAVIS. CA. 95616
****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS. AND THE NUMBER OF PLANS ARE REDUCED TO 3
```

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

  1           ID        SCATTER WASH DRAINAGE AND STORM DRAIN STUDY
  2           ID        GREINER. INC., MODIFIED BY DCCO FOR THE HYDROGRAPH AT 35TH AVE
  3           ID        EXISTING CONDITIONS.   100-YR. 24-HR STORM       FILE: S5M.DA
  4           IT      5                    288
  5           IO      5

  6           KK    NSW1
  7           KM    CALCULATE RUNOFF FROM DA NSW1
  8           PH                    0.68    1.37    2.40    2.65    2.82    3.14    3.51    3.90
  9           BA    1.37
 10           LS            83
 11           UD    0.29

 12           KK   RNSW1
 13           KM    ROUTE FLOW THRU CAP STRUCTURE
 14           RS      1    STOR       0
 15           SV      0       4      17      52      96     148     209     279
 16           SE     15      16      17      18      19      20      21      22
 17           SL     15    9.62     0.6     0.5
 18           SS   21.9      50     3.0     1.5

 19           KK   KNSW1
 20           KM    ROUTE CULVERT DISCHARGE TO HAPPY VALLEY ROAD AND I-17
 21           RK    8000  0.0091   0.03              0              20

 22           KK    NSW2
 23           KM    CALCULATE RUNOFF FROM DA NSW2
 24           BA    1.33
 25           LS          79.32
 26           UD    0.48

 27           KK      C1
 28           KM    COMBINE HYDROGRAPHS NSW1 AND NSW2
 29           HC      2

 30           KK     RC1
 31           KM    ROUTE HYDROGRAPH C1 TO PINNACLE PEAK ROAD
 32           RK    4000  0.0078    0.03              0      20     150

 33           KK    NSW3
 34           KM    CALCULATE RUNOFF FROM DA NSW3
 35           BA    0.54
 36           LS          82.7
 37           UD    0.29

 38           KK   RNSW1
 39           KM    ROUTE FLOW THRU CAP STRUCTURE
 40           RS      1    STOR       0
 41           SV      0       2      11      34      62      96     135     180
 42           SE     15      16      17      18      19      20      21      22
 43           SL     15    4.91     0.6     0.5
 44           SS   21.9      50     3.0     1.5
```

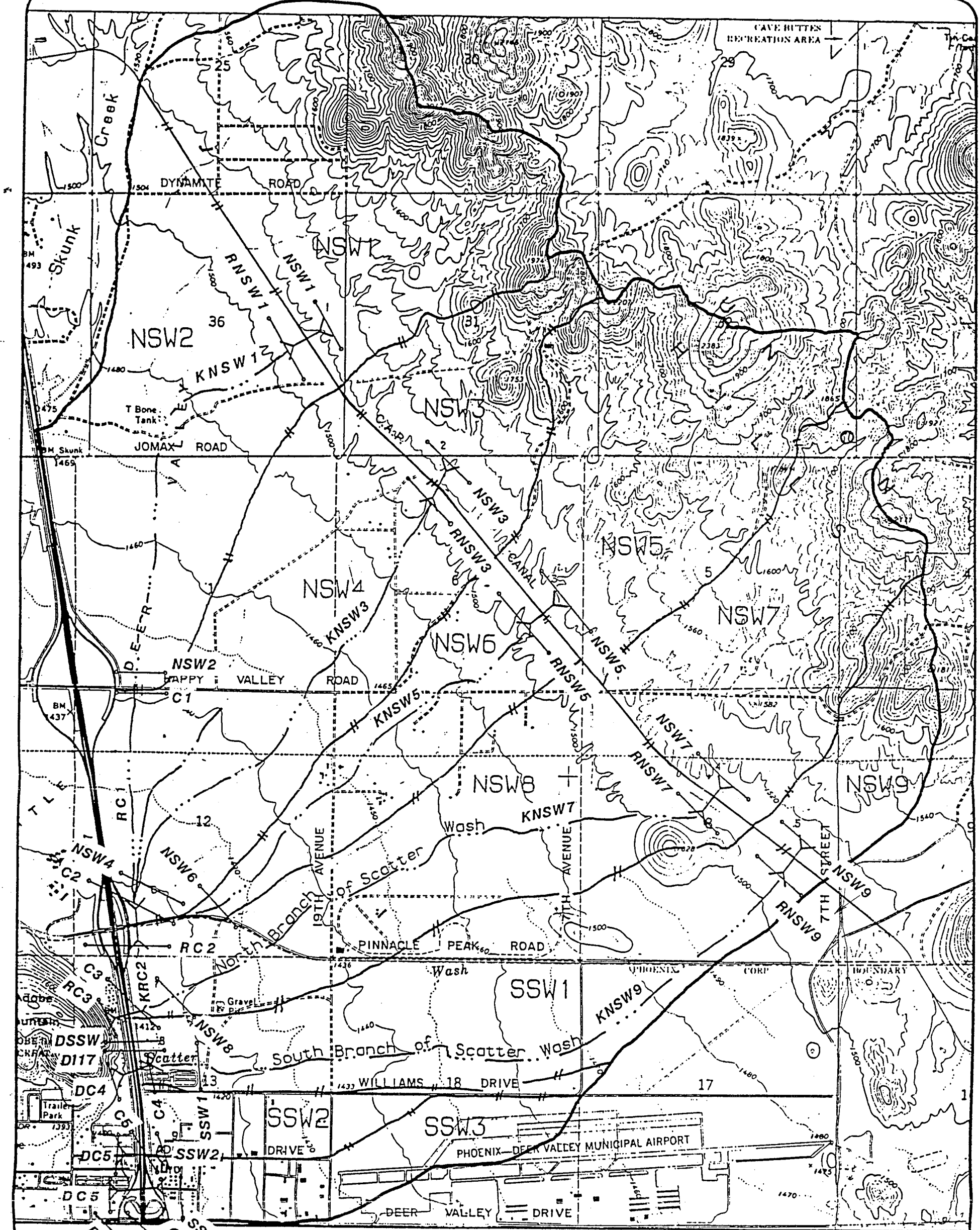
```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 45           KK   KNSW3
 46           KM    ROUTE CULVERT DISCHARGE TO PINNACLE PEAK ROAD AT I-17
 47           RK   11000  0.0095    0.03              0              20

 48           KK    NSW4
 49           KM    CALCULATE RUNOFF FROM DA NSW4
 50           BA    1.52
 51           LS          75.78
 52           UD    0.47

 53           KK    NSW5
 54           KM    CALCULATE RUNOFF FROM DA NSW5
 55           BA    1.17
 56           LS          84.3
 57           UD    0.39

 58           KK   RNSW5
 59           KM    ROUTE FLOW THRU CAP STRUCTURE
 60           RS      1    STOR       0
 61           SV      0       2       7      24      43      67      95     127
 62           SE     15      16      17      18      19      20      21      22
 63           SL     15    9.62     0.6     0.5
 64           SS   21.9      50     3.0     1.5

 65           KK   KNSW5
 66           KM    ROUTE CULVERT DISCHARGE TO PINNACLE PEAK ROAD AT I-17
 67           RK   10000  0.0095    0.03              0              20

 68           KK    NSW6
 69           KM    CALCULATE RUNOFF FROM DA NSW6
 70           BA     0.6
 71           LS          75.95
 72           UD    0.48

 73           KK      C2
 74           KM    COMBINE HYDROGRAPHS C1. NSW3. NSW4. NSW5, NSW6
 75           HC      5

 76           KK     RC2
 77           KO      0       2
 78           KM    ROUTE FLOW THRU PINNACLE PEAK ROAD CULVERTS
 79           RS      1    STOR       0
 80           SV      0     .05     1.2     9.1    35.6      65    94.5     139
 81           SE     11      12      14      16      18      19      20      21
 82           SQ      0      54     254     528     936    2344    5278   10401

 83           KK    KRC2
 84           KM    ROUTE CULVERT OUTFLOW TO I-17 CULVERTS
 85           RK    1800  0.0023    0.03              0      20      10
```

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

 86           KK   NSW7
 87           KM   CALCULATE RUNOFF FROM DA NSW7
 88           BA   0.96
 89           LS          81.6
 90           UD    0.4

 91           KK  RNSW7
 92           KM   ROUTE FLOW THRU CAP STRUCTURE
 93           RS      1   STOR      0
 94           SV      0      2      9     30     55     85    120    160
 95           SE     15     16     17     18     19     20     21     22
 96           SL     15   7.07    0.6    0.5
 97           SS   21.9     50    3.0    1.5

 98           KK  KNSW7
 99           KM   ROUTE CULVERT DISCHARGE TO I-17
100           RK  13000  0.0085    0.03              0             20

101           KK   NSW8
102           KM   CALCULATE RUNOFF FROM DA NSW8
103           BA   1.23
104           LS         75.99
105           UD   0.56

106           KK     C3
107           KM   COMBINE HYDROGRAPHS C2, NSW7, NSW8
108           HC      3

109           KK    RC3
110           KM   ROUTE FLOW THRU DETENTION BEHIND 2-8X7 RCBC AT I-17
111           KD      0      2
112           RS      1   STOR      0
113           SV      0  0.001   .220   1.16   8.44     17     30     49     67     76
114           SE    3.8      4      6      8     10     11     12     13   13.7     14
115           SQ      0      1    176    414    680    880   1091   1593   2678   3746

116           KK   DSSW
117           KM   DIVERT OVERFLOWS SOUTH TO SINGLE CULVERT AT MH PARK, AND WEST ONTO I-17
118           KM   DQ IS Q THRU 2-8X7 CULVERT (MAX 1312 CFS); DI IS TOTAL Q
119           DT    SSW
120           DI      1    880   1091   1593   2678   3746
121           DQ      1    880   1060   1184   1296   1312

122           KK   DI17
123           KM   SEPARATE OUT WEST OVERFLOWS ONTO THE FRONTAGE ROAD AND MAINLINE I-17
124           KM   THESE FLOWS HEAD SOUTH AND EVENTUALLY ENTER THE DEER VALLEY INTERCHANGE
125           KM   REMAINING FLOWS CONTINUE SOUTH TO 6X7 BOX CULVERT ON SCATTER WASH AT I-17
126           DT    I17
127           DI     31    409   1382   2434
128           DQ      0      0    215    840
```

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

 129          KK   NSW9
 130          KM   CALCULATE RUNOFF FROM DA NSW9
 131          BA   0.38
 132          LS          81.1
 133          UD   0.29

 134          KK   RNSW9
 135          KM   ROUTE FLOW THRU CAP STRUCTURE
 136          RS     1   STOR      0
 137          SV     0      1      4     14     26     40     56     75
 138          SE    15     16     17     18     19     20     21     22
 139          SL    15   4.19   0.16    0.5
 140          SS  21.9     50    3.0    1.5

 141          KK   KNSW9
 142          KM   ROUTE CULVERT DISCHARGE TO I-17
 143          RK  14200  0.0078   0.03              0             20

 144          KK   SSW1
 145          KM   CALCULATE RUNOFF FROM DA SSW1
 146          BA   1.24
 147          LS         75.97
 148          UD   0.66

 149          KK    C4
 150          KM   COMBINE HYDROGRAPHS SSW, NSW9 AND SSW1--- SCATTER WASH FLOW EAST OF I-17
 151          HC     3

 152          KK    DC4
 153          KM   DIVERT FLOW ACROSS I-17 THRU 6X7 RCBC (MAX Q 510 CFS)
 154          DT   DDC4
 155          DI     0      1    510    511   1000   2000
 156          DQ     0      1    510    510    510    510

 157          KK   SSW2
 158          KM   CALCULATE RUNOFF FROM DA SSW2
 159          BA   0.28
 160          LS         76.32   30.0
 161          UD   0.29

 162          KK    C5
 163          KM   COMBINE HYDROGRAPHS SSW2 AND DDC4
 164          HC     2

 165          KK    DC5
 166          KM   DIVERT FLOW ACROSS I-17 THRU 65"X40" CMP AT ADOBE
 167          DT    DC5
 168          DI     0    115    116   1000   3000
 169          DQ     1    115    115    115    115
```

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

 170          KK    SSW3
 171          KM    CALCULATE RUNOFF FROM DA SSW3
 172          BA    0.39
 173          LS          75.45    50.0
 174          UD    0.32

 175          KK      C6
 176          KM    COMBINE HYDROGRAPHS SSW3 AND C5
 177          HC      2

 178          KK     DC6
 179          KM    DIVERT FLOW ACROSS I-17 THRU 6X3 RCBC AT LOUISE
 180          KM    C6 REPRESENTS TOTAL FLOW TO DEPRESSED INTERCHANGE AT DEER VALLEY RD.
 181          DT     DC6
 182          DI      0       1     156     157    1000    3000
 183          DQ      0       1     156     156     156     156

 184          KK    RI17
 185          KM    RETRIEVE HYDROGRAPH OF OVERFLOW ONTO I-17 MEDIAN
 186          DR     I17

 187          KK      C8
 188          KM   COMBINE HYDROGRAPH RI17 AND DC5 FOR TOTAL FLOW INTO DEER VALLEY INTERCHANGE
 189          KM          FROM SCATTER WASH DRAINAGE AREA
 190          HC      2

 191          KK    RES4
 192          KM    ROUTE FLOW THROUGH DEPRESSED SECTION TO WEST SIDE OF I-17
 193          RS      1    STOR       0
 194          SV      0       1    15.9    37.7    53.8    61.3    74.1    99.0   129.5
 195          SE     82      84      90      94      96    96.8      98     100     102
 196          SQ      0       0       0       0       0       1     808    5403   13835

 197          KK    RDC5
 198          KM    RETRIEVE HYDROGRAPH DC5
 199          DR     DC5

 200          KK    RDC6
 201          KM    RETRIEVE HYDROGRAPH DC6
 202          DR     DC6

 203          KK      C7
 204          KM    COMBINE TOTAL SOUTH OF WILLIAMS DR/WEST OF I-17
 205          HC      3

 206          KK    RTCB
 207          KM    ROUTE TO CORNER OF DEER VALLEY AND 31ST
 208          RK    4200  0.0044    .025                    40      20
```

```
! INE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 209         KK    RNSW
 210         KM    RETRIEVE HYDROGRAPH FOR NORTH BRANCH OF SCATTER WASH
 211         DR     SSW

 212         KK    RSSW
 213         KM    RETRIEVE HYDROGRAPH FOR SOUTH BRANCH OF SCATTER WASH
 214         DR    DDC4

 215         KK    311A
 216         KM    RUNOFF FROM BASIN 311A EAST OF ADOBE MT.
 217         BA     .20
 218         LS              B8
 219         UD     .29

 220         KK     C8
 221         KM    COMBINE TOTAL NORTH OF WILLIAMS DR/WEST OF I-17
 222         HC      3

 223         KK    RTC7
 224         KM    ROUTE TO CORNER OF DEER VALLEY RD AND 31ST AVE.
 225         RK    5000  0.0062    0.03                    0      20

 226         KK    211A
 227         KM    RUNOFF FROM BASIN 211A SD. TO DR VLY W. TO 31ST
 228         BA     .45
 229         LS              B8
 230         UD     .86

 231         KK    411A
 232         KM    RUNOFF FROM BASIN 411A NW OF 31ST AND DR VLY
 233         BA     .21
 234         LS              B2
 235         UD    1.22

 236         KK     C9
 237         KM    COMBINE TOTAL SW DISCHARGE TO 31ST AND DEER VALLEY
 238         HC      4

 239         KK    RTC9
 240         KM    ROUTE DISCHARGE TO BEARDSLEY ROAD
 241         RK    6200  0.0062    0.03                    0      20

 242         KK    111A
 243         KM    RUNOFF FROM 111A E OF 35TH N OF MOHAWK LN
 244         BA     .95
 245         LS              B3
 246         UD    1.90

 247         KK    P12
 248         KM    RUNOFF FROM BASIN P12 E OF SCA WA
 249         BA     .17
 250         LS              B2
 251         UD     .72
```



CULVERT SUMMARY

I.D.	TYPE AND SIZE
1	42" STEEL PIPE
2	30" STEEL PIPE
3	42" STEEL PIPE
4	36" STEEL PIPE
5	30" STEEL PIPE
6	2-8'x7' RCBC
7	2-8'x7' RCBC
8	1-6'x7' RCBC
9	1-65"x40" CMP
10	1-6'x3' RCBC

LEGEND

- STUDY WATERSHED AREA BOUNDARY
- DRAINAGE SUBAREA BOUNDARY
- NSW1 DRAINAGE SUBAREA I.D.
- MAJOR CULVERT AND I.D.
- PRIMARY FLOW PATH
- HYDROGRAPH IDENTIFICATION (HEC-1)

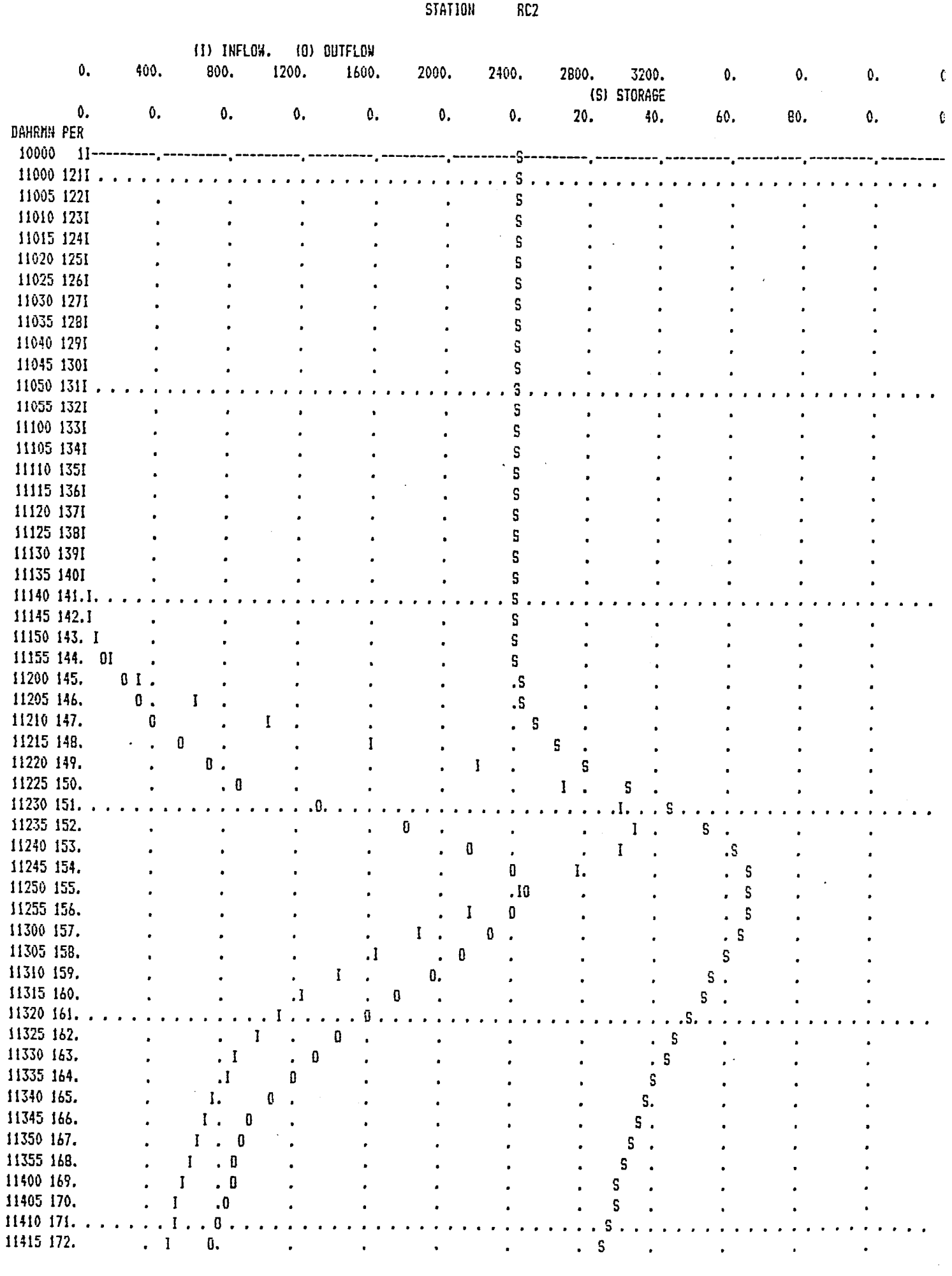
HYDROLOGY WORK MAP
DRAINAGE SUBAREAS AND
MAJOR DRAINAGE FEATURES

FIGURE 1
(GREINER 1990)

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

 252          KK     C10
 253          KM    COMBINE TOTAL DISCHARGE IN SW N OF 35TH AVE
 254          HC       3

 255          KK   DA11D
 256          KM    RUNOFF FROM SUB-BASIN P11D
 257          BA     .13
 258          LS              82
 259          UD    1.01

 260          KK   RT11D
 261          KM    ROUTE HYDROGRAPH TO P11C
 262          RK    1950  0.0044    0.03                    8       2

 263          KK   DA11C
 264          KM    RUNOFF FROM SUB-BASIN P11C
 265          BA     .22
 266          LS              83
 267          UD    1.27

 268          KK   CB11C
 269          KM    COMBINE HYDROGRAPHS AT BASE OF P11C
 270          HC       2

 271          KK   RT11C
 272          KM    ROUTE HYDROGRAPH TO P11B
 273          RK    1950  0.0044    0.03                    8       2

 274          KK   DA11B
 275          KM    RUNOFF FROM SUB-BASIN P11B
 276          BA     .18
 277          LS              90
 278          UD    1.27

 279          KK   CB11B
 280          KO       0       2
 281          KM    COMBINE HYDROGRAPHS AT SCATTER WASH
 282          KO       1       2
 283          HC       3
 284          ZZ
```

```
                                    ****
                 FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1.1985
        U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                    ****



                        SCATTER WASH DRAINAGE AND STORM DRAIN STUDY
                        GREINER, INC., MODIFIED BY DCCO FOR THE HYDROGRAPH AT 35TH AVE
                        EXISTING CONDITIONS,   100-YR, 24-HR STORM       FILE: S5M.DA

  5 ID        OUTPUT CONTROL VARIABLES
                   IPRNT          5  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT         HYDROGRAPH TIME DATA
                    NMIN          5  MINUTES IN COMPUTATION INTERVAL
                   IDATE      1    0  STARTING DATE
                   ITIME       0000  STARTING TIME
                      NQ        288  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE      1    0  ENDING DATE
                  NDTIME       2355  ENDING TIME

              COMPUTATION INTERVAL     .08 HOURS
                  TOTAL TIME BASE   23.92 HOURS

       ENGLISH UNITS


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


          **************
          *            *
 76 KK    *      RC2   *
          *            *
          **************

 77 KO        OUTPUT CONTROL VARIABLES
                  IPRNT          5  PRINT CONTROL
                  IPLOT          2  PLOT CONTROL
                  QSCAL         0.  HYDROGRAPH PLOT SCALE

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN       0. TO       54.
             THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
             THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
```

STATION RC2


(I) INFLOW. (O) OUTFLOW
0. 400. 800. 1200. 1600. 2000. 2400. 2800. 3200. 0. 0. 0.
(S) STORAGE
0. 0. 0. 0. 0. 0. 0. 20. 40. 60. 80. 0.
DAHRMN PER
10000 1I
11000 121I
11005 122I
11010 123I
11015 124I
11020 125I
11025 126I
11030 127I
11035 128I
11040 129I
11045 130I
11050 131I
11055 132I
11100 133I
11105 134I
11110 135I
11115 136I
11120 137I
11125 138I
11130 139I
11135 140I
11140 141.I
11145 142.I
11150 143. I
11155 144. OI
11200 145. O I
11205 146. O I
11210 147. O I
11215 148. O I
11220 149. O I
11225 150. O I
11230 151. O I S
11235 152. O I S
11240 153. O I S
11245 154. O I S
11250 155. IO S
11255 156. I O S
11300 157. I O S
11305 158. I O S
11310 159. I O S
11315 160. I O S
11320 161. I O S
11325 162. I O S
11330 163. I O S
11335 164. I O S
11340 165. I O S
11345 166. I O S
11350 167. I O S
11355 168. I O S
11400 169. I O S
11405 170. I O S
11410 171. I O S
11415 172. I O S

```
11420 173.          . I      O.         .         .         .         .         . S       .         .         .         .
11425 174.          . I     O .         .         .         .         .S        .         .         .         .
11430 175.          . I     O .         .         .         .         S         .         .         .         .
11435 176.          . I    O  .         .         .         .        S.         .         .         .         .
11440 177.          .I    O   .         .         .         .        S.         .         .         .         .
11445 178.          .I    O   .         .         .         .       S .         .         .         .         .
11450 179.          .I   O    .         .         .         .      S  .         .         .         .         .
11455 180.          .I   O    .         .         .         .      S  .         .         .         .         .
11500 181. . . . . .I. .O. . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . .
11505 182.          I   O     .         .         .         .     S   .         .         .         .         .
11510 183.          I  O      .         .         .         .    S    .         .         .         .         .
11515 184.          I O       .         .         .         .    S    .         .         .         .         .
11520 185.          I O       .         .         .         .   S     .         .         .         .         .
11525 186.          I O       .         .         .         .   S     .         .         .         .         .
11530 187.          I O       .         .         .         .   S     .         .         .         .         .
11535 188.          IO        .         .         .         .   S     .         .         .         .         .
11540 189.          IO        .         .         .         .  S      .         .         .         .         .
11545 190.          IO        .         .         .         .  S      .         .         .         .         .
11550 191. . . . . IO. . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.          I         .         .         .         .  S      .         .         .         .         .
11600 193.         IO         .         .         .         .  S      .         .         .         .         .
11605 194.         IO         .         .         .         .  S      .         .         .         .         .
11610 195.         IO         .         .         .         .  S      .         .         .         .         .
11615 196.         IO         .         .         .         .  S      .         .         .         .         .
11620 197.         IO         .         .         .         .  S      .         .         .         .         .
11625 198.         IO         .         .         .         . S       .         .         .         .         .
11630 199.         I.         .         .         .         . S       .         .         .         .         .
11635 200.         I.         .         .         .         . S       .         .         .         .         .
11640 201. . . . .I. . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.         I.         .         .         .         . S       .         .         .         .         .
11650 203.         I.         .         .         .         . S       .         .         .         .         .
11655 204.         I.         .         .         .         . S       .         .         .         .         .
11700 205.         I.         .         .         .         . S       .         .         .         .         .
11705 206.         I.         .         .         .         . S       .         .         .         .         .
11710 207.         I.         .         .         .         . S       .         .         .         .         .
11715 208.         I.         .         .         .         . S       .         .         .         .         .
11720 209.         I.         .         .         .         . S       .         .         .         .         .
11725 210.         I.         .         .         .         . S       .         .         .         .         .
11730 211. . . . .I. . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.        IO.         .         .         .         . S       .         .         .         .         .
11740 213.        IO.         .         .         .         . S       .         .         .         .         .
11745 214.        IO.         .         .         .         . S       .         .         .         .         .
11750 215.        IO.         .         .         .         . S       .         .         .         .         .
11755 216.        IO.         .         .         .         . S       .         .         .         .         .
11800 217.        I .         .         .         .         . S       .         .         .         .         .
11805 218.        I .         .         .         .         . S       .         .         .         .         .
11810 219.        I .         .         .         .         . S       .         .         .         .         .
11815 220.        I .         .         .         .         . S       .         .         .         .         .
11820 221. . . . I . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.        I .         .         .         .         . S       .         .         .         .         .
11830 223.        I .         .         .         .         . S       .         .         .         .         .
11835 224.        I .         .         .         .         . S       .         .         .         .         .
11840 225.        I .         .         .         .         . S       .         .         .         .         .
11845 226.        I .         .         .         .         . S       .         .         .         .         .
11850 227.        I .         .         .         .         . S       .         .         .         .         .
11855 228.        I .         .         .         .         . S       .         .         .         .         .
11900 229.        I .         .         .         .         . S       .         .         .         .         .
11905 230.        I .         .         .         .         . S       .         .         .         .         .
11910 231. . . . I . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232.        I .         .         .         .         .S        .         .         .         .         .
```

```
11920 233.     I .     .     .     .     .    .S     .     .     .     .     .     .
11925 234.     I .     .     .     .     .    .S     .     .     .     .     .     .
11930 235.     I .     .     .     .     .    .S     .     .     .     .     .     .
11935 236.     I .     .     .     .     .    .S     .     .     .     .     .     .
11940 237.     I .     .     .     .     .    .S     .     .     .     .     .     .
11945 238.     I .     .     .     .     .    .S     .     .     .     .     .     .
11950 239.     I .     .     .     .     .    .S     .     .     .     .     .     .
11955 240.     I .     .     .     .     .    .S     .     .     .     .     .     .
12000 241. . . .IO . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12005 242.    IO .     .     .     .     .    .S     .     .     .     .     .     .
12010 243.    IO .     .     .     .     .    .S     .     .     .     .     .     .
12015 244.    IO .     .     .     .     .    .S     .     .     .     .     .     .
12020 245.    IO .     .     .     .     .    .S     .     .     .     .     .     .
12025 246.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12030 247.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12035 248.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12040 249.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12045 250.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12050 251. . . .I. . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12055 252.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12100 253.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12105 254.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12110 255.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12115 256.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12120 257.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12125 258.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12130 259.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12135 260.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12140 261. . . .I. . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 262.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12150 263.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12155 264.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12200 265.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12205 266.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12210 267.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12215 268.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12220 269.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12225 270.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12230 271. . . .I. . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 272.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12240 273.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12245 274.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12250 275.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12255 276.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12300 277.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12305 278.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12310 279.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12315 280.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12320 281. . . .I. . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 282.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12330 283.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12335 284.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12340 285.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12345 286.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12350 287.    I  .     .     .     .     .    .S     .     .     .     .     .     .
12355 288.------I--.---------.---------.---------.---------.---------.S--------.---------.---------.---------.---------.---------.
```

*** ***

```
          **************
          *            *
109 KK    *      RC3   *
          *            *
          **************
```

```
111 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          2  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE
```

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 0. TO 176.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

STATION RC3

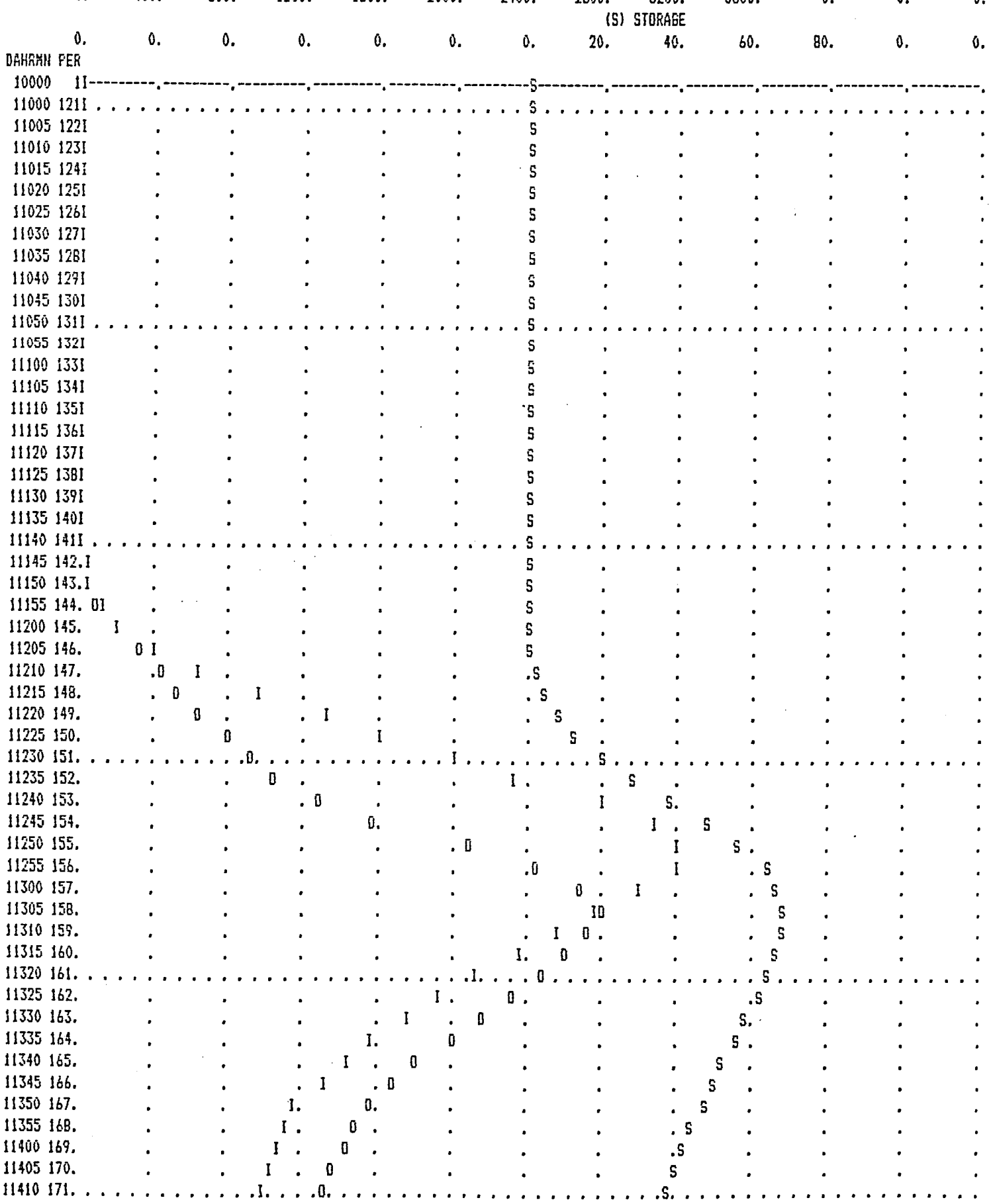
(I) INFLOW. (O) OUTFLOW

0. 400. 800. 1200. 1600. 2000. 2400. 2800. 3200. 3600. 0. 0. 0.

(S) STORAGE

0. 0. 0. 0. 0. 0. 0. 20. 40. 60. 80. 0. 0.

DAHRMN PER



```
11420 173.         .         .  I      O         .         .         .         .      S  .         .         .         .         .
11425 174.         .         .  I     O.         .         .         .         .     S   .         .         .         .         .
11430 175.         .         . I     O .         .         .         .         .    S    .         .         .         .         .
11435 176.         .         .I     O  .         .         .         .         .    S    .         .         .         .         .
11440 177.         .         I     O   .         .         .         .         .   S     .         .         .         .         .
11445 178.         .         I     O   .         .         .         .         .  S      .         .         .         .         .
11450 179.         .        I.    O    .         .         .         .         . S       .         .         .         .         .
11455 180.         .        I.   O     .         .         .         .         .S        .         .         .         .         .
11500 181. . . . . . . . I . . O . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . .
11505 182.         .       I .  O      .         .         .         .         S         .         .         .         .         .
11510 183.         .      I  . O       .         .         .         .        S.         .         .         .         .         .
11515 184.         .      I  . O       .         .         .         .       S .         .         .         .         .         .
11520 185.         .     I   .O        .         .         .         .       S .         .         .         .         .         .
11525 186.         .     I   O         .         .         .         .      S  .         .         .         .         .         .
11530 187.         .    I    O         .         .         .         .     S   .         .         .         .         .         .
11535 188.         .    I   O.         .         .         .         .     S   .         .         .         .         .         .
11540 189.         .   I   O .         .         .         .         .    S    .         .         .         .         .         .
11545 190.         .   I   O .         .         .         .         .    S    .         .         .         .         .         .
11550 191. . . . . . . I .O. . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.         .  I  O   .         .         .         .         .   S     .         .         .         .         .         .
11600 193.         .  I  O   .         .         .         .         .   S     .         .         .         .         .         .
11605 194.         .  I O    .         .         .         .         .  S      .         .         .         .         .         .
11610 195.         .  I O    .         .         .         .         .  S      .         .         .         .         .         .
11615 196.         .  IO     .         .         .         .         .  S      .         .         .         .         .         .
11620 197.         .  IO     .         .         .         .         .  S      .         .         .         .         .         .
11625 198.         . I O     .         .         .         .         . S       .         .         .         .         .         .
11630 199.         . IO      .         .         .         .         . S       .         .         .         .         .         .
11635 200.         . IO      .         .         .         .         . S       .         .         .         .         .         .
11640 201. . . . . . IO. . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.         . IO      .         .         .         .         . S       .         .         .         .         .         .
11650 203.         . IO      .         .         .         .         . S       .         .         .         .         .         .
11655 204.         . I       .         .         .         .         . S       .         .         .         .         .         .
11700 205.         . I       .         .         .         .         . S       .         .         .         .         .         .
11705 206.         . I       .         .         .         .         . S       .         .         .         .         .         .
11710 207.         . I       .         .         .         .         . S       .         .         .         .         .         .
11715 208.         . I       .         .         .         .         .S        .         .         .         .         .         .
11720 209.         . I       .         .         .         .         .S        .         .         .         .         .         .
11725 210.         .IO       .         .         .         .         .S        .         .         .         .         .         .
11730 211. . . . . .IO . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.         .IO       .         .         .         .         .S        .         .         .         .         .         .
11740 213.         .IO       .         .         .         .         .S        .         .         .         .         .         .
11745 214.         .I        .         .         .         .         .S        .         .         .         .         .         .
11750 215.         .I        .         .         .         .         .S        .         .         .         .         .         .
11755 216.         .I        .         .         .         .         .S        .         .         .         .         .         .
11800 217.         .I        .         .         .         .         .S        .         .         .         .         .         .
11805 218.         .I        .         .         .         .         .S        .         .         .         .         .         .
11810 219.         .I        .         .         .         .         .S        .         .         .         .         .         .
11815 220.         .I        .         .         .         .         .S        .         .         .         .         .         .
11820 221. . . . . .I. . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.         .I        .         .         .         .         .S        .         .         .         .         .         .
11830 223.         .I        .         .         .         .         .S        .         .         .         .         .         .
11835 224.         .I        .         .         .         .         .S        .         .         .         .         .         .
11840 225.         .I        .         .         .         .         .S        .         .         .         .         .         .
11845 226.         .I        .         .         .         .         .S        .         .         .         .         .         .
11850 227.         .I        .         .         .         .         .S        .         .         .         .         .         .
11855 228.         IO        .         .         .         .         .S        .         .         .         .         .         .
11900 229.         IO        .         .         .         .         .S        .         .         .         .         .         .
11905 230.         IO        .         .         .         .         .S        .         .         .         .         .         .
11910 231. . . . . IO. . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232.         I         .         .         .         .         .S        .         .         .         .         .         .
```

```
11920 233.        I         .         .         .         .         .S        .         .         .         .         .
11925 234.        I         .         .         .         .         .S        .         .         .         .         .
11930 235.        I         .         .         .         .         .S        .         .         .         .         .
11935 236.        I         .         .         .         .         .S        .         .         .         .         .
11940 237.        I         .         .         .         .         .S        .         .         .         .         .
11945 238.        I         .         .         .         .         .S        .         .         .         .         .
11950 239.        I         .         .         .         .         .S        .         .         .         .         .
11955 240.        I         .         .         .         .         .S        .         .         .         .         .
12000 241. . . . . I . . . . . .S. . . . . .
12005 242.        I         .         .         .         .         .S        .         .         .         .         .
12010 243.        I         .         .         .         .         .S        .         .         .         .         .
12015 244.        I         .         .         .         .         .S        .         .         .         .         .
12020 245.        I         .         .         .         .         .S        .         .         .         .         .
12025 246.        I         .         .         .         .         .S        .         .         .         .         .
12030 247.        I         .         .         .         .         .S        .         .         .         .         .
12035 248.        I         .         .         .         .         .S        .         .         .         .         .
12040 249.        I         .         .         .         .         .S        .         .         .         .         .
12045 250.        I         .         .         .         .         .S        .         .         .         .         .
12050 251. . . . . I . . . . . .S. . . . . .
12055 252.        I         .         .         .         .         .S        .         .         .         .         .
12100 253.        I         .         .         .         .         .S        .         .         .         .         .
12105 254.        I0        .         .         .         .         .S        .         .         .         .         .
12110 255.        I.        .         .         .         .         .S        .         .         .         .         .
12115 256.        I.        .         .         .         .         .S        .         .         .         .         .
12120 257.        I.        .         .         .         .         .S        .         .         .         .         .
12125 258.        I.        .         .         .         .         .S        .         .         .         .         .
12130 259.        I.        .         .         .         .         .S        .         .         .         .         .
12135 260.        I.        .         .         .         .         S         .         .         .         .         .
12140 261. . . . . I. . . . . S . . . . . .
12145 262.        I.        .         .         .         .         S         .         .         .         .         .
12150 263.        I.        .         .         .         .         S         .         .         .         .         .
12155 264.        I.        .         .         .         .         S         .         .         .         .         .
12200 265.        I.        .         .         .         .         S         .         .         .         .         .
12205 266.        I.        .         .         .         .         S         .         .         .         .         .
12210 267.        I.        .         .         .         .         S         .         .         .         .         .
12215 268.        I.        .         .         .         .         S         .         .         .         .         .
12220 269.        I.        .         .         .         .         S         .         .         .         .         .
12225 270.        I.        .         .         .         .         S         .         .         .         .         .
12230 271. . . . . I. . . . . S . . . . . .
12235 272.        I.        .         .         .         .         S         .         .         .         .         .
12240 273.        I.        .         .         .         .         S         .         .         .         .         .
12245 274.        I.        .         .         .         .         S         .         .         .         .         .
12250 275.        I.        .         .         .         .         S         .         .         .         .         .
12255 276.        I.        .         .         .         .         S         .         .         .         .         .
12300 277.        I.        .         .         .         .         S         .         .         .         .         .
12305 278.        I.        .         .         .         .         S         .         .         .         .         .
12310 279.        I.        .         .         .         .         S         .         .         .         .         .
12315 280.        I.        .         .         .         .         S         .         .         .         .         .
12320 281. . . . . I. . . . . S . . . . . .
12325 282.        I.        .         .         .         .         S         .         .         .         .         .
12330 283.        I.        .         .         .         .         S         .         .         .         .         .
12335 284.        I.        .         .         .         .         S         .         .         .         .         .
12340 285.        I.        .         .         .         .         S         .         .         .         .         .
12345 286.        I.        .         .         .         .         S         .         .         .         .         .
12350 287.        I.        .         .         .         .         S         .         .         .         .         .
12355 288.--------I.---------.---------.---------.---------.---------S---------.---------.---------.---------.---------.---------
```

LETTER OF TRANSMITTAL

DeLEUW
CATHER
DeLeuw Cather & Company
Interstate Corporate Center II
2323 West 14th Street, Suite 616
Tempe, Arizona 85281-6953 (602) 921-7887

DATE 3/21/91 | JOB NO. 3731-22

ATTENTION James Hubbard, P.E.

RE: Hydrology North of Outer Loop Highway

DR-M-126

TO Kaminski Hubbard Engineering, Inc.
4550 North Black Canyon Highway
Suite C
Phoenix, AZ 85017

COPIES	DATE	NO.	DESCRIPTION
1			Drainage Report Scatter Wash and Outer Loop Highway Interceptor Drain
1			Hydrology Report OLH Bell Road to CAP Canal Crossing
1			HEC-1 Model 7th Street to 20th Street
1		Set	Strip Maps

THESE ARE TRANSMITTED as checked below:

- ☐ For approval
- ☐ For your use
- ☒ As requested
- ☐ For review and comment
- ☐ For your information
- ☐ _____

REMARKS: Here is the hydrologic information you requested in conjunction with your contract with the Flood Control District.

Please call if you have any questions regarding this information.

cc: F. Medina, ADOT
R. Jordan, ADOT
J. Melanson, DCCO

SIGNED: J. M. Kaynak Jr

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***

          **************
          *            *
279 KK    *    CB11B   *
          *            *
          **************

280 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          2  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE


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

          **************
          *            *
279 KK    *    CB11B   *
          *            *
          **************

282 KO         OUTPUT CONTROL VARIABLES
                    IPRNT          1  PRINT CONTROL
                    IPLOT          2  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

283 HC         HYDROGRAPH COMBINATION
                    ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                    ***

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

                                    HYDROGRAPH AT STATION    CB11B
                                         SUM OF  3 HYDROGRAPHS

*****************************************************************************************************************************
```

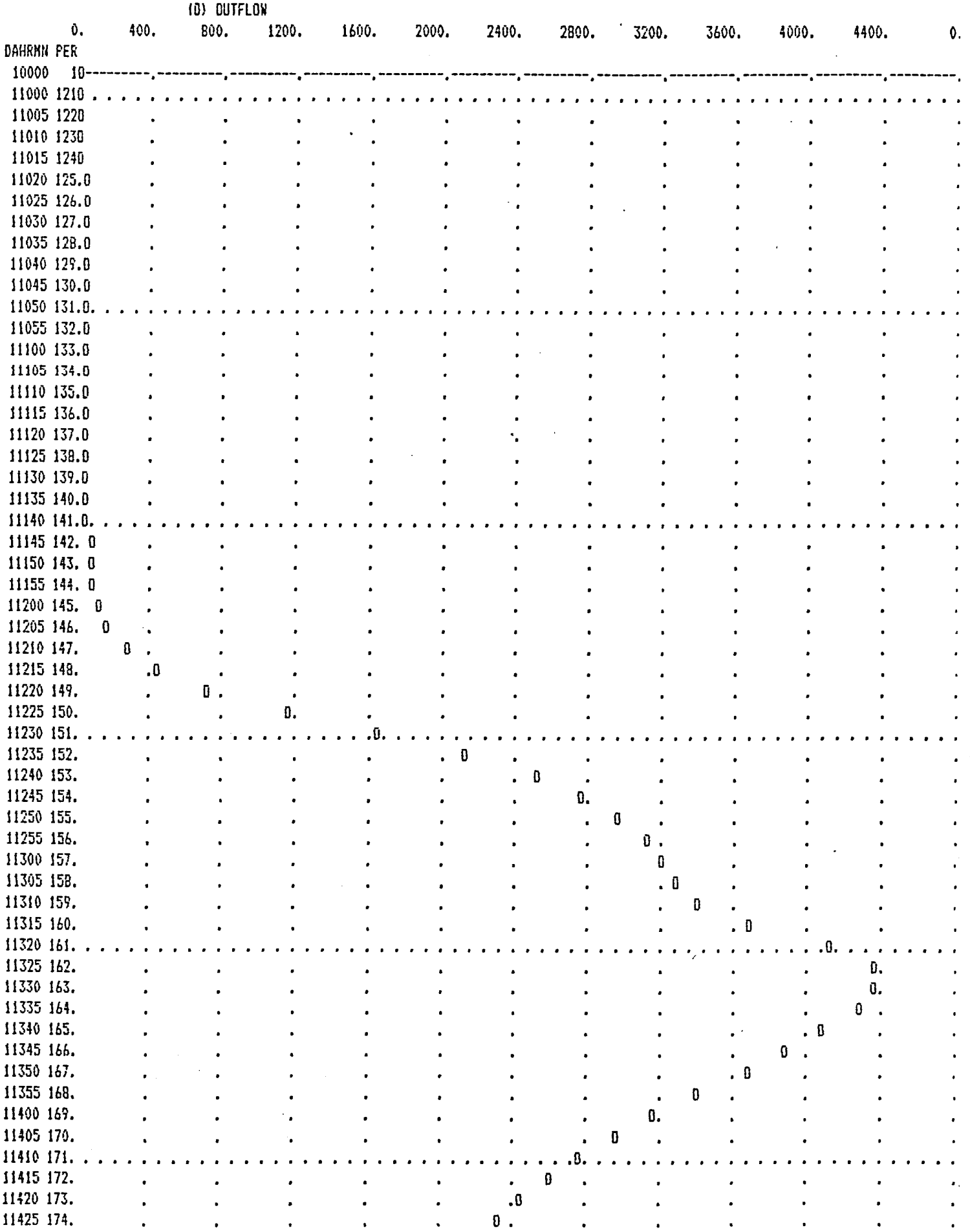
DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW	*	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	*	1		0600	73	6.	*	1		1200	145	123.	*	1		1800	217	643.
1		0005	2	0.	*	1		0605	74	7.	*	1		1205	146	176.	*	1		1805	218	637.
1		0010	3	0.	*	1		0610	75	7.	*	1		1210	147	273.	*	1		1810	219	630.
1		0015	4	0.	*	1		0615	76	7.	*	1		1215	148	447.	*	1		1815	220	624.
1		0020	5	0.	*	1		0620	77	7.	*	1		1220	149	737.	*	1		1820	221	619.
1		0025	6	0.	*	1		0625	78	7.	*	1		1225	150	1156.	*	1		1825	222	613.
1		0030	7	0.	*	1		0630	79	7.	*	1		1230	151	1652.	*	1		1830	223	608.
1		0035	8	0.	*	1		0635	80	7.	*	1		1235	152	2126.	*	1		1835	224	602.
1		0040	9	0.	*	1		0640	81	7.	*	1		1240	153	2502.	*	1		1840	225	597.
1		0045	10	0.	*	1		0645	82	7.	*	1		1245	154	2776.	*	1		1845	226	592.
1		0050	11	0.	*	1		0650	83	7.	*	1		1250	155	2972.	*	1		1850	227	587.
1		0055	12	0.	*	1		0655	84	7.	*	1		1255	156	3104.	*	1		1855	228	583.

1	0100	13	0.	*	1	0700	85	7.	*	1	1300	157	3205.	*	1	1900	229	578.
1	0105	14	0.	*	1	0705	86	7.	*	1	1305	158	3274.	*	1	1905	230	573.
1	0110	15	0.	*	1	0710	87	8.	*	1	1310	159	3389.	*	1	1910	231	569.
1	0115	16	0.	*	1	0715	88	8.	*	1	1315	160	3670.	*	1	1915	232	564.
1	0120	17	0.	*	1	0720	89	8.	*	1	1320	161	4115.	*	1	1920	233	560.
1	0125	18	0.	*	1	0725	90	8.	*	1	1325	162	4352.	*	1	1925	234	556.
1	0130	19	0.	*	1	0730	91	8.	*	1	1330	163	4375.	*	1	1930	235	552.
1	0135	20	0.	*	1	0735	92	8.	*	1	1335	164	4274.	*	1	1935	236	548.
1	0140	21	0.	*	1	0740	93	8.	*	1	1340	165	4089.	*	1	1940	237	544.
1	0145	22	0.	*	1	0745	94	9.	*	1	1345	166	3896.	*	1	1945	238	540.
1	0150	23	0.	*	1	0750	95	9.	*	1	1350	167	3662.	*	1	1950	239	535.
1	0155	24	1.	*	1	0755	96	9.	*	1	1355	168	3412.	*	1	1955	240	531.
1	0200	25	1.	*	1	0800	97	9.	*	1	1400	169	3178.	*	1	2000	241	527.
1	0205	26	1.	*	1	0805	98	9.	*	1	1405	170	2962.	*	1	2005	242	523.
1	0210	27	1.	*	1	0810	99	9.	*	1	1410	171	2771.	*	1	2010	243	519.
1	0215	28	1.	*	1	0815	100	10.	*	1	1415	172	2603.	*	1	2015	244	516.
1	0220	29	2.	*	1	0820	101	10.	*	1	1420	173	2454.	*	1	2020	245	513.
1	0225	30	2.	*	1	0825	102	10.	*	1	1425	174	2320.	*	1	2025	246	510.
1	0230	31	2.	*	1	0830	103	10.	*	1	1430	175	2199.	*	1	2030	247	508.
1	0235	32	3.	*	1	0835	104	10.	*	1	1435	176	2089.	*	1	2035	248	505.
1	0240	33	3.	*	1	0840	105	11.	*	1	1440	177	1989.	*	1	2040	249	502.
1	0245	34	3.	*	1	0845	106	11.	*	1	1445	178	1897.	*	1	2045	250	500.
1	0250	35	3.	*	1	0850	107	11.	*	1	1450	179	1815.	*	1	2050	251	497.
1	0255	36	4.	*	1	0855	108	11.	*	1	1455	180	1740.	*	1	2055	252	495.
1	0300	37	4.	*	1	0900	109	12.	*	1	1500	181	1672.	*	1	2100	253	492.
1	0305	38	4.	*	1	0905	110	12.	*	1	1505	182	1610.	*	1	2105	254	490.
1	0310	39	4.	*	1	0910	111	12.	*	1	1510	183	1551.	*	1	2110	255	488.
1	0315	40	4.	*	1	0915	112	13.	*	1	1515	184	1497.	*	1	2115	256	486.
1	0320	41	4.	*	1	0920	113	13.	*	1	1520	185	1446.	*	1	2120	257	483.
1	0325	42	5.	*	1	0925	114	13.	*	1	1525	186	1398.	*	1	2125	258	481.
1	0330	43	5.	*	1	0930	115	14.	*	1	1530	187	1351.	*	1	2130	259	479.
1	0335	44	5.	*	1	0935	116	14.	*	1	1535	188	1305.	*	1	2135	260	477.
1	0340	45	5.	*	1	0940	117	15.	*	1	1540	189	1260.	*	1	2140	261	475.
1	0345	46	5.	*	1	0945	118	15.	*	1	1545	190	1215.	*	1	2145	262	473.
1	0350	47	5.	*	1	0950	119	16.	*	1	1550	191	1173.	*	1	2150	263	471.
1	0355	48	5.	*	1	0955	120	17.	*	1	1555	192	1133.	*	1	2155	264	469.
1	0400	49	5.	*	1	1000	121	17.	*	1	1600	193	1094.	*	1	2200	265	467.
1	0405	50	5.	*	1	1005	122	18.	*	1	1605	194	1057.	*	1	2205	266	465.
1	0410	51	5.	*	1	1010	123	19.	*	1	1610	195	1021.	*	1	2210	267	463.
1	0415	52	5.	*	1	1015	124	19.	*	1	1615	196	985.	*	1	2215	268	462.
1	0420	53	5.	*	1	1020	125	20.	*	1	1620	197	951.	*	1	2220	269	460.
1	0425	54	5.	*	1	1025	126	21.	*	1	1625	198	918.	*	1	2225	270	458.
1	0430	55	5.	*	1	1030	127	22.	*	1	1630	199	888.	*	1	2230	271	456.
1	0435	56	6.	*	1	1035	128	24.	*	1	1635	200	861.	*	1	2235	272	455.
1	0440	57	6.	*	1	1040	129	25.	*	1	1640	201	837.	*	1	2240	273	453.
1	0445	58	6.	*	1	1045	130	26.	*	1	1645	202	815.	*	1	2245	274	451.
1	0450	59	6.	*	1	1050	131	28.	*	1	1650	203	796.	*	1	2250	275	450.
1	0455	60	6.	*	1	1055	132	29.	*	1	1655	204	778.	*	1	2255	276	448.
1	0500	61	6.	*	1	1100	133	31.	*	1	1700	205	762.	*	1	2300	277	446.
1	0505	62	6.	*	1	1105	134	33.	*	1	1705	206	747.	*	1	2305	278	445.
1	0510	63	6.	*	1	1110	135	36.	*	1	1710	207	734.	*	1	2310	279	443.
1	0515	64	6.	*	1	1115	136	38.	*	1	1715	208	722.	*	1	2315	280	442.
1	0520	65	6.	*	1	1120	137	41.	*	1	1720	209	710.	*	1	2320	281	440.
1	0525	66	6.	*	1	1125	138	44.	*	1	1725	210	700.	*	1	2325	282	438.
1	0530	67	6.	*	1	1130	139	48.	*	1	1730	211	690.	*	1	2330	283	437.
1	0535	68	6.	*	1	1135	140	52.	*	1	1735	212	681.	*	1	2335	284	435.
1	0540	69	6.	*	1	1140	141	58.	*	1	1740	213	673.	*	1	2340	285	434.
1	0545	70	6.	*	1	1145	142	65.	*	1	1745	214	665.	*	1	2345	286	432.
1	0550	71	6.	*	1	1150	143	76.	*	1	1750	215	657.	*	1	2350	287	431.
1	0555	72	6.	*	1	1155	144	92.	*	1	1755	216	650.	*	1	2355	288	430.

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
				6-HR	24-HR	72-HR	23.92-HR
+	(CFS)	(HR)					
			(CFS)				
+	4375.	13.50		1795.	577.	577.	577.
			(INCHES)	1.234	1.583	1.583	1.583
			(AC-FT)	890.	1141.	1141.	1141.

CUMULATIVE AREA = 13.52 SQ MI

STATION CB11B



```
11430 175.        .         .         .         .         .   0     .         .         .         .         .         .         .
11435 176.        .         .         .         .         . 0       .         .         .         .         .         .         .
11440 177.        .         .         .         .         0         .         .         .         .         .         .         .
11445 178.        .         .         .         .       0 .         .         .         .         .         .         .         .
11450 179.        .         .         .         .     0   .         .         .         .         .         .         .         .
11455 180.        .         .         .         .   0     .         .         .         .         .         .         .         .
11500 181. . . . . . . . . . . . . . . . . . . . 0 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11505 182.        .         .         .       0         .         .         .         .         .         .         .         .
11510 183.        .         .         .      0.         .         .         .         .         .         .         .         .
11515 184.        .         .         .    0   .         .         .         .         .         .         .         .         .
11520 185.        .         .         .   0    .         .         .         .         .         .         .         .         .
11525 186.        .         .         .  0     .         .         .         .         .         .         .         .         .
11530 187.        .         .         . 0      .         .         .         .         .         .         .         .         .
11535 188.        .         .         .0       .         .         .         .         .         .         .         .         .
11540 189.        .         .        .0        .         .         .         .         .         .         .         .         .
11545 190.        .         .        0         .         .         .         .         .         .         .         .         .
11550 191. . . . . . . . . . . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.        .         .      0 .         .         .         .         .         .         .         .         .         .
11600 193.        .         .     0  .         .         .         .         .         .         .         .         .         .
11605 194.        .         .    0   .         .         .         .         .         .         .         .         .         .
11610 195.        .         .    0   .         .         .         .         .         .         .         .         .         .
11615 196.        .         .   0    .         .         .         .         .         .         .         .         .         .
11620 197.        .         .  0     .         .         .         .         .         .         .         .         .         .
11625 198.        .         . 0      .         .         .         .         .         .         .         .         .         .
11630 199.        .         .0       .         .         .         .         .         .         .         .         .         .
11635 200.        .         .0       .         .         .         .         .         .         .         .         .         .
11640 201. . . . . . . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.        .        0         .         .         .         .         .         .         .         .         .         .
11650 203.        .        0         .         .         .         .         .         .         .         .         .         .
11655 204.        .       0.         .         .         .         .         .         .         .         .         .         .
11700 205.        .       0.         .         .         .         .         .         .         .         .         .         .
11705 206.        .       0.         .         .         .         .         .         .         .         .         .         .
11710 207.        .      0 .         .         .         .         .         .         .         .         .         .         .
11715 208.        .      0 .         .         .         .         .         .         .         .         .         .         .
11720 209.        .      0 .         .         .         .         .         .         .         .         .         .         .
11725 210.        .      0 .         .         .         .         .         .         .         .         .         .         .
11730 211. . . . . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.        .     0  .         .         .         .         .         .         .         .         .         .         .
11740 213.        .     0  .         .         .         .         .         .         .         .         .         .         .
11745 214.        .     0  .         .         .         .         .         .         .         .         .         .         .
11750 215.        .    0   .         .         .         .         .         .         .         .         .         .         .
11755 216.        .    0   .         .         .         .         .         .         .         .         .         .         .
11800 217.        .    0   .         .         .         .         .         .         .         .         .         .         .
11805 218.        .    0   .         .         .         .         .         .         .         .         .         .         .
11810 219.        .    0   .         .         .         .         .         .         .         .         .         .         .
11815 220.        .    0   .         .         .         .         .         .         .         .         .         .         .
11820 221. . . . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.        .   0    .         .         .         .         .         .         .         .         .         .         .
11830 223.        .   0    .         .         .         .         .         .         .         .         .         .         .
11835 224.        .   0    .         .         .         .         .         .         .         .         .         .         .
11840 225.        .   0    .         .         .         .         .         .         .         .         .         .         .
11845 226.        .   0    .         .         .         .         .         .         .         .         .         .         .
11850 227.        .   0    .         .         .         .         .         .         .         .         .         .         .
11855 228.        .   0    .         .         .         .         .         .         .         .         .         .         .
11900 229.        .  0     .         .         .         .         .         .         .         .         .         .         .
11905 230.        .  0     .         .         .         .         .         .         .         .         .         .         .
11910 231. . . . . . . 0 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232.        .  0     .         .         .         .         .         .         .         .         .         .         .
11920 233.        .  0     .         .         .         .         .         .         .         .         .         .         .
11925 234.        .  0     .         .         .         .         .         .         .         .         .         .         .
```

```
11930 235.         .   0     .         .         .         .         .         .         .         .         .         .         .
11935 236.         .   0     .         .         .         .         .         .         .         .         .         .         .
11940 237.         .   0     .         .         .         .         .         .         .         .         .         .         .
11945 238.         .  0      .         .         .         .         .         .         .         .         .         .         .
11950 239.         .  0      .         .         .         .         .         .         .         .         .         .         .
11955 240.         .  0      .         .         .         .         .         .         .         .         .         .         .
12000 241. . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12005 242.         .  0      .         .         .         .         .         .         .         .         .         .         .
12010 243.         .  0      .         .         .         .         .         .         .         .         .         .         .
12015 244.         .  0      .         .         .         .         .         .         .         .         .         .         .
12020 245.         .  0      .         .         .         .         .         .         .         .         .         .         .
12025 246.         .  0      .         .         .         .         .         .         .         .         .         .         .
12030 247.         .  0      .         .         .         .         .         .         .         .         .         .         .
12035 248.         .  0      .         .         .         .         .         .         .         .         .         .         .
12040 249.         .  0      .         .         .         .         .         .         .         .         .         .         .
12045 250.         . 0       .         .         .         .         .         .         .         .         .         .         .
12050 251. . . . . . 0 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12055 252.         . 0       .         .         .         .         .         .         .         .         .         .         .
12100 253.         . 0       .         .         .         .         .         .         .         .         .         .         .
12105 254.         . 0       .         .         .         .         .         .         .         .         .         .         .
12110 255.         . 0       .         .         .         .         .         .         .         .         .         .         .
12115 256.         . 0       .         .         .         .         .         .         .         .         .         .         .
12120 257.         . 0       .         .         .         .         .         .         .         .         .         .         .
12125 258.         . 0       .         .         .         .         .         .         .         .         .         .         .
12130 259.         . 0       .         .         .         .         .         .         .         .         .         .         .
12135 260.         . 0       .         .         .         .         .         .         .         .         .         .         .
12140 261. . . . . . 0 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 262.         . 0       .         .         .         .         .         .         .         .         .         .         .
12150 263.         . 0       .         .         .         .         .         .         .         .         .         .         .
12155 264.         . 0       .         .         .         .         .         .         .         .         .         .         .
12200 265.         . 0       .         .         .         .         .         .         .         .         .         .         .
12205 266.         . 0       .         .         .         .         .         .         .         .         .         .         .
12210 267.         . 0       .         .         .         .         .         .         .         .         .         .         .
12215 268.         . 0       .         .         .         .         .         .         .         .         .         .         .
12220 269.         .0        .         .         .         .         .         .         .         .         .         .         .
12225 270.         .0        .         .         .         .         .         .         .         .         .         .         .
12230 271. . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 272.         .0        .         .         .         .         .         .         .         .         .         .         .
12240 273.         .0        .         .         .         .         .         .         .         .         .         .         .
12245 274.         .0        .         .         .         .         .         .         .         .         .         .         .
12250 275.         .0        .         .         .         .         .         .         .         .         .         .         .
12255 276.         .0        .         .         .         .         .         .         .         .         .         .         .
12300 277.         .0        .         .         .         .         .         .         .         .         .         .         .
12305 278.         .0        .         .         .         .         .         .         .         .         .         .         .
12310 279.         .0        .         .         .         .         .         .         .         .         .         .         .
12315 280.         .0        .         .         .         .         .         .         .         .         .         .         .
12320 281. . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 282.         .0        .         .         .         .         .         .         .         .         .         .         .
12330 283.         .0        .         .         .         .         .         .         .         .         .         .         .
12335 284.         .0        .         .         .         .         .         .         .         .         .         .         .
12340 285.         .0        .         .         .         .         .         .         .         .         .         .         .
12345 286.         .0        .         .         .         .         .         .         .         .         .         .         .
12350 287.         .0        .         .         .         .         .         .         .         .         .         .         .
12355 288.---------.0--------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------.
```

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	NSW1	2087.	12.25	289.	81.	81.	1.37		
+	ROUTED TO	RNSW1	96.	14.08	95.	46.	46.	1.37		
+									19.29	14.08
+	ROUTED TO	KNSW1	96.	14.58	94.	44.	44.	1.37		
+	HYDROGRAPH AT	NSW2	1315.	12.50	243.	68.	68.	1.33		
+	2 COMBINED AT	C1	1370.	12.50	328.	112.	112.	2.70		
+	ROUTED TO	RC1	1319.	12.67	325.	110.	110.	2.70		
+	HYDROGRAPH AT	NSW3	818.	12.25	113.	32.	32.	.54		
+	ROUTED TO	RNSW1	43.	13.83	42.	21.	21.	.54		
+									18.30	13.83
+	ROUTED TO	KNSW3	43.	14.75	42.	19.	19.	.54		
+	HYDROGRAPH AT	NSW4	1294.	12.50	239.	67.	67.	1.52		
+	HYDROGRAPH AT	NSW5	1589.	12.42	258.	72.	72.	1.17		
+	ROUTED TO	RNSW5	113.	13.83	110.	53.	53.	1.17		
+									20.99	13.83
+	ROUTED TO	KNSW5	113.	14.50	110.	50.	50.	1.17		
+	HYDROGRAPH AT	NSW6	512.	12.50	95.	27.	27.	.60		
+	5 COMBINED AT	C2	3097.	12.58	791.	272.	272.	6.53		
+	ROUTED TO	RC2	2497.	12.83	787.	272.	272.	6.53		
+									19.05	12.83

	ROUTED TO								
+		KRC2	2477.	12.92	788.	271.	271.	6.53	
	HYDROGRAPH AT								
+		NSW7	1167.	12.42	192.	54.	54.	.96	
	ROUTED TO								
+		RNSW7	73.	14.08	71.	34.	34.	.96	
+									19.55 14.08
	ROUTED TO								
+		KNSW7	72.	15.08	71.	31.	31.	.96	
	HYDROGRAPH AT								
+		NSW8	947.	12.58	195.	54.	54.	1.23	
	3 COMBINED AT								
+		C3	3210.	12.83	1039.	357.	357.	8.72	
	ROUTED TO								
+		RC3	2792.	13.08	1037.	356.	356.	8.72	
+									13.73 13.08
	DIVERSION TO								
+		SSW	1298.	13.08	826.	303.	303.	8.72	
	HYDROGRAPH AT								
+		DSSW	1494.	13.08	211.	53.	53.	8.72	
	DIVERSION TO								
+		I17	282.	13.08	25.	6.	6.	8.72	
	HYDROGRAPH AT								
+		DI17	1212.	13.08	186.	47.	47.	8.72	
	HYDROGRAPH AT								
+		NSW9	540.	12.25	75.	21.	21.	.38	
	ROUTED TO								
+		RNSW9	11.	16.83	11.	6.	6.	.38	
+									19.45 17.17
	ROUTED TO								
+		KNSW9	11.	18.58	11.	5.	5.	.38	
	HYDROGRAPH AT								
+		SSW1	848.	12.67	196.	55.	55.	1.24	
	3 COMBINED AT								
+		C4	1842.	13.00	389.	106.	106.	10.34	
	DIVERSION TO								
+		DDC4	510.	13.00	217.	63.	63.	10.34	
	HYDROGRAPH AT								
+		DC4	1332.	13.00	172.	43.	43.	10.34	
	HYDROGRAPH AT								
+		SSW2	424.	12.25	59.	18.	18.	.28	

	2 COMBINED AT								
+		C5	1398.	13.00	231.	61.	61.	10.62	
	DIVERSION TO								
+		DC5	115.	13.00	48.	15.	15.	10.62	
	HYDROGRAPH AT								
+		DC5	1283.	13.00	183.	46.	46.	10.62	
	HYDROGRAPH AT								
+		SSW3	636.	12.33	95.	29.	29.	.39	
	2 COMBINED AT								
+		C6	1398.	13.00	278.	75.	75.	11.01	
	DIVERSION TO								
+		DC6	156.	13.00	66.	22.	22.	11.01	
	HYDROGRAPH AT								
+		DC6	1242.	13.00	212.	53.	53.	11.01	
	HYDROGRAPH AT								
+		RI17	282.	13.08	25.	6.	6.	.00	
	2 COMBINED AT								
+		C8	1458.	13.08	237.	59.	59.	11.01	
	ROUTED TO								
+		RES4	1185.	13.25	114.	29.	29.	11.01	
+									98.16 13.25
	HYDROGRAPH AT								
+		RDC5	115.	12.00 ✓	48.	15.	15.	.00	
	HYDROGRAPH AT								
+		RDC6	156.	11.92 ✓	66.	22.	22.	.00	
	3 COMBINED AT								
+		C7	1456.	13.25 ✓	227.	65.	65.	11.01	
	ROUTED TO								
+		RTC8	1436.	13.42	234.	67.	67.	11.01	
	HYDROGRAPH AT								
+		RNSW	1298.	13.08	826.	303.	303.	.00	
	HYDROGRAPH AT								
+		RSSW	510.	12.42	217.	63.	63.	.00	
	HYDROGRAPH AT								
+		311A	368.	12.25	50.	14.	14.	.20	
	3 COMBINED AT								
+		CB	1860.	13.00	1086.	380.	380.	.20	
	ROUTED TO								
+		RTC7	1851.	13.17	1080.	376.	376.	.20	
	HYDROGRAPH AT								

+		211A	417.	12.83	113.	32.	32.	.45
	HYDROGRAPH AT							
+		411A	118.	13.25	42.	12.	12.	.21
	4 COMBINED AT							
+		C9	3723.	13.25	1458.	486.	486.	11.87
	ROUTED TO							
+		RTC9	3647.	13.50	1453.	480.	480.	11.87
	HYDROGRAPH AT							
+		111A	384.	14.00	191.	55.	55.	.95
	HYDROGRAPH AT							
+		P12	144.	12.75	34.	10.	10.	.17
	3 COMBINED AT							
+		C10	4051.	13.50	1676.	544.	544.	12.99
	HYDROGRAPH AT							
+		DA11D	85.	13.08	26.	7.	7.	.13
	ROUTED TO							
+		RT11D	85.	13.08	26.	7.	7.	.13
	HYDROGRAPH AT							
+		DA11C	125.	13.33	46.	13.	13.	.22
	2 COMBINED AT							
+		CB11C	207.	13.17	72.	20.	20.	.35
	ROUTED TO							
+		RT11C	207.	13.25	72.	20.	20.	.35
	HYDROGRAPH AT							
+		DA11B	132.	13.25	48.	13.	13.	.18
	3 COMBINED AT							
+		CB11B	4375.	13.50	1795.	577.	577.	13.52

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

APPENDIX B

SCATTER WASH
WITH OUTER LOOP IMPROVEMENTS

****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1.1985

U.S. ARMY CORPS OF ENGINEERS. THE HYDROLOGIC ENGINEERING CENTER. 609 SECOND STREET. DAVIS. CA. 95616

****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS. AND THE NUMBER OF PLANS ARE REDUCED TO 3

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

  1           ID        SCATTER WASH DRAINAGE AND STORM DRAIN STUDY
  2           ID        GREINER, INC., MODIFIED BY DCCO FOR THE HYDROGRAPH AT 35TH AVE
  3           ID        PROJECT  CONDITIONS,   100-YR, 24-HR STORM       FILE: S5N.DA
  4           IT      5                    288
  5           IO      5

  6           KK    NSW1
  7           KM    CALCULATE RUNOFF FROM DA NSW1
  8           PH                    0.68    1.37    2.40    2.65    2.82    3.14    3.51    3.90
  9           BA    1.37
 10           LS            83
 11           UD    0.29

 12           KK   RNSW1
 13           KM    ROUTE FLOW THRU CAP STRUCTURE
 14           RS      1    STOR       0
 15           SV      0       4      17      52      96     148     209     279
 16           SE     15      16      17      18      19      20      21      22
 17           SL     15    9.62     0.6     0.5
 18           SS   21.9      50     3.0     1.5

 19           KK   KNSW1
 20           KM    ROUTE CULVERT DISCHARGE TO HAPPY VALLEY ROAD AND I-17
 21           RK    8000  0.0091    0.03              0              20

 22           KK    NSW2
 23           KM    CALCULATE RUNOFF FROM DA NSW2
 24           BA    1.33
 25           LS          79.32
 26           UD    0.48

 27           KK      C1
 28           KM    COMBINE HYDROGRAPHS NSW1 AND NSW2
 29           HC      2

 30           KK     RC1
 31           KM    ROUTE HYDROGRAPH C1 TO PINNACLE PEAK ROAD
 32           RK    4000  0.0078    0.03              0      20     150

 33           KK    NSW3
 34           KM    CALCULATE RUNOFF FROM DA NSW3
 35           BA    0.54
 36           LS           82.7
 37           UD    0.29

 38           KK   RNSW1
 39           KM    ROUTE FLOW THRU CAP STRUCTURE
 40           RS      1    STOR       0
 41           SV      0       2      11      34      62      96     135     180
 42           SE     15      16      17      18      19      20      21      22
 43           SL     15    4.91     0.6     0.5
 44           SS   21.9      50     3.0     1.5
```

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

 45           KK   KNSW3
 46           KM    ROUTE CULVERT DISCHARGE TO PINNACLE PEAK ROAD AT I-17
 47           RK   11000  0.0095    0.03              0             20

 48           KK    NSW4
 49           KM    CALCULATE RUNOFF FROM DA NSW4
 50           BA    1.52
 51           LS          75.78
 52           UD    0.47

 53           KK    NSW5
 54           KM    CALCULATE RUNOFF FROM DA NSW5
 55           BA    1.17
 56           LS           84.3
 57           UD    0.39

 58           KK   RNSW5
 59           KM    ROUTE FLOW THRU CAP STRUCTURE
 60           RS      1    STOR       0
 61           SV      0       2       7      24      43      67      95     127
 62           SE     15      16      17      18      19      20      21      22
 63           SL     15    9.62     0.6     0.5
 64           SS   21.9      50     3.0     1.5

 65           KK   KNSW5
 66           KM    ROUTE CULVERT DISCHARGE TO PINNACLE PEAK ROAD AT I-17
 67           RK   10000  0.0095    0.03              0             20

 68           KK    NSW6
 69           KM    CALCULATE RUNOFF FROM DA NSW6
 70           BA     0.6
 71           LS          75.95
 72           UD    0.48

 73           KK      C2
 74           KM    COMBINE HYDROGRAPHS C1, NSW3, NSW4, NSW5, NSW6
 75           HC      5

 76           KK     RC2
 77           KO      0       2
 78           KM    ROUTE FLOW THRU PINNACLE PEAK ROAD CULVERTS
 79           RS      1    STOR       0
 80           SV      0     .05     1.2     9.1    35.6      65    94.5     139
 81           SE     11      12      14      16      18      19      20      21
 82           SQ      0      54     254     528     936    2344    5278   10401

 83           KK    KRC2
 84           KM    ROUTE CULVERT OUTFLOW TO I-17 CULVERTS
 85           RK    1800  0.0023    0.03              0      20      10
```

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

 86           KK   NSW7
 87           KM   CALCULATE RUNOFF FROM DA NSW7
 88           BA   0.96
 89           LS          81.6
 90           UD    0.4

 91           KK  RNSW7
 92           KM   ROUTE FLOW THRU CAP STRUCTURE
 93           RS     1    STOR      0
 94           SV     0      2      9     30     55     85    120    160
 95           SE    15     16     17     18     19     20     21     22
 96           SL    15   7.07    0.6    0.5
 97           SS  21.9     50    3.0    1.5

 98           KK  KNSW7
 99           KM   ROUTE CULVERT DISCHARGE TO I-17
100           RK  13000  0.0085    0.03              0              20

101           KK   NSW8
102           KM   CALCULATE RUNOFF FROM DA NSW8
103           BA   1.23
104           LS         75.99
105           UD   0.56

106           KK     C3
107           KM   COMBINE HYDROGRAPHS C2. NSW7. NSW8
108           HC     3

109           KK    RC3
110           KO     0      2
111           KM   ROUTE FLOW THRU DETENTION BEHIND 2-8X7 RCBC AT I-17
112           RS     1    STOR      0
113           SV     0   0.001    .220   1.16   8.44     17     30     49     67     76
114           SE   3.8      4      6      8     10     11     12     13   13.7     14
115           SQ     0      1    176    414    680    880   1091   1593   2678   3746

116           KK   DSSW
117           KM   DIVERT OVERFLOWS SOUTH TO SINGLE CULVERT AT MH PARK. AND WEST ONTO I-17
118           KM   DQ IS Q THRU 2-8X7 CULVERT (MAX 1312 CFS); DI IS TOTAL Q
119           DT    SSW
120           DI     1    880   1091   1593   2678   3746
121           DQ     1    880   1060   1184   1296   1312

122           KK   DI17
123           KM   SEPARATE OUT WEST OVERFLOWS ONTO THE FRONTAGE ROAD AND MAINLINE I-17
124           KM   THESE FLOWS HEAD SOUTH AND EVENTUALLY ENTER THE DEER VALLEY INTERCHANGE
125           KM   REMAINING FLOWS CONTINUE SOUTH TO 6X7 BOX CULVERT ON SCATTER WASH AT I-17
126           DT    I17
127           DI    31    409   1382   2434
128           DQ     0      0    215    840
```

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

 129          KK   NSW9
 130          KM   CALCULATE RUNOFF FROM DA NSW9
 131          BA   0.38
 132          LS          81.1
 133          UD   0.29

 134          KK  RNSW9
 135          KM   ROUTE FLOW THRU CAP STRUCTURE
 136          RS     1   STOR      0
 137          SV     0      1      4     14     26     40     56     75
 138          SE    15     16     17     18     19     20     21     22
 139          SL    15   4.19   0.16    0.5
 140          SS  21.9     50    3.0    1.5

 141          KK  KNSW9
 142          KM   ROUTE CULVERT DISCHARGE TO I-17
 143          RK  14200  0.0078   0.03              0             20

 144          KK   SSW1
 145          KM   CALCULATE RUNOFF FROM DA SSW1
 146          BA   1.24
 147          LS         75.97
 148          UD   0.66

 149          KK     C4
 150          KM   COMBINE HYDROGRAPHS SSW. NSW9 AND SSW1--- SCATTER WASH FLOW EAST OF I-17
 151          HC     3

 152          KK    DC4
 153          KM   DIVERT FLOW ACROSS I-17 THRU 6X7 RCBC (MAX Q 510 CFS)
 154          DT   DDC4
 155          DI     0      1    510    511   1000   2000
 156          DQ     0      1    510    510    510    510

 157          KK   SSW2
 158          KM   CALCULATE RUNOFF FROM DA SSW2
 159          BA   0.28
 160          LS         76.32   30.0
 161          UD   0.29

 162          KK     C5
 163          KM   COMBINE HYDROGRAPHS SSW2 AND DDC4
 164          HC     2

 165          KK    DC5
 166          KM   DIVERT FLOW ACROSS I-17 THRU 65"X40" CMP AT ADOBE
 167          DT    DC5
 168          DI     0    115    116   1000   3000
 169          DQ     1    115    115    115    115
```

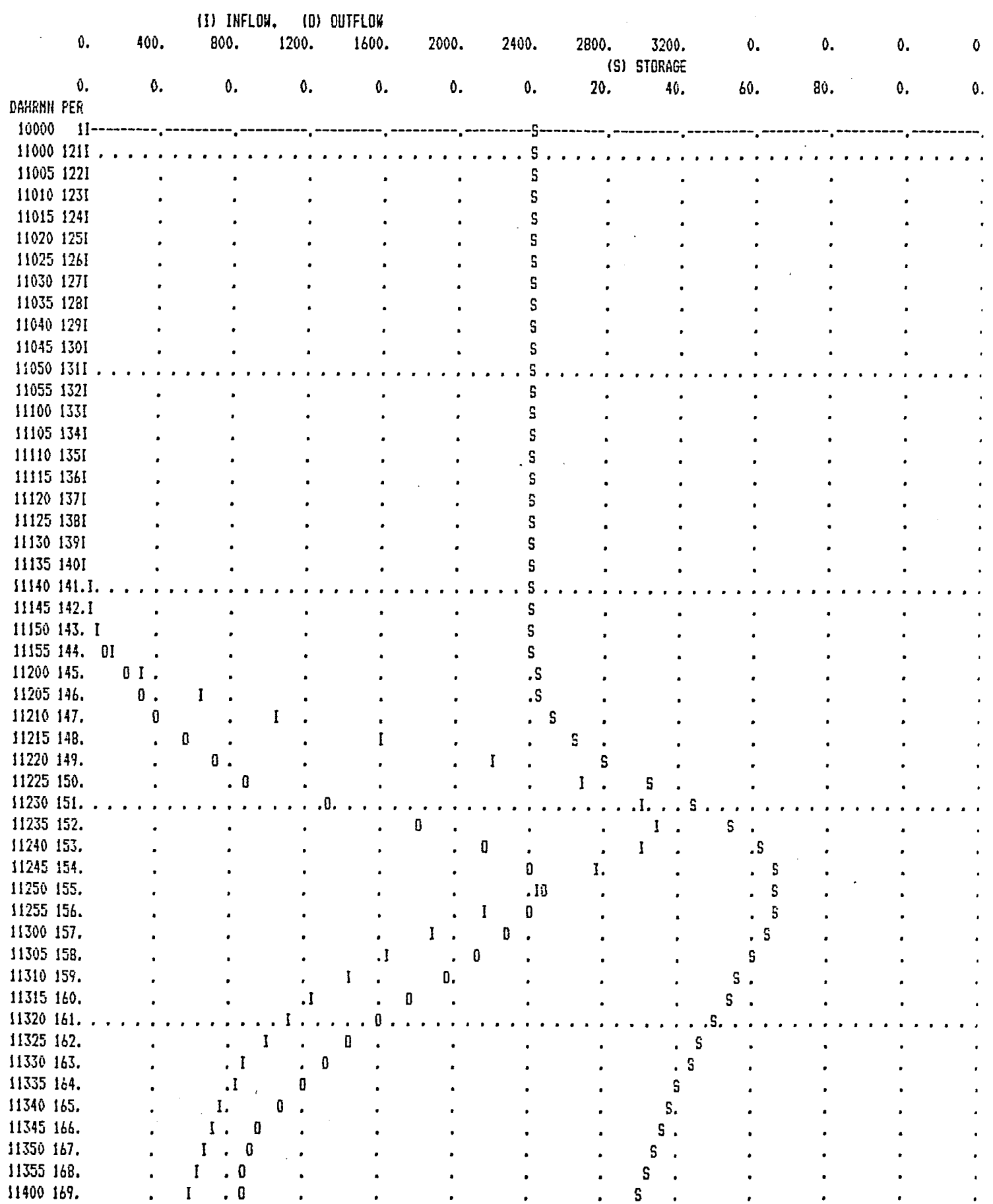
```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 170          KK    SSW3
 171          KM    CALCULATE RUNOFF FROM DA SSW3
 172          BA    0.39
 173          LS          75.45    50.0
 174          UD    0.32

 175          KK     C6
 176          KM    COMBINE HYDROGRAPHS SSW3 AND C5
 177          HC      2

 178          KK     DC6
 179          KM    DIVERT FLOW ACROSS I-17 THRU 6X3 RCBC AT LOUISE
 180          KM    C6 REPRESENTS TOTAL FLOW TO DEPRESSED INTERCHANGE AT DEER VALLEY RD.
 181          DT     DC6
 182          DI      0       1     156     157    1000    3000
 183          DQ      0       1     156     156     156     156

 184          KK    RI17
 185          KM    RETRIEVE HYDROGRAPH OF OVERFLOW ONTO I-17 MEDIAN
 186          DR     I17

 187          KK     C8
 188          KM   COMBINE HYDROGRAPH RI17 AND DC5 FOR TOTAL FLOW INTO DEER VALLEY INTERCHANGE
 189          KM          FROM SCATTER WASH DRAINAGE AREA
 190          HC      2

 191          KK    RES4
 192          KM    ROUTE FLOW THROUGH DEPRESSED SECTION TO WEST SIDE OF I-17
 193          RS      1    STOR       0
 194          SV      0       1    15.9    37.7    53.8    61.3    74.1    99.0   129.5
 195          SE     82      84      90      94      96    96.8      98     100     102
 196          SQ      0       0       0       0       0       1     808    5403   13835

 197          KK    RDC5
 198          KM    RETRIEVE HYDROGRAPH DC5
 199          DR     DC5

 200          KK    RDC6
 201          KM    RETRIEVE HYDROGRAPH DC6
 202          DR     DC6

 203          KK     C7
 204          KM    COMBINE TOTAL SOUTH OF WILLIAMS DR/WEST OF I-17
 205          HC      3

 206          KK    RTC8
 207          KM    ROUTE TO CORNER OF DEER VALLEY AND 31ST
 208          RK    4200  0.0044    .025                    40      20
```

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

 209          KK    RNSW
 210          KM    RETRIEVE HYDROGRAPH FOR NORTH BRANCH OF SCATTER WASH
 211          DR     SSW

 212          KK    RSSW
 213          KM    RETRIEVE HYDROGRAPH FOR SOUTH BRANCH OF SCATTER WASH
 214          DR    DDC4

 215          KK    311A
 216          KM    RUNOFF FROM BASIN 311A EAST OF ADOBE MT.
 217          BA     .20
 218          LS             88
 219          UD     .29

 220          KK      CB
 221          KM    COMBINE TOTAL NORTH OF WILLIAMS DR/WEST OF I-17
 222          HC       3

 223          KK    RTC7
 224          KM    ROUTE TO CORNER OF DEER VALLEY RD AND 31ST AVE.
 225          RK    5000  0.0062    0.03                      0      20

 226          KK    211A
 227          KM    RUNOFF FROM BASIN 211A SO. TO DR VLY W. TO 31ST
 228          BA     .45
 229          LS             88
 230          UD     .86

 231          KK    411A
 232          KM    RUNOFF FROM BASIN 411A NW OF 31ST AND DR VLY
 233          BA     .21
 234          LS             82
 235          UD    1.22

 236          KK      C9
 237          KM    COMBINE TOTAL SW DISCHARGE TO 31ST AND DEER VALLEY
 238          HC       4

 239          KK    RTC9
 240          KM    ROUTE DISCHARGE TO BEARDSLEY ROAD
 241          RK    6200  0.0062    0.03                      0      20

 242          KK    111A
 243          KM    RUNOFF FROM 111A E OF 35TH N OF MOHAWK LN
 244          BA     .95
 245          LS             83
 246          UD    1.90

 247          KK     P12
 248          KM    RUNOFF FROM BASIN P12 E OF SCA WA
 249          BA     .17
 250          LS             82
 251          UD     .72
```

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


 252          KK     C10
 253          KM    COMBINE TOTAL DISCHARGE IN SW N OF 35TH AVE
 254          KO       1       2
 255          HC       3
 256          ZZ
```

```
                                    ****
                    FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
          U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                    ****


                         SCATTER WASH DRAINAGE AND STORM DRAIN STUDY
                         GREINER, INC., MODIFIED BY DCCO FOR THE HYDROGRAPH AT 35TH AVE
                         PROJECT  CONDITIONS,   100-YR, 24-HR STORM       FILE: S5H.DA

  5 IO         OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          0  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

    IT         HYDROGRAPH TIME DATA
                      NMIN          5  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1   0  STARTING DATE
                     ITIME       0000  STARTING TIME
                        NQ        288  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      1   0  ENDING DATE
                    NDTIME       2355  ENDING TIME

                 COMPUTATION INTERVAL     .08 HOURS
                     TOTAL TIME BASE   23.92 HOURS

        ENGLISH UNITS


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


          **************
          *            *
 76 KK    *      RC2   *
          *            *
          **************

 77 KO         OUTPUT CONTROL VARIABLES
                     IPRNT          5  PRINT CONTROL
                     IPLOT          2  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO       54.
               THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
               THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
```

STATION RC2


(I) INFLOW, (O) OUTFLOW
0. 400. 800. 1200. 1600. 2000. 2400. 2800. 3200. 0. 0. 0. 0
(S) STORAGE
0. 0. 0. 0. 0. 0. 0. 20. 40. 60. 80. 0. 0.
DAHRMN PER
10000 11
11000 121
11005 122
11010 123
11015 124
11020 125
11025 126
11030 127
11035 128
11040 129
11045 130
11050 131
11055 132
11100 133
11105 134
11110 135
11115 136
11120 137
11125 138
11130 139
11135 140
11140 141.
11145 142.
11150 143.
11155 144.
11200 145.
11205 146.
11210 147.
11215 148.
11220 149.
11225 150.
11230 151.
11235 152.
11240 153.
11245 154.
11250 155.
11255 156.
11300 157.
11305 158.
11310 159.
11315 160.
11320 161.
11325 162.
11330 163.
11335 164.
11340 165.
11345 166.
11350 167.
11355 168.
11400 169.
11405 170.
11410 171.
11415 172.

```
11420 173.         .  I     O.          .         .         .         .         . S       .         .         .         .         .
11425 174.         . I     O .          .         .         .         .         .S        .         .         .         .         .
11430 175.         . I     O .          .         .         .         .         S         .         .         .         .         .
11435 176.         . I    O  .          .         .         .         .        S.         .         .         .         .         .
11440 177.         .I    O   .          .         .         .         .        S.         .         .         .         .         .
11445 178.         .I    O   .          .         .         .         .       S .         .         .         .         .         .
11450 179.         .I   O    .          .         .         .         .      S  .         .         .         .         .         .
11455 180.         .I   O    .          .         .         .         .      S  .         .         .         .         .         .
11500 181. . . . . .I. .O. . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11505 182.         I   O     .          .         .         .         .     S   .         .         .         .         .         .
11510 183.         I   O     .          .         .         .         .    S    .         .         .         .         .         .
11515 184.         I  O      .          .         .         .         .    S    .         .         .         .         .         .
11520 185.         I  O      .          .         .         .         .  S      .         .         .         .         .         .
11525 186.         I O       .          .         .         .         .  S      .         .         .         .         .         .
11530 187.         I O       .          .         .         .         .  S      .         .         .         .         .         .
11535 188.         IO        .          .         .         .         .  S      .         .         .         .         .         .
11540 189.         IO        .          .         .         .         . S       .         .         .         .         .         .
11545 190.         IO        .          .         .         .         . S       .         .         .         .         .         .
11550 191. . . . . IO. . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.         I         .          .         .         .         . S       .         .         .         .         .         .
11600 193.        IO         .          .         .         .         . S       .         .         .         .         .         .
11605 194.        IO         .          .         .         .         . S       .         .         .         .         .         .
11610 195.        IO         .          .         .         .         . S       .         .         .         .         .         .
11615 196.        IO         .          .         .         .         . S       .         .         .         .         .         .
11620 197.        IO         .          .         .         .         . S       .         .         .         .         .         .
11625 198.        IO         .          .         .         .         .S        .         .         .         .         .         .
11630 199.        I.         .          .         .         .         .S        .         .         .         .         .         .
11635 200.        I.         .          .         .         .         .S        .         .         .         .         .         .
11640 201. . . . .I. . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.        I.         .          .         .         .         .S        .         .         .         .         .         .
11650 203.        I.         .          .         .         .         .S        .         .         .         .         .         .
11655 204.        I.         .          .         .         .         .S        .         .         .         .         .         .
11700 205.        I.         .          .         .         .         .S        .         .         .         .         .         .
11705 206.        I.         .          .         .         .         .S        .         .         .         .         .         .
11710 207.        I.         .          .         .         .         .S        .         .         .         .         .         .
11715 208.        I.         .          .         .         .         .S        .         .         .         .         .         .
11720 209.        I.         .          .         .         .         .S        .         .         .         .         .         .
11725 210.        I.         .          .         .         .         .S        .         .         .         .         .         .
11730 211. . . . .I. . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.       IO.         .          .         .         .         .S        .         .         .         .         .
11740 213.       IO.         .          .         .         .         .S        .         .         .         .         .
11745 214.       IO.         .          .         .         .         .S        .         .         .         .         .
11750 215.       IO.         .          .         .         .         .S        .         .         .         .         .
11755 216.       IO.         .          .         .         .         .S        .         .         .         .         .
11800 217.       I .         .          .         .         .         .S        .         .         .         .         .
11805 218.       I .         .          .         .         .         .S        .         .         .         .         .
11810 219.       I .         .          .         .         .         .S        .         .         .         .         .
11815 220.       I .         .          .         .         .         .S        .         .         .         .         .
11820 221. . . . I . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.       I .         .          .         .         .         .S        .         .         .         .         .
11830 223.       I .         .          .         .         .         .S        .         .         .         .         .
11835 224.       I .         .          .         .         .         .S        .         .         .         .         .
11840 225.       I .         .          .         .         .         .S        .         .         .         .         .
11845 226.       I .         .          .         .         .         .S        .         .         .         .         .
11850 227.       I .         .          .         .         .         .S        .         .         .         .         .
11855 228.       I .         .          .         .         .         .S        .         .         .         .         .
11900 229.       I .         .          .         .         .         .S        .         .         .         .         .
11905 230.       I .         .          .         .         .         .S        .         .         .         .         .
11910 231. . . . I . . . . . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232.       I .         .          .         .         .         .S        .         .         .         .         .
```

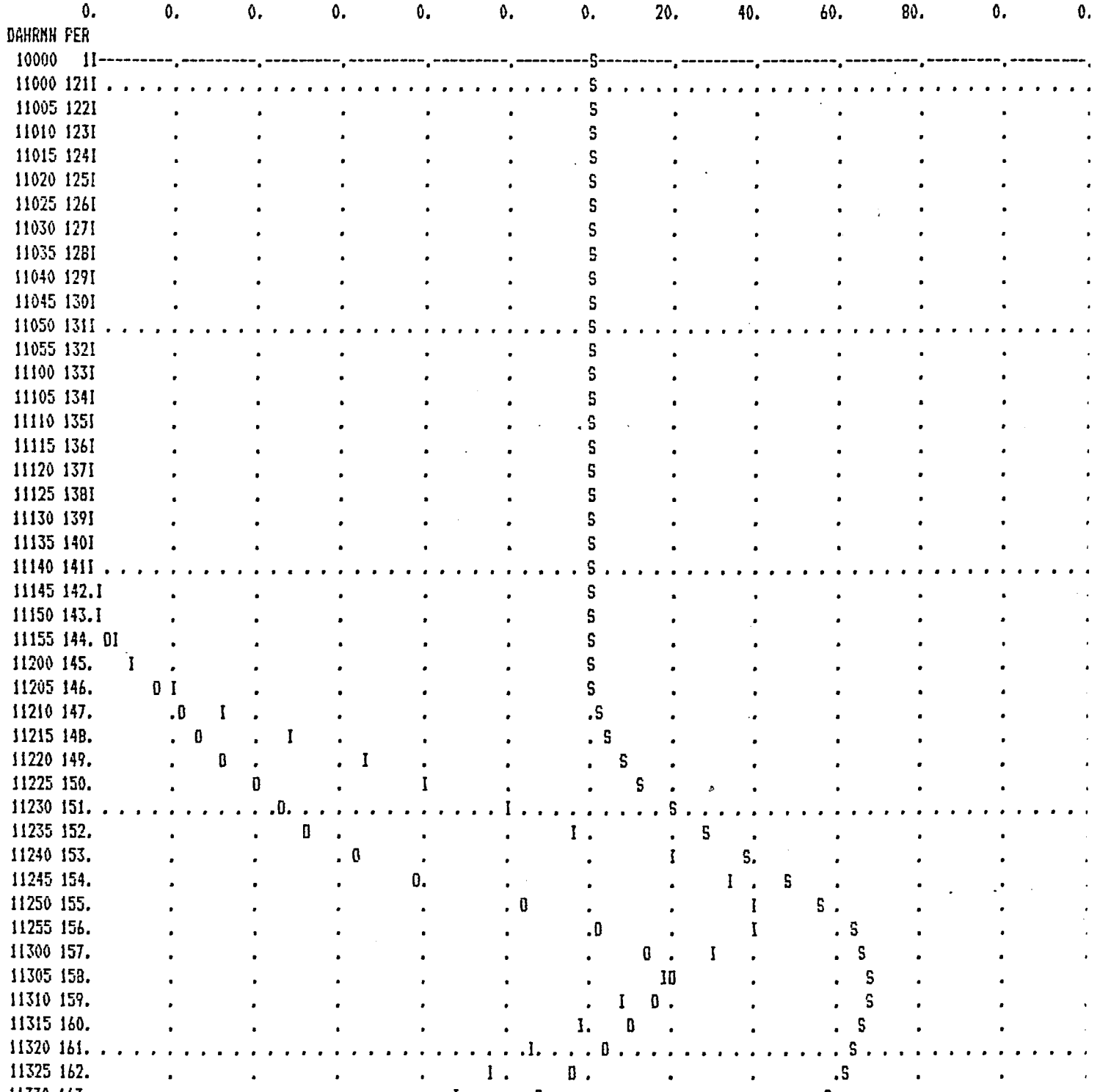
```
11920 233.     I .        .        .        .        .        .S       .        .        .        .        .        .
11925 234.     I .        .        .        .        .        .S       .        .        .        .        .        .
11930 235.     I .        .        .        .        .        .S       .        .        .        .        .        .
11935 236.     I .        .        .        .        .        .S       .        .        .        .        .        .
11940 237.     I .        .        .        .        .        .S       .        .        .        .        .        .
11945 238.     I .        .        .        .        .        .S       .        .        .        .        .        .
11950 239.     I .        .        .        .        .        .S       .        .        .        .        .        .
11955 240.     I .        .        .        .        .        .S       .        .        .        .        .        .
12000 241. . . .ID . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12005 242.    ID .        .        .        .        .        .S       .        .        .        .        .        .
12010 243.    ID .        .        .        .        .        .S       .        .        .        .        .        .
12015 244.    ID .        .        .        .        .        .S       .        .        .        .        .        .
12020 245.    ID .        .        .        .        .        .S       .        .        .        .        .        .
12025 246.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12030 247.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12035 248.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12040 249.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12045 250.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12050 251. . . .I. . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12055 252.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12100 253.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12105 254.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12110 255.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12115 256.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12120 257.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12125 258.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12130 259.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12135 260.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12140 261. . . .I. . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 262.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12150 263.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12155 264.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12200 265.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12205 266.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12210 267.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12215 268.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12220 269.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12225 270.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12230 271. . . .I. . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 272.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12240 273.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12245 274.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12250 275.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12255 276.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12300 277.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12305 278.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12310 279.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12315 280.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12320 281. . . .I. . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 282.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12330 283.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12335 284.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12340 285.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12345 286.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12350 287.    I  .        .        .        .        .        .S       .        .        .        .        .        .
12355 288.-----I--.--------.--------.--------.--------.--------.S-------.--------.--------.--------.--------.--------.--------
```

*** ***

```
          **************
          *            *
 109 KK   *      RC3   *
          *            *
          **************
```

```
 110 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          2  PLOT CONTROL
                    QSCAL         0.  HYDROGRAPH PLOT SCALE

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN       0. TO      176.
               THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
               THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
```

STATION RC3


(I) INFLOW. (O) OUTFLOW
0. 400. 800. 1200. 1600. 2000. 2400. 2800. 3200. 3600. 0. 0. 0.
(S) STORAGE
0. 0. 0. 0. 0. 0. 0. 20. 40. 60. 80. 0. 0.
DAHRMN PER
10000 11
11000 121
11005 122
11010 123
11015 124
11020 125
11025 126
11030 127
11035 128
11040 129
11045 130
11050 131
11055 132
11100 133
11105 134
11110 135
11115 136
11120 137
11125 138
11130 139
11135 140
11140 141
11145 142.
11150 143.
11155 144.
11200 145.
11205 146.
11210 147.
11215 148.
11220 149.
11225 150.
11230 151.
11235 152.
11240 153.
11245 154.
11250 155.
11255 156.
11300 157.
11305 158.
11310 159.
11315 160.
11320 161.
11325 162.
11330 163.
11335 164.
11340 165.
11345 166.
11350 167.
11355 168.
11400 169.
11405 170.
11410 171.
11415 172.

```
11420 173.         .         .   I     O         .         .         .         .       S .         .         .         .         .
11425 174.         .         .   I    O.         .         .         .         .     S   .         .         .         .         .
11430 175.         .         . I     O .         .         .         .         .    S    .         .         .         .         .
11435 176.         .         .I     O  .         .         .         .         .    S    .         .         .         .         .
11440 177.         .         I     O   .         .         .         .         .   S     .         .         .         .         .
11445 178.         .         I     O   .         .         .         .         .  S      .         .         .         .         .
11450 179.         .        I.    O    .         .         .         .         . S       .         .         .         .         .
11455 180.         .        I.   O     .         .         .         .         .S        .         .         .         .         .
11500 181. . . . . . . . . I . . O . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . .
11505 182.         .       I .  O      .         .         .         .         S         .         .         .         .         .
11510 183.         .      I  . O       .         .         .         .        S.         .         .         .         .         .
11515 184.         .      I  . O       .         .         .         .       S .         .         .         .         .         .
11520 185.         .     I   .O        .         .         .         .       S .         .         .         .         .         .
11525 186.         .     I   O         .         .         .         .      S  .         .         .         .         .         .
11530 187.         .    I    O         .         .         .         .     S   .         .         .         .         .         .
11535 188.         .    I   O.         .         .         .         .     S   .         .         .         .         .         .
11540 189.         .   I   O .         .         .         .         .    S    .         .         .         .         .         .
11545 190.         .   I   O .         .         .         .         .    S    .         .         .         .         .         .
11550 191. . . . . . I . O. . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . .
11555 192.         .  I  O   .         .         .         .         .   S     .         .         .         .         .         .
11600 193.         .  I  O   .         .         .         .         .   S     .         .         .         .         .         .
11605 194.         .  I O    .         .         .         .         .  S      .         .         .         .         .         .
11610 195.         .  I O    .         .         .         .         .  S      .         .         .         .         .         .
11615 196.         .  IO     .         .         .         .         .  S      .         .         .         .         .         .
11620 197.         .  IO     .         .         .         .         .  S      .         .         .         .         .         .
11625 198.         . I O     .         .         .         .         . S       .         .         .         .         .         .
11630 199.         . IO      .         .         .         .         . S       .         .         .         .         .         .
11635 200.         . IO      .         .         .         .         . S       .         .         .         .         .         .
11640 201. . . . . . IO. . . . . . . . . . . . . . . . . . . . . . . . S . . . . . . . . . . . . . . . . . . . . . . . . . . . .
11645 202.         . IO      .         .         .         .         . S       .         .         .         .         .         .
11650 203.         . IO      .         .         .         .         . S       .         .         .         .         .         .
11655 204.         . I       .         .         .         .         . S       .         .         .         .         .         .
11700 205.         . I       .         .         .         .         . S       .         .         .         .         .         .
11705 206.         . I       .         .         .         .         . S       .         .         .         .         .         .
11710 207.         . I       .         .         .         .         . S       .         .         .         .         .         .
11715 208.         . I       .         .         .         .         .S        .         .         .         .         .         .
11720 209.         . I       .         .         .         .         .S        .         .         .         .         .         .
11725 210.         .IO       .         .         .         .         .S        .         .         .         .         .         .
11730 211. . . . . IO . . . . . . . . . . . . . . . . . . . . . . . . S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11735 212.         .IO       .         .         .         .         .S        .         .         .         .         .         .
11740 213.         .IO       .         .         .         .         .S        .         .         .         .         .         .
11745 214.         .I        .         .         .         .         .S        .         .         .         .         .         .
11750 215.         .I        .         .         .         .         .S        .         .         .         .         .         .
11755 216.         .I        .         .         .         .         .S        .         .         .         .         .         .
11800 217.         .I        .         .         .         .         .S        .         .         .         .         .         .
11805 218.         .I        .         .         .         .         .S        .         .         .         .         .         .
11810 219.         .I        .         .         .         .         .S        .         .         .         .         .         .
11815 220.         .I        .         .         .         .         .S        .         .         .         .         .         .
11820 221. . . . . I. . . . . . . . . . . . . . . . . . . . . . . . . S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11825 222.         .I        .         .         .         .         .S        .         .         .         .         .         .
11830 223.         .I        .         .         .         .         .S        .         .         .         .         .         .
11835 224.         .I        .         .         .         .         .S        .         .         .         .         .         .
11840 225.         .I        .         .         .         .         .S        .         .         .         .         .         .
11845 226.         .I        .         .         .         .         .S        .         .         .         .         .         .
11850 227.         .I        .         .         .         .         .S        .         .         .         .         .         .
11855 228.         IO        .         .         .         .         .S        .         .         .         .         .         .
11900 229.         IO        .         .         .         .         .S        .         .         .         .         .         .
11905 230.         IO        .         .         .         .         .S        .         .         .         .         .         .
11910 231. . . . . IO. . . . . . . . . . . . . . . . . . . . . . . . S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
11915 232.         I         .         .         .         .         .S        .         .         .         .         .         .
```

```
11920 233.       I        .        .        .        .        .S       .        .        .        .        .        .
11925 234.       I        .        .        .        .        .S       .        .        .        .        .        .
11930 235.       I        .        .        .        .        .S       .        .        .        .        .        .
11935 236.       I        .        .        .        .        .S       .        .        .        .        .        .
11940 237.       I        .        .        .        .        .S       .        .        .        .        .        .
11945 238.       I        .        .        .        .        .S       .        .        .        .        .        .
11950 239.       I        .        .        .        .        .S       .        .        .        .        .        .
11955 240.       I        .        .        .        .        .S       .        .        .        .        .        .
12000 241. . . . I . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
12005 242.       I        .        .        .        .        .S       .        .        .        .        .        .
12010 243.       I        .        .        .        .        .S       .        .        .        .        .        .
12015 244.       I        .        .        .        .        .S       .        .        .        .        .        .
12020 245.       I        .        .        .        .        .S       .        .        .        .        .        .
12025 246.       I        .        .        .        .        .S       .        .        .        .        .        .
12030 247.       I        .        .        .        .        .S       .        .        .        .        .        .
12035 248.       I        .        .        .        .        .S       .        .        .        .        .        .
12040 249.       I        .        .        .        .        .S       .        .        .        .        .        .
12045 250.       I        .        .        .        .        .S       .        .        .        .        .        .
12050 251. . . . I . . . . . . . . . . . . . . . . . . . . . . .S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
12055 252.       I        .        .        .        .        .S       .        .        .        .        .        .
12100 253.       I        .        .        .        .        .S       .        .        .        .        .        .
12105 254.       I0       .        .        .        .        .S       .        .        .        .        .        .
12110 255.       I.       .        .        .        .        .S       .        .        .        .        .        .
12115 256.       I.       .        .        .        .        .S       .        .        .        .        .        .
12120 257.       I.       .        .        .        .        .S       .        .        .        .        .        .
12125 258.       I.       .        .        .        .        .S       .        .        .        .        .        .
12130 259.       I.       .        .        .        .        .S       .        .        .        .        .        .
12135 260.       I.       .        .        .        .        S        .        .        .        .        .        .
12140 261. . . . I. . . . . . . . . . . . . . . . . . . . . . . S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 262.       I.       .        .        .        .        S        .        .        .        .        .        .
12150 263.       I.       .        .        .        .        S        .        .        .        .        .        .
12155 264.       I.       .        .        .        .        S        .        .        .        .        .        .
12200 265.       I.       .        .        .        .        S        .        .        .        .        .        .
12205 266.       I.       .        .        .        .        S        .        .        .        .        .        .
12210 267.       I.       .        .        .        .        S        .        .        .        .        .        .
12215 268.       I.       .        .        .        .        S        .        .        .        .        .        .
12220 269.       I.       .        .        .        .        S        .        .        .        .        .        .
12225 270.       I.       .        .        .        .        S        .        .        .        .        .        .
12230 271. . . . I. . . . . . . . . . . . . . . . . . . . . . . S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 272.       I.       .        .        .        .        S        .        .        .        .        .        .
12240 273.       I.       .        .        .        .        S        .        .        .        .        .        .
12245 274.       I.       .        .        .        .        S        .        .        .        .        .        .
12250 275.       I.       .        .        .        .        S        .        .        .        .        .        .
12255 276.       I.       .        .        .        .        S        .        .        .        .        .        .
12300 277.       I.       .        .        .        .        S        .        .        .        .        .        .
12305 278.       I.       .        .        .        .        S        .        .        .        .        .        .
12310 279.       I.       .        .        .        .        S        .        .        .        .        .        .
12315 280.       I.       .        .        .        .        S        .        .        .        .        .        .
12320 281. . . . I. . . . . . . . . . . . . . . . . . . . . . . S. . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 282.       I.       .        .        .        .        S        .        .        .        .        .        .
12330 283.       I.       .        .        .        .        S        .        .        .        .        .        .
12335 284.       I.       .        .        .        .        S        .        .        .        .        .        .
12340 285.       I.       .        .        .        .        S        .        .        .        .        .        .
12345 286.       I.       .        .        .        .        S        .        .        .        .        .        .
12350 287.       I.       .        .        .        .        S        .        .        .        .        .        .
12355 288.-------I.--------.--------.--------.--------.--------S--------.--------.--------.--------.--------.--------.
```

```
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** **

          **************
          *            *
252 KK    *      C10   *
          *            *
          **************

254 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          1  PRINT CONTROL
                     IPLOT          2  PLOT CONTROL
                     QSCAL         0.  HYDROGRAPH PLOT SCALE

255 HC          HYDROGRAPH COMBINATION
                     ICOMP          3  NUMBER OF HYDROGRAPHS TO COMBINE

                                                    ***
```

HYDROGRAPH AT STATION C10
SUM OF 3 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0600	73	6.	1		1200	145	104.	1		1800	217	623.
1		0005	2	0.	1		0605	74	7.	1		1205	146	150.	1		1805	218	617.
1		0010	3	0.	1		0610	75	7.	1		1210	147	236.	1		1810	219	611.
1		0015	4	0.	1		0615	76	7.	1		1215	148	395.	1		1815	220	606.
1		0020	5	0.	1		0620	77	7.	1		1220	149	664.	1		1820	221	600.
1		0025	6	0.	1		0625	78	7.	1		1225	150	1056.	1		1825	222	595.
1		0030	7	0.	1		0630	79	7.	1		1230	151	1521.	1		1830	223	590.
1		0035	8	0.	1		0635	80	7.	1		1235	152	1960.	1		1835	224	585.
1		0040	9	0.	1		0640	81	7.	1		1240	153	2300.	1		1840	225	580.
1		0045	10	0.	1		0645	82	7.	1		1245	154	2538.	1		1845	226	576.
1		0050	11	0.	1		0650	83	7.	1		1250	155	2702.	1		1850	227	571.
1		0055	12	0.	1		0655	84	7.	1		1255	156	2816.	1		1855	228	566.
1		0100	13	0.	1		0700	85	7.	1		1300	157	2896.	1		1900	229	562.
1		0105	14	0.	1		0705	86	7.	1		1305	158	2949.	1		1905	230	558.
1		0110	15	0.	1		0710	87	8.	1		1310	159	3055.	1		1910	231	553.
1		0115	16	0.	1		0715	88	8.	1		1315	160	3331.	1		1915	232	549.
1		0120	17	0.	1		0720	89	8.	1		1320	161	3777.	1		1920	233	545.
1		0125	18	0.	1		0725	90	8.	1		1325	162	4018.	1		1925	234	541.
1		0130	19	0.	1		0730	91	8.	1		1330	163	4051.	1		1930	235	538.
1		0135	20	0.	1		0735	92	8.	1		1335	164	3961.	1		1935	236	534.
1		0140	21	0.	1		0740	93	8.	1		1340	165	3791.	1		1940	237	530.
1		0145	22	0.	1		0745	94	8.	1		1345	166	3614.	1		1945	238	526.
1		0150	23	0.	1		0750	95	9.	1		1350	167	3397.	1		1950	239	522.
1		0155	24	1.	1		0755	96	9.	1		1355	168	3170.	1		1955	240	518.
1		0200	25	1.	1		0800	97	9.	1		1400	169	2955.	1		2000	241	514.
1		0205	26	1.	1		0805	98	9.	1		1405	170	2756.	1		2005	242	510.
1		0210	27	1.	1		0810	99	9.	1		1410	171	2582.	1		2010	243	507.
1		0215	28	1.	1		0815	100	9.	1		1415	172	2429.	1		2015	244	503.

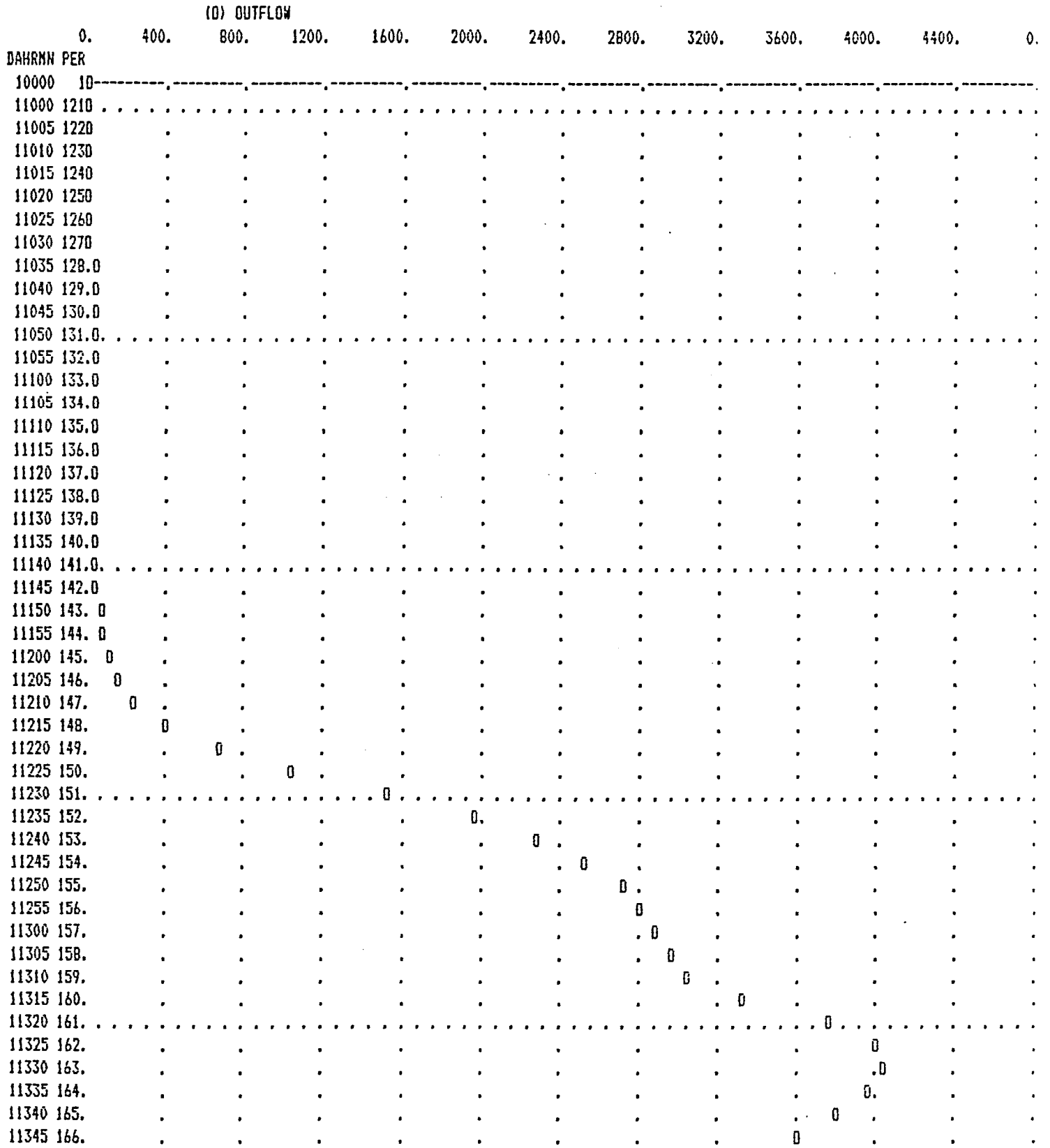
1	0220	29	2.	*	1	0820	101	9.	*	1	1420	173	2293.	*	1	2020	245	501.
1	0225	30	2.	*	1	0825	102	10.	*	1	1425	174	2171.	*	1	2025	246	498.
1	0230	31	2.	*	1	0830	103	10.	*	1	1430	175	2061.	*	1	2030	247	495.
1	0235	32	3.	*	1	0835	104	10.	*	1	1435	176	1961.	*	1	2035	248	493.
1	0240	33	3.	*	1	0840	105	10.	*	1	1440	177	1869.	*	1	2040	249	490.
1	0245	34	3.	*	1	0845	106	10.	*	1	1445	178	1786.	*	1	2045	250	488.
1	0250	35	3.	*	1	0850	107	11.	*	1	1450	179	1711.	*	1	2050	251	486.
1	0255	36	4.	*	1	0855	108	11.	*	1	1455	180	1643.	*	1	2055	252	483.
1	0300	37	4.	*	1	0900	109	11.	*	1	1500	181	1582.	*	1	2100	253	481.
1	0305	38	4.	*	1	0905	110	11.	*	1	1505	182	1525.	*	1	2105	254	479.
1	0310	39	4.	*	1	0910	111	12.	*	1	1510	183	1472.	*	1	2110	255	477.
1	0315	40	4.	*	1	0915	112	12.	*	1	1515	184	1423.	*	1	2115	256	474.
1	0320	41	4.	*	1	0920	113	12.	*	1	1520	185	1376.	*	1	2120	257	472.
1	0325	42	5.	*	1	0925	114	12.	*	1	1525	186	1332.	*	1	2125	258	470.
1	0330	43	5.	*	1	0930	115	13.	*	1	1530	187	1289.	*	1	2130	259	468.
1	0335	44	5.	*	1	0935	116	13.	*	1	1535	188	1246.	*	1	2135	260	466.
1	0340	45	5.	*	1	0940	117	14.	*	1	1540	189	1204.	*	1	2140	261	464.
1	0345	46	5.	*	1	0945	118	14.	*	1	1545	190	1163.	*	1	2145	262	462.
1	0350	47	5.	*	1	0950	119	15.	*	1	1550	191	1124.	*	1	2150	263	460.
1	0355	48	5.	*	1	0955	120	15.	*	1	1555	192	1086.	*	1	2155	264	458.
1	0400	49	5.	*	1	1000	121	16.	*	1	1600	193	1050.	*	1	2200	265	457.
1	0405	50	5.	*	1	1005	122	16.	*	1	1605	194	1014.	*	1	2205	266	455.
1	0410	51	5.	*	1	1010	123	17.	*	1	1610	195	980.	*	1	2210	267	453.
1	0415	52	5.	*	1	1015	124	18.	*	1	1615	196	946.	*	1	2215	268	451.
1	0420	53	5.	*	1	1020	125	18.	*	1	1620	197	913.	*	1	2220	269	450.
1	0425	54	5.	*	1	1025	126	19.	*	1	1625	198	882.	*	1	2225	270	448.
1	0430	55	5.	*	1	1030	127	20.	*	1	1630	199	854.	*	1	2230	271	446.
1	0435	56	6.	*	1	1035	128	21.	*	1	1635	200	828.	*	1	2235	272	445.
1	0440	57	6.	*	1	1040	129	22.	*	1	1640	201	805.	*	1	2240	273	443.
1	0445	58	6.	*	1	1045	130	23.	*	1	1645	202	784.	*	1	2245	274	442.
1	0450	59	6.	*	1	1050	131	25.	*	1	1650	203	766.	*	1	2250	275	440.
1	0455	60	6.	*	1	1055	132	26.	*	1	1655	204	749.	*	1	2255	276	439.
1	0500	61	6.	*	1	1100	133	28.	*	1	1700	205	734.	*	1	2300	277	437.
1	0505	62	6.	*	1	1105	134	29.	*	1	1705	206	720.	*	1	2305	278	435.
1	0510	63	6.	*	1	1110	135	31.	*	1	1710	207	708.	*	1	2310	279	434.
1	0515	64	6.	*	1	1115	136	34.	*	1	1715	208	696.	*	1	2315	280	432.
1	0520	65	6.	*	1	1120	137	36.	*	1	1720	209	686.	*	1	2320	281	431.
1	0525	66	6.	*	1	1125	138	39.	*	1	1725	210	676.	*	1	2325	282	429.
1	0530	67	6.	*	1	1130	139	42.	*	1	1730	211	667.	*	1	2330	283	428.
1	0535	68	6.	*	1	1135	140	45.	*	1	1735	212	658.	*	1	2335	284	427.
1	0540	69	6.	*	1	1140	141	50.	*	1	1740	213	650.	*	1	2340	285	425.
1	0545	70	6.	*	1	1145	142	56.	*	1	1745	214	643.	*	1	2345	286	424.
1	0550	71	6.	*	1	1150	143	65.	*	1	1750	215	636.	*	1	2350	287	422.
1	0555	72	6.	*	1	1155	144	79.	*	1	1755	216	629.	*	1	2355	288	421.
				*					*					*				

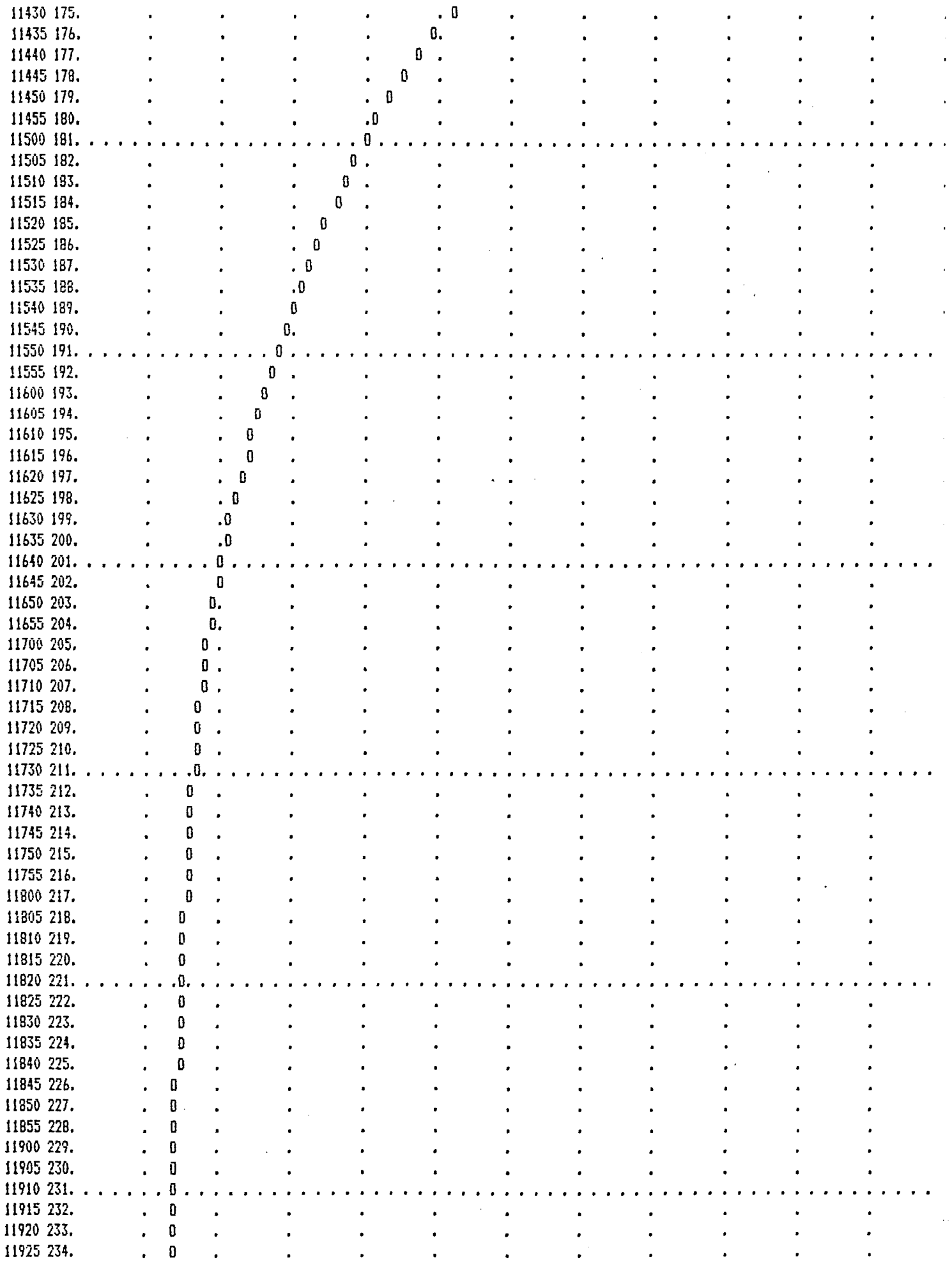
****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	23.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 4051.	13.50		1676.	544.	544.	544.
		(INCHES)	1.200	1.552	1.552	1.552
		(AC-FT)	831.	1075.	1075.	1075.

CUMULATIVE AREA = 12.99 SQ MI

STATION C10


(O) OUTFLOW
0. 400. 800. 1200. 1600. 2000. 2400. 2800. 3200. 3600. 4000. 4400. 0.
DAHRMN PER
10000 10
11000 1210
11005 1220
11010 1230
11015 1240
11020 1250
11025 1260
11030 1270
11035 128.0
11040 129.0
11045 130.0
11050 131.0
11055 132.0
11100 133.0
11105 134.0
11110 135.0
11115 136.0
11120 137.0
11125 138.0
11130 139.0
11135 140.0
11140 141.0
11145 142.0
11150 143.
11155 144.
11200 145.
11205 146.
11210 147.
11215 148.
11220 149.
11225 150.
11230 151.
11235 152.
11240 153.
11245 154.
11250 155.
11255 156.
11300 157.
11305 158.
11310 159.
11315 160.
11320 161.
11325 162.
11330 163.
11335 164.
11340 165.
11345 166.
11350 167.
11355 168.
11400 169.
11405 170.
11410 171.
11415 172.
11420 173.
11425 174.


11430 175.
11435 176.
11440 177.
11445 178.
11450 179.
11455 180.
11500 181.
11505 182.
11510 183.
11515 184.
11520 185.
11525 186.
11530 187.
11535 188.
11540 189.
11545 190.
11550 191.
11555 192.
11600 193.
11605 194.
11610 195.
11615 196.
11620 197.
11625 198.
11630 199.
11635 200.
11640 201.
11645 202.
11650 203.
11655 204.
11700 205.
11705 206.
11710 207.
11715 208.
11720 209.
11725 210.
11730 211.
11735 212.
11740 213.
11745 214.
11750 215.
11755 216.
11800 217.
11805 218.
11810 219.
11815 220.
11820 221.
11825 222.
11830 223.
11835 224.
11840 225.
11845 226.
11850 227.
11855 228.
11900 229.
11905 230.
11910 231.
11915 232.
11920 233.
11925 234.

```
11930 235.       .  0    .         .         .         .         .         .         .         .         .         .
11935 236.       .  0    .         .         .         .         .         .         .         .         .         .
11940 237.       .  0    .         .         .         .         .         .         .         .         .         .
11945 238.       .  0    .         .         .         .         .         .         .         .         .         .
11950 239.       .  0    .         .         .         .         .         .         .         .         .         .
11955 240.       .  0    .         .         .         .         .         .         .         .         .         .
12000 241. . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12005 242.       .  0    .         .         .         .         .         .         .         .         .         .
12010 243.       .  0    .         .         .         .         .         .         .         .         .         .
12015 244.       .  0    .         .         .         .         .         .         .         .         .         .
12020 245.       .  0    .         .         .         .         .         .         .         .         .         .
12025 246.       . 0     .         .         .         .         .         .         .         .         .         .
12030 247.       . 0     .         .         .         .         .         .         .         .         .         .
12035 248.       . 0     .         .         .         .         .         .         .         .         .         .
12040 249.       . 0     .         .         .         .         .         .         .         .         .         .
12045 250.       . 0     .         .         .         .         .         .         .         .         .         .
12050 251. . . . . . 0 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12055 252.       . 0     .         .         .         .         .         .         .         .         .         .
12100 253.       . 0     .         .         .         .         .         .         .         .         .         .
12105 254.       . 0     .         .         .         .         .         .         .         .         .         .
12110 255.       . 0     .         .         .         .         .         .         .         .         .         .
12115 256.       . 0     .         .         .         .         .         .         .         .         .         .
12120 257.       . 0     .         .         .         .         .         .         .         .         .         .
12125 258.       . 0     .         .         .         .         .         .         .         .         .         .
12130 259.       . 0     .         .         .         .         .         .         .         .         .         .
12135 260.       . 0     .         .         .         .         .         .         .         .         .         .
12140 261. . . . . . 0 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12145 262.       . 0     .         .         .         .         .         .         .         .         .         .
12150 263.       . 0     .         .         .         .         .         .         .         .         .         .
12155 264.       .0      .         .         .         .         .         .         .         .         .         .
12200 265.       .0      .         .         .         .         .         .         .         .         .         .
12205 266.       .0      .         .         .         .         .         .         .         .         .         .
12210 267.       .0      .         .         .         .         .         .         .         .         .         .
12215 268.       .0      .         .         .         .         .         .         .         .         .         .
12220 269.       .0      .         .         .         .         .         .         .         .         .         .
12225 270.       .0      .         .         .         .         .         .         .         .         .         .
12230 271. . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12235 272.       .0      .         .         .         .         .         .         .         .         .         .
12240 273.       .0      .         .         .         .         .         .         .         .         .         .
12245 274.       .0      .         .         .         .         .         .         .         .         .         .
12250 275.       .0      .         .         .         .         .         .         .         .         .         .
12255 276.       .0      .         .         .         .         .         .         .         .         .         .
12300 277.       .0      .         .         .         .         .         .         .         .         .         .
12305 278.       .0      .         .         .         .         .         .         .         .         .         .
12310 279.       .0      .         .         .         .         .         .         .         .         .         .
12315 280.       .0      .         .         .         .         .         .         .         .         .         .
12320 281. . . . . .0. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .
12325 282.       .0      .         .         .         .         .         .         .         .         .         .
12330 283.       .0      .         .         .         .         .         .         .         .         .         .
12335 284.       .0      .         .         .         .         .         .         .         .         .         .
12340 285.       .0      .         .         .         .         .         .         .         .         .         .
12345 286.       .0      .         .         .         .         .         .         .         .         .         .
12350 287.       .0      .         .         .         .         .         .         .         .         .         .
12355 288.--------.0-------.---------.---------.---------.---------.---------.---------.---------.---------.---------.---------
```

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	NSW1	2087.	12.25	289.	81.	81.	1.37		
+	ROUTED TO	RNSW1	96.	14.08	95.	46.	46.	1.37		
+									19.29	14.08
+	ROUTED TO	KNSW1	96.	14.58	94.	44.	44.	1.37		
+	HYDROGRAPH AT	NSW2	1315.	12.50	243.	68.	68.	1.33		
+	2 COMBINED AT	C1	1370.	12.50	328.	112.	112.	2.70		
+	ROUTED TO	RC1	1319.	12.67	325.	110.	110.	2.70		
+	HYDROGRAPH AT	NSW3	818.	12.25	113.	32.	32.	.54		
+	ROUTED TO	RNSW1	43.	13.83	42.	21.	21.	.54		
+									18.30	13.83
+	ROUTED TO	KNSW3	43.	14.75	42.	19.	19.	.54		
+	HYDROGRAPH AT	NSW4	1294.	12.50	239.	67.	67.	1.52		
+	HYDROGRAPH AT	NSW5	1589.	12.42	258.	72.	72.	1.17		
+	ROUTED TO	RNSW5	113.	13.83	110.	53.	53.	1.17		
+									20.99	13.83
+	ROUTED TO	KNSW5	113.	14.50	110.	50.	50.	1.17		
+	HYDROGRAPH AT	NSW6	512.	12.50	95.	27.	27.	.60		
+	5 COMBINED AT	C2	3097.	12.58	791.	272.	272.	6.53		
+	ROUTED TO	RC2	2497.	12.83	787.	272.	272.	6.53		
+									19.05	12.83

	ROUTED TO								
+		KRC2	2477.	12.92	788.	271.	271.	6.53	
	HYDROGRAPH AT								
+		NSW7	1167.	12.42	192.	54.	54.	.96	
	ROUTED TO								
+		RNSW7	73.	14.08	71.	34.	34.	.96	
+								19.55	14.08
	ROUTED TO								
+		KNSW7	72.	15.08	71.	31.	31.	.96	
	HYDROGRAPH AT								
+		NSW8	947.	12.58	195.	54.	54.	1.23	
	3 COMBINED AT								
+		C3	3210.	12.83	1039.	357.	357.	8.72	
	ROUTED TO								
+		RC3	2792.	13.08	1037.	356.	356.	8.72	
+								13.73	13.08
	DIVERSION TO								
+		SSW	1298.	13.08	826.	303.	303.	8.72	
	HYDROGRAPH AT								
+		DSSW	1494.	13.08	211.	53.	53.	8.72	
	DIVERSION TO								
+		I17	282.	13.08	25.	6.	6.	8.72	
	HYDROGRAPH AT								
+		DI17	1212.	13.08	186.	47.	47.	8.72	
	HYDROGRAPH AT								
+		NSW9	540.	12.25	75.	21.	21.	.38	
	ROUTED TO								
+		RNSW9	11.	16.83	11.	6.	6.	.38	
+								19.45	17.17
	ROUTED TO								
+		KNSW9	11.	18.58	11.	5.	5.	.38	
	HYDROGRAPH AT								
+		SSW1	848.	12.67	196.	55.	55.	1.24	
	3 COMBINED AT								
+		C4	1842.	13.00	389.	106.	106.	10.34	
	DIVERSION TO								
+		DDC4	510.	13.00	217.	63.	63.	10.34	
	HYDROGRAPH AT								
+		DC4	1332.	13.00	172.	43.	43.	10.34	
	HYDROGRAPH AT								
+		SSW2	424.	12.25	59.	18.	18.	.28	

	2 COMBINED AT								
+		C5	1398.	13.00	231.	61.	61.	10.62	
	DIVERSION TO								
+		DC5	115.	13.00	48.	15.	15.	10.62	
	HYDROGRAPH AT								
+		DC5	1283.	13.00	183.	46.	46.	10.62	
	HYDROGRAPH AT								
+		SSN3	636.	12.33	95.	29.	29.	.39	
	2 COMBINED AT								
+		C6	1398.	13.00	278.	75.	75.	11.01	
	DIVERSION TO								
+		DC6	156.	13.00	66.	22.	22.	11.01	
	HYDROGRAPH AT								
+		DC6	1242.	13.00	212.	53.	53.	11.01	
	HYDROGRAPH AT								
+		RI17	282.	13.08	25.	6.	6.	.00	
	2 COMBINED AT								
+		C8	1458.	13.08	237.	59.	59.	11.01	
	ROUTED TO								
+		RES4	1185.	13.25	114.	29.	29.	11.01	
+									98.16 13.25
	HYDROGRAPH AT								
+		RDC5	115.	12.00	48.	15.	15.	.00	
	HYDROGRAPH AT								
+		RDC6	156.	11.92	66.	22.	22.	.00	
	3 COMBINED AT								
+		C7	1456.	13.25	227.	65.	65.	11.01	
	ROUTED TO								
+		RTC8	1436.	13.42	234.	67.	67.	11.01	
	HYDROGRAPH AT								
+		RNSW	1298.	13.08	826.	303.	303.	.00	
	HYDROGRAPH AT								
+		RSSW	510.	12.42	217.	63.	63.	.00	
	HYDROGRAPH AT								
+		311A	368.	12.25	50.	14.	14.	.20	
	3 COMBINED AT								
+		C8	1860.	13.00	1086.	380.	380.	.20	
	ROUTED TO								
+		RTC7	1851.	13.17	1080.	376.	376.	.20	
	HYDROGRAPH AT								

+	211A	417.	12.83	113.	32.	32.	.45
HYDROGRAPH AT							
+	411A	118.	13.25	42.	12.	12.	.21
4 COMBINED AT							
+	C9	3723.	13.25	1458.	486.	486.	11.87
ROUTED TO							
+	RTC9	3647.	13.50	1453.	480.	480.	11.87
HYDROGRAPH AT							
+	111A	384.	14.00	191.	55.	55.	.95
HYDROGRAPH AT							
+	P12	144.	12.75	34.	10.	10.	.17
3 COMBINED AT							
+	C10	4051.	13.50	1676.	544.	544.	12.99

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

APPENDIX C

INTERCEPTOR DRAIN
WITHOUT DETENTION BASIN C

```
                                   ****
          FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                   ****


THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3


                                        HEC-1 INPUT                                          PAGE  1

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

  1           ID       OUTERLOOP HIGHWAY OFFSITE DRAINAGE     100 YEAR
  2           ID       23RD AVENUE TO 7TH AVENUE MODIFIED TO 35TH AVE BY DCCO
  3           ID       SEPTEMBER 6, 1989              FILE:  S6M.DAT
              *DIAGRAM
  4           IT      5                    288
  5           IO      5

  6           KK    DA8B
  7           KM       RUNOFF FROM SUB-BASIN BB
  8           BA    0.12
  9           PH                  0.68    1.37    2.40    2.65    2.82    3.14    3.51    3.90
 10           LS            89
 11           UD    0.29

 12           KK    RT2B
 13           KM       ROUTE BB TO ROSE GARDEN
 14           RK    1350  0.0046   0.035           TRAP       0      20

 15           KK    DABC
 16           KM       RUNOFF FROM SUB-BASIN BC
 17           BA    0.21
 18           LS            80
 19           UD    0.35

 20           KK    CB8C
 21           KM       COMBINE ROUTED BB WITH BC
 22           HC       2

 23           KK    DVBC
 24           KM       DIVERT FLOWS SOUTH ON 7TH AVENUE
 25           DT   DVT01
 26           DI       0     100     500    1000    2000
 27           DQ       0     100     416     778    1486

 28           KK    RT8C
 29           KM       ROUTE REMAINING FLOW WEST ON ROSE GARDEN
 30           RK    1000  0.0042   0.030           TRAP       8       2

 31           KK    DA6A
 32           KM       RUNOFF FROM SUB-BASIN BA
 33           BA    0.67
 34           LS            80
 35           UD    0.50

 36           KK    RT8A
```

```
 37          KM       ROUTE 8A TO CULVERT BELOW DEER VALLEY AIRPORT
 38          RK    3900  0.0042   0.030           TRAP       8       2

 39          KK    DA9A
 40          KM       RUNOFF FROM SUB-BASIN 9A
 41          BA    0.39
 42          LS              80
 43          UD    0.31
1                                          HEC-1 INPUT                                                    PAGE  2

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


 44          KK    RT9A
 45          KM       ROUTE 9A THROUGH CAP STRUCTURE
 46          RS       1    STOR      -1       0
 47          SV       0      12      55     173     318     493     697     930
 48          SE    1515    1516    1517    1518    1519    1520    1521    1522
 49          SL    1515     4.9     0.7     0.5
 50          SS    1521     100     3.0     1.5

 51          KK  RT9ACP
 52          KM       ROUTE 9A CAP RUNOFF THROUGH 9B
 53          RK    8200  0.0067   0.035           TRAP      12       2

 54          KK    DA9B
 55          KM       RUNOFF FROM SUB-BASIN 9B
 56          BA    0.58
 57          LS              80
 58          UD    0.52

 59          KK    CB9B
 60          KM       COMBINE ROUTED 9A WITH 9B RUNOFF
 61          HC       2

 62          KK    RT9B
 63          KM       ROUTE 9B TO THE CULVERT BELOW DEER VALLEY AIRPORT
 64          RK    2250  0.0046   0.024           CIRC    4.50

 65          KK    DA9C
 66          KM       RUNOFF FROM SUB-BASIN 9C
 67          BA    0.21
 68          LS              96
 69          UD    0.29

 70          KK    CB9C
 71          KM       COMBINE ROUTED 8A AND 9B WITH 9C
 72          HC       3

 73          KK    RT9C
 74          KM       ROUTE 9C TO ROSE GARDEN
 75          RK    2750  0.0067   0.045           TRAP      30       2

 76          KK    DA9D
 77          KM       RUNOFF FROM SUB-BASIN 9D
 78          BA    0.15
 79          LS              83
 80          UD    0.29

 81          KK    CB9D
 82          KM       COMBINE ROUTED 8D,AND 9B WITH 9D
 83          HC       3
```

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

 84           KK   DV9D1
 85           KM        DIVERT FLOWS SOUTH ON 14TH AVENUE
 86           DT   DVT02
 87           DI      0     300     500    1000    2000
 88           DQ      0       0       1      16      78

 89           KK   RT9D1
 90           KM        ROUTE REMAINING FLOW WEST ON ROSE GARDEN
 91           RK    1400  0.0042   0.030           TRAP       8      20

 92           KK   DV9D2
 93           KM        DIVERT FLOWS SOUTH ON 15TH AVENUE
 94           DT   DVT03
 95           DI      0     100     250     350     499     984    1922
 96           DQ      0      12      50      76     112     201     343

 97           KK   RT9D2
 98           KM        ROUTE THE REMAINING FLOW WEST TO 19TH AVENUE
 99           RK    2100  0.0042   0.030           TRAP       8      20

100           KK    DA9G
101           KM        RUNOFF FROM SUB-BASIN 9G
102           BA    0.25
103           LS              87
104           UD    0.30

105           KK    RT9G
106           KM        ROUTE 9G SOUTH TO ROSE GARDEN
107           RK    2650  0.0046   0.016           TRAP       0      50

108           KK    DA9H
109           KM        RUNOFF FROM SUB-BASIN 9H
110           BA    0.36
111           LS              89
112           UD    0.29

113           KK    CB9H
114           KM        COMBINE ROUTED 9D2 AND 9G WITH 9H
115           HC       3

116           KK    RT9H
117           KM        ROUTE 9H SOUTH TO DETENTION BASIN 3
118           RK    2600  0.0046   0.016           TRAP       0      50

119           KK   RN9D2
120           KM        RETRIEVE DIVERSION FROM ROSE GARDEN AND 15TH AVENUE
121           DR   DVT03

122           KK  RRN9D2
123           KM        ROUTE RN9D2
124           RK    2400  0.0045   0.016           TRAP       0      50
```



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

125           KK    DA9E
```

```
126          KM       RUNOFF FROM SUB-BASIN 9E
127          BA   0.19
128          LS            87
129          UD   0.29

130          KK   CM9E
131          KM       COMBINE ROUTED AN902 AND 9E
132          HC      2

133          KK   RT9E
134          KM       ROUTE 9E TO DETENTION BASIN B
135          RK   1300  0.0067   0.035           TRAP       8       2

136          KK   DA9I
137          KM       RUNOFF FROM SUB-BASIN 9I INTO DETENTION BASIN B
138          BA   0.16
139          LS            80
140          UD   0.29

141          KK   CB9I
142          KM       COMBINE ROUTED 9H AND 9E WITH 9I
143          HC      3

144          KK    DBB
145          KM       ROUTE FLOWS THROUGH BASIN B, DUEL-STAGE OUTLET
146          RS      1    STOR      -1       0
147          SV      0     8.2    29.8    64.1   106.3   168.1   179.8   192.6   212.9   242.0
148          SV  268.5   315.0
149          SQ      0      10      20      30      40      54      96     138     180     223
150          SQ    247     337
151          SE 1367.6  1369.4  1371.7  1375.2  1379.5  1385.6  1387.0  1388.3  1390.0  1392.3
152          SE 1394.4  1398.0

153          KK   DVDBB
154          KM       DIVERT UPPER STAGE OUTLET TO GRAVITY DRAIN
155          DT   DVT05
156          DI      0      10      20      30      40      54      96     138     180     223
157          DI    247     337
158          DQ      0       0       0       0       0       0      40      80     120     160
159          DQ    181     267

160          KK    RNGC
161          KM       RETRIEVE DIVERSION FROM 7TH & ROSE GARDEN
162          DR   DVT01

163          KK  RTANGC
164          KM       ROUTE DIVERSION TO BEARDSLEY
165          RK   2600  0.0046   0.025           TRAP       0      50
```



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

166          KK    DA8E
167          KM       RUNOFF FROM SUB-BASIN 8E
168          BA   0.13
169          LS            86
170          UD   0.29

171          KK    DA8D
172          KM       RUNOFF FROM SUB-BASIN 8D
```

```
173          BA    0.28
174          LS              80
175          UD    0.38

176          KK    RT8D
177          KM        ROUTE WEST TO 7TH AVE
178          RK    1300  0.0033   0.018           TRAP      12       0

179          KK    CB8D
180          KM        COMBINE BE WITH ROUTED RN8D AND ROUTED RT8D
181          HC       3

182          KK    RTCB8D
183          KM        ROUTE COMBINED HYDROGRAPH WEST TO 14TH AVE
184          RK    1800  0.0033   0.018           TRAP      16       0

185          KK    DA8F
186          KM        RUNOFF FROM SUB-BASIN 8F
187          BA    0.08
188          LS              87
189          UD    0.29

190          KK    CB8F
191          KM        COMBINE ROUTED CB8D AND 8F
192          HC       2

193          KK  RTCB8F
194          KM        ROUTE COMBINED HYDROGRAPH TO DET. BASIN A
195          RK     300  0.0033   0.018           TRAP      16       0

196          KK   RN9D1
197          KM        RETRIEVE DIVERSSION FROM ROSE GARDEN AND 14TH AVENUE
198          DR   DVT02

199          KK  RRN9D1
200          KM        ROUTE RN9D1 TO DETENTION BASIN A
201          RK    2800  0.0044   0.016           TRAP       0      50

202          KK    DA8G
203          KM        RUNOFF FROM SUB-BASIN 8G
204          BA    0.12
205          LS              87
206          UD    0.29
```



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

207          KK    CB8F
208          KM        COMBINE ROUTED 8F AND RN9D1 WITH 8G
209          HC       3

210          KK    DBA
211          KM        ROUTE FLOWS THROUGH BASIN A, 42" OUTLET
212          RS       1    STOR      -1       0
```

according to area of this is pipe, 22 in. !

```
213        SV      0     2.7   113.6     125
214        SE   1392  1393.2    1412    1414
215        SL   1392    2.64     0.6     0.5
216        SS   1412     100     3.0     1.5

217        KK   RTDBA
218        KM       ROUTE DETENTION BASIN A TO DETENTION BASIN B
219        RK   5000  0.0050   0.012           CIRC       3

220        KK   CBAB
221        KM       COMBINE DETENTION BASINS A AND B OUTFLOWS
222        HC      2

223        KK   RTAB
224        KM       ROUTE CBAB TO 23RD AVENUE
225        RK   1385 0.00152   0.012           CIRC       5

226        KK   DA10A
227        KM       RUNOFF FROM SUB-BASIN 10A
228        BA   0.12
229        LS            82
230        UD   0.29

231        KK   RT10A
232        KM       ROUTE 10A WEST TO 23RD AVENUE
233        RK   1100  0.0042   0.016           TRAP       0      50

234        KK   DA10B
235        KM       RUNOFF FROM SUB-BASIN 10B
236        BA   0.12
237        LS            82
238        UD   0.29

239        KK   CB10B
240        KM       COMBINE 10A WITH 10B
241        HC      2

242        KK   DV10B
243        KM       DIVERT WEST ALONG ROSE GARDEN
244        DT     DVT
245        DI      0     500    1000    2000
246        DQ      0     500    1000    2000
```



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

247        KK   RT10B
248        KM       ROUTE REMAINING FLOW SOUTH TO BEARDSLEY
249        RK   2600  0.0046   0.016           TRAP       0      50

250        KK   DA10C
251        KM       RUNOFF FROM SUB-BASIN 10C
252        BA   0.12
253        LS            87
254        UD   0.29

255        KK   CB10C
256        KM       COMBINE ROUTED 10B WITH 10C
257        HC      2

258        KK  CB10C2
```

```
KM        COMBINE OUTFLOW OF DETENTION BASINS A & B WITH CB10C
HC       2

KK   RT10C
KM        ROUTE FLOW WEST TO WEST OF INTEL PROPERTY
RK    1135 0.00152   0.012            CIRC       8

KK   RN10B
KM        RETRIEVE DIVERSION FROM ROSE GARDEN AND 23RD AVENUE
DR     DVT

KK  RT10B2
KM        ROUTE RETRIEVE WEST TO I-17
RK    1100  0.0042   0.016            TRAP       0      50

KK   DA11A
KM        RUNOFF FROM SUB-BASIN 11A
BA    0.10
LS              85
UD    0.29

KK   CB11A
KM        COMBINE 11A WITH ROUTED 10B2
HC       2

KK     DBD
KM        ROUTE 11A & 10B INFLOWS THRU DETENTION BASIN D
RS       1    STOR      -1       0
SV       0     0.7    25.4    30.0
SE    1381  1382.5  1396.0  1398.0
SL    1381    2.41     0.6     0.5
SS    1397     100     3.0     1.5

KK   RT11A
KM        ROUTE DETENTION BASIN D SOUTH
RK    2500  0.0046   0.012            CIRC       3
```

21" conc. pipe


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

KK   DA11B
KM        RUNOFF FROM SUB-BASIN 11B
BA    0.12
LS              52
UD    0.29

KK   DB11B
KM        ROUTE 11B THROUGH SMALL DETENTION BASIN AT INTEL
RS       1    STOR      -1       0
SV       0    0.35     1.9    3.07    4.56    6.00
SE    1383    1384    1386    1388    1390    1392
SL    1383    7.07     0.6     0.5
SS    1390     100     3.0     1.5

KK   CB11B
KM        COMBINE 11B WITH ROUTED DETENTION BASIN D OUTFLOW AND FLOWS FROM EAST
HC       3

KK   RT11B
```

36" orifice

```
304          KM       ROUTE WEST TO P11D
305          RK    1400 0.00152   0.012           CIRC       8

306          KK   DA11D
307          KM       RUNOFF FROM SUB-BASIN P11D
308          BA    0.13
309          LS              82
310          UD    1.01

311          KK   CB11D
312          KM       COMBINE HYDROGRAPHS P11D AND OUTFLOW FROM DETENTION BASIN AT INTEL
313          HC      2

314          KK   RT11D
315          KM       ROUTE HYDROGRAPH TO DA P11C
316          RK    1950  0.0044   0.012           TRAP       8       2

317          KK   DA11C
318          KM       RUNOFF FROM SUB-BASIN P11C
319          BA    0.22
320          LS              83
321          UD    1.27

322          KK   CB11C
323          KM       COMBINE HYDROGRAPHS AT THE BASE OF P11C
324          HC      2

325          KK   RT11C
326          KM       ROUTE P11C TO P11B
327          RK    1950  0.0044   0.012           TRAP       8       2
1                                                HEC-1 INPUT                                                    PAGE  9

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


328          KK   DA11B
329          KM       RUNOFF FROM DA P11B
330          BA    0.18
331          LS              90
332          UD    1.27

333          KK   CB11B
334          KM       COMBINE HYDROGRAPHS AT P11B (TO BASIN C)
335          KO      1
336          HC      2
337          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

  NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

    6       DA88
              V
              V
   12       RT88
              .
              .
   15         .        DABC
```

```
              .
              .
 25           .-------> DVT01
 23        DV8C
              V
              V
 28        RT8C
              .
              .
 31           .       DA8A
              .         V
              .         V
 36           .       RT8A
              .         .
              .         .
 39           .         .       DA9A
              .         .         V
              .         .         V
 44           .         .       RT9A
              .         .         V
              .         .         V
 51           .         .     RT9ACP
              .         .         .
              .         .         .
 54           .         .         .       DA9B
              .         .         .         .
              .         .         .         .
 59           .         .       CB9B............
              .         .         V
              .         .         V
 62           .         .       RT9B
              .         .         .
              .         .         .
 65           .         .         .       DA9C
              .         .         .         .
              .         .         .         .
 70           .       CB9C......................
              .         V
              .         V
 73           .       RT9C
              .         .
              .         .
 76           .         .       DA9D
              .         .         .
              .         .         .
 81        CB9D......................
              .
              .
 86           .-------> DVT02
 84       DV9D1
             V
             V
 89       RT9D1
             .
             .
 94           .-------> DVT03
 92       DV9D2
             V
             V
 97       RT9D2
             .
             .
100           .       DA9G
              .         V
```

```
108          .          .        DA9H
             .          .          .
             .          .          .
113       CS9H.......................
             V
             V
116       RT9H
             .
             .
121          .          .<-------   DVT03
119          .      RN9D2
             .          V
             .          V
122          .     RRN9D2
             .          .
             .          .
125          .          .        DA9E
             .          .          .
             .          .          .
130          .       CM9E............
             .          V
             .          V
133          .       RT9E
             .          .
             .          .
136          .          .        DA9I
             .          .          .
             .          .          .
141       CB9I.......................
             V
             V
144       DBB
             .
             .
155          .------->   DVT05
153      DBVD9B
             .
             .
162          .          .<-------   DVT01
160          .       RN8C
             .          V
             .          V
163          .     RTRN8C
             .          .
             .          .
166          .          .        DA8E
             .          .          .
             .          .          .
171          .          .          .        DA8D
             .          .          .          V
             .          .          .          V
176          .          .          .        RT8D
             .          .          .          .
             .          .          .          .
179          .       CS8D.......................
             .          V
             .          V
182          .       RTCB
             .          .
             .          .
185          .          .        DA8F
```

```
193          .      RTCB3F
             .          .
             .          .
198          .          .          .<-------   DVT02
196          .          .      RN9D1
             .          .          V
             .          .          V
199          .          .     RRN9D1
             .          .          .
             .          .          .
202          .          .          .       DA8B
             .          .          .          .
             .          .          .          .
207          .       CP8F......................
             .          V
             .          V
210          .        DBA
             .          V
             .          V
217          .      RTDBA
             .          .
             .          .
220       CBAB............
             V
             V
223       RTAB
             .
             .
226          .      DA10A
             .          V
             .          V
231          .      RT10A
             .          .
             .          .
234          .          .      DA10B
             .          .          .
             .          .          .
239          .      CB10B............
             .          .
             .          .
244          .          .-------\     DVT
242          .      DV10B
             .          V
             .          V
247          .      RT10B
             .          .
             .          .
250          .          .      DA10C
             .          .          .
             .          .          .
255          .      CB10C............
             .          .
             .          .
258       CB10C2............
             V
             V
261       RT10C
             .
             .
266          .          .<-------     DVT
264          .      RN10B
```

```
                .          .
                .          .
  270           .          .      DA11A
                .          .          .
                .          .          .
  275           .      CB11A............
                .          V
                .          V
  278           .        DBD
                .          V
                .          V
  283           .      RT11A
                .          .
                .          .
  288           .          .      DA11B
                .          .          V
                .          .          V
  293           .          .      DB11B
                .          .          .
                .          .          .
  300       CB11B........................
                V
                V
  303       RT11B
                .
                .
  306           .      DA11D
                .          .
                .          .
  311       CB11D............
                V
                V
  314       RT11D
                .
                .
  317           .      DA11C
                .          .
                .          .
  322       CB11C............
                V
                V
  325       RT11C
                .
                .
  328           .      DA11B
                .          .
                .          .
  333       CB11B............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985

U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

```
                    OUTERLOOP HIGHWAY OFFSITE DRAINAGE     100 YEAR
                    23RD AVENUE TO 7TH AVENUE MODIFIED TO 35TH AVE BY DCCD
                    SEPTEMBER 6, 1989              FILE:  S6M.DAT

  5 IO        OUTPUT CONTROL VARIABLES
                   IPRNT          5  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

   IT         HYDROGRAPH TIME DATA
                    NMIN          5  MINUTES IN COMPUTATION INTERVAL
                   IDATE     1    0  STARTING DATE
                   ITIME       0000  STARTING TIME
                      NQ        283  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE     1    0  ENDING DATE
                 NDTIME       2355  ENDING TIME

              COMPUTATION INTERVAL     .08 HOURS
                   TOTAL TIME BASE   23.92 HOURS

        ENGLISH UNITS

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN      116. TO      951.
               THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
               THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)


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


          **************
          *            *
 333 KK   *    CB11B   *
          *            *
          **************

 335 KO        OUTPUT CONTROL VARIABLES
                   IPRNT          1  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

 336 HC        HYDROGRAPH COMBINATION
                   ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                          ***

*****************************************************************************************************************************
```

HYDROGRAPH AT STATION CB11B
SUM OF 2 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0600	73	0.	1		1200	145	97.	1		1800	217	171.
1		0005	2	0.	1		0605	74	0.	1		1205	146	149.	1		1805	218	170.
1		0010	3	0.	1		0610	75	0.	1		1210	147	224.	1		1810	219	169.
1		0015	4	0.	1		0615	76	0.	1		1215	148	311.	1		1815	220	169.
1		0020	5	0.	1		0620	77	0.	1		1220	149	392.	1		1820	221	168.
1		0025	6	0.	1		0625	78	0.	1		1225	150	451.	1		1825	222	167.
1		0030	7	0.	1		0630	79	0.	1		1230	151	489.	1		1830	223	166.
1		0035	8	0.	1		0635	80	0.	1		1235	152	512.	1		1835	224	165.
1		0040	9	0.	1		0640	81	0.	1		1240	153	530.	1		1840	225	165.
1		0045	10	0.	1		0645	82	0.	1		1245	154	545.	1		1845	226	164.
1		0050	11	0.	1		0650	83	0.	1		1250	155	559.	1		1850	227	164.
1		0055	12	0.	1		0655	84	0.	1		1255	156	570.	1		1855	228	163.
1		0100	13	0.	1		0700	85	0.	1		1300	157	577.	1		1900	229	162.
1		0105	14	0.	1		0705	86	0.	1		1305	158	582.	1		1905	230	162.
1		0110	15	0.	1		0710	87	0.	1		1310	159	581.	1		1910	231	161.
1		0115	16	0.	1		0715	88	0.	1		1315	160	577.	1		1915	232	161.
1		0120	17	0.	1		0720	89	0.	1		1320	161	568.	1		1920	233	160.
1		0125	18	0.	1		0725	90	0.	1		1325	162	556.	1		1925	234	160.
1		0130	19	0.	1		0730	91	0.	1		1330	163	540.	1		1930	235	159.
1		0135	20	0.	1		0735	92	0.	1		1335	164	522.	1		1935	236	158.
1		0140	21	0.	1		0740	93	0.	1		1340	165	503.	1		1940	237	158.
1		0145	22	0.	1		0745	94	0.	1		1345	166	482.	1		1945	238	157.
1		0150	23	0.	1		0750	95	0.	1		1350	167	460.	1		1950	239	157.
1		0155	24	0.	1		0755	96	0.	1		1355	168	436.	1		1955	240	156.
1		0200	25	0.	1		0800	97	0.	1		1400	169	410.	1		2000	241	156.
1		0205	26	0.	1		0805	98	0.	1		1405	170	385.	1		2005	242	155.
1		0210	27	0.	1		0810	99	0.	1		1410	171	363.	1		2010	243	155.
1		0215	28	0.	1		0815	100	0.	1		1415	172	345.	1		2015	244	154.
1		0220	29	0.	1		0820	101	0.	1		1420	173	329.	1		2020	245	154.
1		0225	30	0.	1		0825	102	0.	1		1425	174	316.	1		2025	246	153.
1		0230	31	0.	1		0830	103	0.	1		1430	175	304.	1		2030	247	153.
1		0235	32	0.	1		0835	104	0.	1		1435	176	294.	1		2035	248	152.
1		0240	33	0.	1		0840	105	1.	1		1440	177	284.	1		2040	249	152.
1		0245	34	0.	1		0845	106	1.	1		1445	178	276.	1		2045	250	151.
1		0250	35	0.	1		0850	107	1.	1		1450	179	268.	1		2050	251	151.
1		0255	36	0.	1		0855	108	1.	1		1455	180	260.	1		2055	252	150.
1		0300	37	0.	1		0900	109	1.	1		1500	181	254.	1		2100	253	150.
1		0305	38	0.	1		0905	110	1.	1		1505	182	247.	1		2105	254	149.
1		0310	39	0.	1		0910	111	1.	1		1510	183	241.	1		2110	255	149.
1		0315	40	0.	1		0915	112	1.	1		1515	184	236.	1		2115	256	149.
1		0320	41	0.	1		0920	113	2.	1		1520	185	231.	1		2120	257	148.
1		0325	42	0.	1		0925	114	2.	1		1525	186	227.	1		2125	258	148.
1		0330	43	0.	1		0930	115	2.	1		1530	187	223.	1		2130	259	147.
1		0335	44	0.	1		0935	116	2.	1		1535	188	219.	1		2135	260	147.
1		0340	45	0.	1		0940	117	3.	1		1540	189	216.	1		2140	261	146.
1		0345	46	0.	1		0945	118	3.	1		1545	190	212.	1		2145	262	146.
1		0350	47	0.	1		0950	119	3.	1		1550	191	209.	1		2150	263	146.
1		0355	48	0.	1		0955	120	3.	1		1555	192	206.	1		2155	264	145.
1		0400	49	0.	1		1000	121	4.	1		1600	193	204.	1		2200	265	145.
1		0405	50	0.	1		1005	122	4.	1		1605	194	201.	1		2205	266	144.

1	0410	51	0.	*	1	1010	123	5.	*	1	1610	195	199.	*	1	2210	267	144.
1	0415	52	0.	*	1	1015	124	5.	*	1	1615	196	197.	*	1	2215	268	143.
1	0420	53	0.	*	1	1020	125	6.	*	1	1620	197	195.	*	1	2220	269	143.
1	0425	54	0.	*	1	1025	126	6.	*	1	1625	198	193.	*	1	2225	270	143.
1	0430	55	0.	*	1	1030	127	7.	*	1	1630	199	191.	*	1	2230	271	142.
1	0435	56	0.	*	1	1035	128	8.	*	1	1635	200	190.	*	1	2235	272	142.
1	0440	57	0.	*	1	1040	129	9.	*	1	1640	201	188.	*	1	2240	273	141.
1	0445	58	0.	*	1	1045	130	10.	*	1	1645	202	187.	*	1	2245	274	141.
1	0450	59	0.	*	1	1050	131	11.	*	1	1650	203	185.	*	1	2250	275	141.
1	0455	60	0.	*	1	1055	132	12.	*	1	1655	204	184.	*	1	2255	276	140.
1	0500	61	0.	*	1	1100	133	13.	*	1	1700	205	183.	*	1	2300	277	140.
1	0505	62	0.	*	1	1105	134	15.	*	1	1705	206	181.	*	1	2305	278	139.
1	0510	63	0.	*	1	1110	135	17.	*	1	1710	207	180.	*	1	2310	279	139.
1	0515	64	0.	*	1	1115	136	18.	*	1	1715	208	179.	*	1	2315	280	139.
1	0520	65	0.	*	1	1120	137	21.	*	1	1720	209	178.	*	1	2320	281	138.
1	0525	66	0.	*	1	1125	138	23.	*	1	1725	210	177.	*	1	2325	282	138.
1	0530	67	0.	*	1	1130	139	25.	*	1	1730	211	176.	*	1	2330	283	137.
1	0535	68	0.	*	1	1135	140	27.	*	1	1735	212	175.	*	1	2335	284	137.
1	0540	69	0.	*	1	1140	141	30.	*	1	1740	213	174.	*	1	2340	285	137.
1	0545	70	0.	*	1	1145	142	36.	*	1	1745	214	174.	*	1	2345	286	136.
1	0550	71	0.	*	1	1150	143	47.	*	1	1750	215	173.	*	1	2350	287	136.
1	0555	72	0.	*	1	1155	144	66.	*	1	1755	216	172.	*	1	2355	288	135.
				*					*					*				

****

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	23.92-HR
		(CFS)				
+ 582.	13.08		310.	117.	117.	117.
		(INCHES)	.575	.863	.863	.863
		(AC-FT)	154.	230.	230.	230.

CUMULATIVE AREA = 5.01 SQ MI

1

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	DABB	226.	12.25	31.	9.	9.	.12		
+	ROUTED TO	RTBB	222.	12.33	31.	9.	9.	.12		
+	HYDROGRAPH AT	DABC	260.	12.33	40.	11.	11.	.21		
	2 COMBINED AT									

+		CB8C	482.	12.33	71.	20.	20.	.33	
	DIVERSION TO								
+		DVT01	402.	12.33	64.	18.	18.	.33	
	HYDROGRAPH AT								
+		DV8C	80.	12.33	7.	2.	2.	.33	
	ROUTED TO								
+		RT8C	79.	12.42	7.	2.	2.	.33	
	HYDROGRAPH AT								
+		DA8A	667.	12.50	126.	35.	35.	.67	
	ROUTED TO								
+		RT8A	659.	12.58	126.	35.	35.	.67	
	HYDROGRAPH AT								
+		DA9A	512.	12.33	74.	20.	20.	.39	
	ROUTED TO								
+		RT9A	32.	13.75	31.	15.	15.	.39	
+									1516.35 13.75
	ROUTED TO								
+		RT9ACP	32.	14.67	31.	14.	14.	.39	
	HYDROGRAPH AT								
+		DA9B	560.	12.50	109.	30.	30.	.58	
	2 COMBINED AT								
+		CB9B	564.	12.50	135.	44.	44.	.97	
	ROUTED TO								
+		RT9B	564.	12.58	135.	44.	44.	.97	
	HYDROGRAPH AT								
+		DA9C	479.	12.25	67.	19.	19.	.21	
	3 COMBINED AT								
+		CB9C	1482.	12.50	323.	99.	99.	1.85	
	ROUTED TO								
+		RT9C	1479.	12.58	324.	98.	98.	1.85	
	HYDROGRAPH AT								
+		DA9D	231.	12.25	32.	9.	9.	.15	
	3 COMBINED AT								
+		CB9D	1671.	12.58	362.	109.	109.	2.33	
	DIVERSION TO								
+		DVT02	58.	12.58	6.	2.	2.	2.33	

	HYDROGRAPH AT								
+		DV9D1	1613.	12.58	356.	107.	107.	2.33	
	ROUTED TO								
+		RT9D1	1612.	12.58	357.	107.	107.	2.33	
	DIVERSION TO								
+		DVT03	296.	12.58	66.	19.	19.	2.33	
	HYDROGRAPH AT								
+		DV9D2	1316.	12.58	290.	88.	88.	2.33	
	ROUTED TO								
+		RT9D2	1309.	12.67	290.	88.	88.	2.33	
	HYDROGRAPH AT								
+		DA9G	435.	12.25	61.	17.	17.	.25	
	ROUTED TO								
+		RT9G	430.	12.42	62.	17.	17.	.25	
	HYDROGRAPH AT								
+		DA9H	684.	12.25	93.	26.	26.	.36	
	3 COMBINED AT								
+		CB9H	2021.	12.50	442.	132.	132.	2.94	
	ROUTED TO								
+		RT9H	2018.	12.58	444.	132.	132.	2.94	
	HYDROGRAPH AT								
+		RN9D2	296.	12.58	66.	19.	19.	.00	
	ROUTED TO								
+		RRN9D2	294.	12.75	67.	19.	19.	.00	
	HYDROGRAPH AT								
+		DA9E	338.	12.25	46.	13.	13.	.19	
	2 COMBINED AT								
+		CM9E	516.	12.42	112.	32.	32.	.19	
	ROUTED TO								
+		RT9E	510.	12.42	112.	32.	32.	.19	
	HYDROGRAPH AT								
+		DA9I	217.	12.25	30.	8.	8.	.16	
	3 COMBINED AT								
+		CB9I	2651.	12.50	586.	172.	172.	3.29	
	ROUTED TO								
+		SBB	206.	14.83	193.	79.	79.	3.29	
+									1391.40 14.83
	DIVERSION TO								
+		DVT05	144.	14.83	132.	50.	50.	3.29	
	HYDROGRAPH AT								
+		DVDSB	62.	14.83	61.	29.	29.	3.29	
	HYDROGRAPH AT								
+		ANBC	402.	12.33	64.	18.	18.	.00	

+		RTRN5C	403.	12.42	66.	19.	19.	.00	
	HYDROGRAPH AT								
+		DA5E	224.	12.25	31.	9.	9.	.13	
	HYDROGRAPH AT								
+		DA6D	328.	12.42	53.	15.	15.	.28	
	ROUTED TO								
+		RT6D	327.	12.42	53.	15.	15.	.28	
	3 COMBINED AT								
+		CB6D	918.	12.42	149.	42.	42.	.41	
	ROUTED TO								
+		RTCB	910.	12.42	149.	42.	42.	.41	
	HYDROGRAPH AT								
+		DA8F	143.	12.25	19.	5.	5.	.08	
	2 COMBINED AT								
+		CB8F	1029.	12.42	168.	47.	47.	.49	
	ROUTED TO								
+		RTCB8F	1027.	12.42	168.	47.	47.	.49	
	HYDROGRAPH AT								
+		RN9D1	58.	12.58	6.	2.	2.	.00	
	ROUTED TO								
+		RRN9D1	56.	12.67	6.	2.	2.	.00	
	HYDROGRAPH AT								
+		DA8G	214.	12.25	29.	8.	8.	.12	
	3 COMBINED AT								
+		CB8F	1227.	12.42	204.	57.	57.	.61	
	ROUTED TO								
+		DBA	48.	15.17	48.	23.	23.	.61	
+									1406.86 15.17
	ROUTED TO								
+		RTDBA	48.	15.25	48.	23.	23.	.61	
	2 COMBINED AT								
+		CBAB	110.	15.00	109.	52.	52.	3.90	
	ROUTED TO								
+		RTAB	110.	15.00	109.	52.	52.	3.90	
	HYDROGRAPH AT								
+		DA10A	177.	12.25	24.	7.	7.	.12	
	ROUTED TO								
+		RT10A	176.	12.33	25.	7.	7.	.12	

	HYDROGRAPH AT								
+		DA10B	177.	12.25	24.	7.	7.	.12	
	2 COMBINED AT								
+		CB10B	350.	12.33	49.	14.	14.	.24	
	DIVERSION TO								
+		DVT	350.	.08	49.	14.	14.	.24	
	HYDROGRAPH AT								
+		DV10B	0.	.08	0.	0.	0.	.24	
	ROUTED TO								
+		RT10B	0.	.08	0.	0.	0.	.24	
	HYDROGRAPH AT								
+		DA10C	214.	12.25	29.	8.	8.	.12	
	2 COMBINED AT								
+		CB10C	214.	12.25	29.	8.	8.	.36	
	2 COMBINED AT								
+		CB10C2	250.	12.33	127.	60.	60.	4.26	
	ROUTED TO								
+		RT10C	250.	12.33	127.	60.	60.	4.26	
	HYDROGRAPH AT								
+		RN10B	350.	12.33	49.	14.	14.	.00	
	ROUTED TO								
+		RT10B2	342.	12.33	49.	14.	14.	.00	
	HYDROGRAPH AT								
+		DA11A	166.	12.25	23.	6.	6.	.10	
	2 COMBINED AT								
+		CB11A	503.	12.33	72.	20.	20.	.10	
	ROUTED TO								
+		DBD	45.	13.42	41.	18.	18.	.10	
+									1395.82 13.42
	ROUTED TO								
+		RT11A	45.	13.42	41.	18.	18.	.10	

	HYDROGRAPH AT								
+		DA11B	177.	12.25	24.	7.	7.	.12	
	ROUTED TO								
+		DB11B	65.	12.67	24.	7.	7.	.12	
+									1389.28 12.67
	3 COMBINED AT								
+		CB11B	349.	12.33	190.	84.	84.	4.48	
	ROUTED TO								
+		RT11B	348.	12.42	190.	84.	84.	4.48	
	HYDROGRAPH AT								
+		DA11D	85.	13.08	26.	7.	7.	.13	
	2 COMBINED AT								
+		CB11D	386.	12.42	216.	91.	91.	4.61	
	ROUTED TO								
+		RT11D	386.	12.50	216.	91.	91.	4.61	
	HYDROGRAPH AT								
+		DA11C	125.	13.33	46.	13.	13.	.22	
	2 COMBINED AT								
+		CB11C	455.	13.00	262.	103.	103.	4.83	
	ROUTED TO								
+		RT11C	455.	13.00	262.	103.	103.	4.83	
	HYDROGRAPH AT								
+		DA11B	132.	13.25	48.	13.	13.	.18	
	2 COMBINED AT								
+		CB11B	582.	13.08	310.	117.	117.	5.01	

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

APPENDIX D

INTERCEPTOR DRAIN
WITH DETENTION BASIN C
CONCEPT DESIGN

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

  1           ID       OUTERLOOP HIGHWAY OFFSITE DRAINAGE     100 YEAR
  2           ID       23RD AVENUE TO 7TH AVENUE MODIFIED TO 35TH AVE BY DCDD
  3           ID       SEPTEMBER 6, 1989              FILE:  S6H.DAT
              *DIAGRAM
  4           IT      5                    288
  5           IO      5

  6           KK    DA8B
  7           KM        RUNOFF FROM SUB-BASIN 8B
  8           BA    0.12
  9           PH                  0.68    1.37    2.40    2.65    2.82    3.14    3.51    3.90
 10           LS             89
 11           UD    0.29

 12           KK    RT8B
 13           KM        ROUTE 8B TO ROSE GARDEN
 14           RK    1350  0.0046   0.035           TRAP       0      20

 15           KK    DA8C
 16           KM        RUNOFF FROM SUB-BASIN 8C
 17           BA    0.21
 18           LS             80
 19           UD    0.35

 20           KK    CB8C
 21           KM        COMBINE ROUTED 8B WITH 8C
 22           HC      2

 23           KK    DV8C
 24           KM        DIVERT FLOWS SOUTH ON 7TH AVENUE
 25           DT   DVT01
 26           DI      0     100     500    1000    2000
 27           DQ      0     100     416     778    1486

 28           KK    RT8C
 29           KM        ROUTE REMAINING FLOW WEST ON ROSE GARDEN
 30           RK    1000  0.0042   0.030           TRAP       8       2

 31           KK    DA8A
 32           KM        RUNOFF FROM SUB-BASIN 8A
 33           BA    0.67
 34           LS             80
 35           UD    0.50

 36           KK    RT8A
 37           KM        ROUTE 8A TO CULVERT BELOW DEER VALLEY AIRPORT
 38           RK    3900  0.0042   0.030           TRAP       8       2

 39           KK    DA9A
 40           KM        RUNOFF FROM SUB-BASIN 9A
 41           BA    0.39
 42           LS             80
 43           UD    0.31
```

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

 44           KK    RT9A
 45           KM        ROUTE 9A THROUGH CAP STRUCTURE
 46           RS      1    STOR      -1       0
 47           SV      0      12      55      173     318     493     697     930
 48           SE   1515    1516    1517    1518    1519    1520    1521    1522
 49           SL   1515     4.9     0.7     0.5
 50           SS   1521     100     3.0     1.5

 51           KK  RT9ACP
 52           KM        ROUTE 9A CAP RUNOFF THROUGH 9B
 53           RK    8200  0.0067   0.035            TRAP      12       2

 54           KK    DA9B
 55           KM        RUNOFF FROM SUB-BASIN 9B
 56           BA    0.58
 57           LS              80
 58           UD    0.52

 59           KK    CB9B
 60           KM        COMBINE ROUTED 9A WITH 9B RUNOFF
 61           HC      2

 62           KK    RT9B
 63           KM        ROUTE 9B TO THE CULVERT BELOW DEER VALLEY AIRPORT
 64           RK    2250  0.0046   0.024            CIRC    4.50

 65           KK    DA9C
 66           KM        RUNOFF FROM SUB-BASIN 9C
 67           BA    0.21
 68           LS              96
 69           UD    0.29

 70           KK    CB9C
 71           KM        COMBINE ROUTED 6A AND 9B WITH 9C
 72           HC      3

 73           KK    RT9C
 74           KM        ROUTE 9C TO ROSE GARDEN
 75           RK    2750  0.0067   0.045            TRAP      30       2

 76           KK    DA9D
 77           KM        RUNOFF FROM SUB-BASIN 9D
 78           BA    0.15
 79           LS              83
 80           UD    0.29

 81           KK    CB9D
 82           KM        COMBINE ROUTED 8C,AND 9B WITH 9D
 83           HC      3
```

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

 84         KK   DV9D1
 85         KM        DIVERT FLOWS SOUTH ON 14TH AVENUE
 86         DT   DVT02
 87         DI       0     300     500    1000    2000
 88         DQ       0       0       1      16      78

 89         KK   RT9D1
 90         KM        ROUTE REMAINING FLOW WEST ON ROSE GARDEN
 91         RK    1400  0.0042   0.030            TRAP       8      20

 92         KK   DV9D2
 93         KM        DIVERT FLOWS SOUTH ON 15TH AVENUE
 94         DT   DVT03
 95         DI       0     100     250     350     499     984    1922
 96         DQ       0      12      50      76     112     201     343

 97         KK   RT9D2
 98         KM        ROUTE THE REMAINING FLOW WEST TO 19TH AVENUE
 99         RK    2100  0.0042   0.030            TRAP       8      20

100         KK   DA9G
101         KM        RUNOFF FROM SUB-BASIN 9G
102         BA   0.25
103         LS             87
104         UD   0.30

105         KK   RT9G
106         KM        ROUTE 9G SOUTH TO ROSE GARDEN
107         RK    2650  0.0046   0.016            TRAP       0      50

108         KK   DA9H
109         KM        RUNOFF FROM SUB-BASIN 9H
110         BA   0.36
111         LS             89
112         UD   0.29

113         KK   CB9H
114         KM        COMBINE ROUTED 9D2 AND 9G WITH 9H
115         HC       3

116         KK   RT9H
117         KM        ROUTE 9H SOUTH TO DETENTION BASIN B
118         RK    2600  0.0046   0.016            TRAP       0      50

119         KK   RN9D2
120         KM        RETRIEVE DIVERSION FROM ROSE GARDEN AND 15TH AVENUE
121         DR   DVT03

122         KK  RRN9D2
123         KM        ROUTE RN9D2
124         RK    2400  0.0045   0.016            TRAP       0      50
```

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

 125          KK    DA9E
 126          KM        RUNOFF FROM SUB-BASIN 9E
 127          BA    0.19
 128          LS              87
 129          UD    0.29

 130          KK    CN9E
 131          KM        COMBINE ROUTED AN9D2 AND 9E
 132          HC       2

 133          KK    RT9E
 134          KM        ROUTE 9E TO DETENTION BASIN B
 135          RK    1300  0.0067   0.035           TRAP       8       2

 136          KK    DA9I
 137          KM        RUNOFF FROM SUB-BASIN 9I INTO DETENTION BASIN B
 138          BA    0.16
 139          LS              80
 140          UD    0.29

 141          KK    CB9I
 142          KM        COMBINE ROUTED 9H AND 9E WITH 9I
 143          HC       3

 144          KK     DBB
 145          KM        ROUTE FLOWS THROUGH BASIN B, DUEL-STAGE OUTLET
 146          RS       1    STOR      -1       0
 147          SV       0     8.2    29.8    64.1   106.3   168.1   179.8   192.6   212.9   242.0
 148          SV   268.5   315.0
 149          SQ       0      10      20      30      40      54      96     138     180     223
 150          SQ     247     337
 151          SE  1367.6  1369.4  1371.7  1375.2  1379.5  1385.8  1387.0  1388.3  1390.0  1392.3
 152          SE  1394.4  1398.0

 153          KK   DVDBB
 154          KM        DIVERT UPPER STAGE OUTLET TO GRAVITY DRAIN
 155          DT   DVT05
 156          DI       0      10      20      30      40      54      96     138     180     223
 157          DI     247     337
 158          DQ       0       0       0       0       0       0      40      80     120     160
 159          DQ     181     267

 160          KK    RNBC
 161          KM        RETRIEVE DIVERSION FROM 7TH & ROSE GARDEN
 162          DR   DVT01

 163          KK  RTRNBC
 164          KM        ROUTE DIVERSION TO BEARDSLEY
 165          RK    2600  0.0046   0.025           TRAP       0      50
```

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

 166          KK   DABE
 167          KM       RUNOFF FROM SUB-BASIN BE
 168          BA   0.13
 169          LS            86
 170          UD   0.29

 171          KK   DABD
 172          KM       RUNOFF FROM SUB-BASIN BD
 173          BA   0.28
 174          LS            80
 175          UD   0.38

 176          KK   RT8D
 177          KM       ROUTE WEST TO 7TH AVE
 178          RK   1300  0.0033   0.018          TRAP     12      0

 179          KK   CB8D
 180          KM       COMBINE BE WITH ROUTED RN8C AND ROUTED RT8D
 181          HC     3

 182          KK   RTCB8D
 183          KM       ROUTE COMBINED HYDROGRAPH WEST TO 14TH AVE
 184          RK   1800  0.0033   0.018          TRAP     16      0

 185          KK   DABF
 186          KM       RUNOFF FROM SUB-BASIN BF
 187          BA   0.08
 188          LS            87
 189          UD   0.29

 190          KK   CB8F
 191          KM       COMBINE ROUTED CB8D AND BF
 192          HC     2

 193          KK  RTCB8F
 194          KM       ROUTE COMBINED HYDROGRAPH TO DET. BASIN A
 195          RK    300  0.0033   0.018          TRAP     18      0

 196          KK  RN9D1
 197          KM       RETRIEVE DIVERSION FROM ROSE GARDEN AND 14TH AVENUE
 198          DR  DVT02

 199          KK  RRN9D1
 200          KM       ROUTE RN9D1 TO DETENTION BASIN A
 201          RK   2800  0.0044   0.016          TRAP      0     50

 202          KK   DAB6
 203          KM       RUNOFF FROM SUB-BASIN B6
 204          BA   0.12
 205          LS            87
 206          UD   0.29
```

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

 207          KK    CB8F
 208          KM        COMBINE ROUTED BF AND RN9D1 WITH 6B
 209          HC       3

 210          KK     DBA
 211          KM        ROUTE FLOWS THROUGH BASIN A, 42" OUTLET
 212          RS       1    STOR      -1       0
 213          SV       0     2.7   113.6     125
 214          SE    1392  1393.2    1412    1414
 215          SL    1392    2.64     0.6     0.5
 216          SS    1412     100     3.0     1.5

 217          KK   RTDBA
 218          KM        ROUTE DETENTION BASIN A TO DETENTION BASIN B
 219          RK    5000  0.0050   0.012           CIRC       3

 220          KK    CBAB
 221          KM        COMBINE DETENTION BASINS A AND B OUTFLOWS
 222          HC       2

 223          KK    RTAB
 224          KM        ROUTE CBAB TO 23RD AVENUE
 225          RK    1385 0.00152   0.012           CIRC       5

 226          KK   DA10A
 227          KM        RUNOFF FROM SUB-BASIN 10A
 228          BA    0.12
 229          LS              82
 230          UD    0.29

 231          KK   RT10A
 232          KM        ROUTE 10A WEST TO 23RD AVENUE
 233          RK    1100  0.0042   0.016           TRAP       0      50

 234          KK   DA10B
 235          KM        RUNOFF FROM SUB-BASIN 10B
 236          BA    0.12
 237          LS              82
 238          UD    0.29

 239          KK   CB10B
 240          KM        COMBINE 10A WITH 10B
 241          HC       2

 242          KK   DV10B
 243          KM        DIVERT WEST ALONG ROSE GARDEN
 244          DT     DVT
 245          DI       0     500    1000    2000
 246          DQ       0     500    1000    2000
```

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

 247          KK   RT10B
 248          KM        ROUTE REMAINING FLOW SOUTH TO BEARDSLEY
 249          RK    2600  0.0046   0.016            TRAP       0      50

 250          KK   DA10C
 251          KM        RUNOFF FROM SUB-BASIN 10C
 252          BA    0.12
 253          LS              87
 254          UD    0.29

 255          KK   CB10C
 256          KM        COMBINE ROUTED 10B WITH 10C
 257          HC       2

 258          KK  CB10C2
 259          KM        COMBINE OUTFLOW OF DETENTION BASINS A & B WITH CB10C
 260          HC       2

 261          KK   RT10C
 262          KM        ROUTE FLOW WEST TO WEST OF INTEL PROPERTY
 263          RK    1135 0.00152   0.012            CIRC       8

 264          KK   RH10B
 265          KM        RETRIEVE DIVERSION FROM ROSE GARDEN AND 23RD AVENUE
 266          DR     DVT

 267          KK  RT10B2
 268          KM        ROUTE RETRIEVE WEST TO I-17
 269          RK    1100  0.0042   0.016            TRAP       0      50

 270          KK   DA11A
 271          KM        RUNOFF FROM SUB-BASIN 11A
 272          BA    0.10
 273          LS              85
 274          UD    0.29

 275          KK   CB11A
 276          KM        COMBINE 11A WITH ROUTED 10B2
 277          HC       2

 278          KK     DBD
 279          KM        ROUTE 11A & 10B INFLOWS THRU DETENTION BASIN D
 280          RS       1    STOR      -1       0
 281          SV       0     0.7    25.4    30.0
 282          SE    1381  1382.5  1396.0  1398.0
 283          SL    1381    2.41     0.6     0.5
 284          SS    1397     100     3.0     1.5

 285          KK   RT11A
 286          KM        ROUTE DETENTION BASIN D SOUTH
 287          RK    2500  0.0046   0.012            CIRC       3
```

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

 288          KK   DA11B
 289          KM        RUNOFF FROM SUB-BASIN 11B
 290          BA    0.12
 291          LS              B2
 292          UD    0.29

 293          KK   DB11B
 294          KM        ROUTE 11B THROUGH SMALL DETENTION BASIN AT INTEL
 295          RS       1    STOR      -1       0
 296          SV       0    0.35     1.9    3.07    4.56    6.00
 297          SE    1383    1384    1386    1388    1390    1392
 298          SL    1383    7.07     0.6     0.5
 299          SS    1390     100     3.0     1.5

 300          KK   CB11B
 301          KM        COMBINE 11B WITH ROUTED DETENTION BASIN D OUTFLOW AND FLOWS FROM EAST
 302          HC       3

 303          KK   RT11B
 304          KM        ROUTE WEST TO P11D
 305          RK    1400 0.00152   0.012            CIRC       8

 306          KK   DA111D
 307          KM        RUNOFF FROM SUB-BASIN P11D
 308          BA    0.13
 309          LS              B2
 310          UD    1.01

 311          KK   CB11D
 312          KM        COMBINE HYDROGRAPHS P11D AND OUTFLOW FROM DETENTION BASIN AT INTEL
 313          HC       2

 314          KK   RT11D
 315          KM        ROUTE HYDROGRAPH TO DA P11C
 316          RK    1950  0.0044   0.012            TRAP       8       2

 317          KK   DA11C
 318          KM        RUNOFF FROM SUB-BASIN P11C
 319          BA    0.22
 320          LS              B3
 321          UD    1.27

 322          KK   CB11C
 323          KM        COMBINE HYDROGRAPHS AT THE BASE OF P11C
 324          HC       2

 325          KK   RT11C
 326          KM        ROUTE P11C TO P11B
 327          RK    1950  0.0044   0.012            TRAP       8       2
```

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

 328          KK   DA11B
 329          KM        RUNOFF FROM DA P11B
 330          BA    0.18
 331          LS              90
 332          UD    1.27

 333          KK   CB11B
 334          KM        COMBINE HYDROGRAPHS AT P11B (TO BASIN C)
 335          HC       2

 336          KK    DVBC
 337          KM   DIVERT FLOW TO DETENTION BASIN C
 338          DT    DVSW
 339          DI       0     150     250     251     750
 340          DQ       0     150     250     250     250

 341          KK    RTBC
 342          KM   ROUTE FLOW THROUGH DETENTION BASIN C (33" ORIFICE)
 343          KO       1
 344          RS       1    STOR      -1       0
 345          SA    2.15    2.24    2.32    2.52    2.71    2.91    3.12    3.67
 346          SE    1338    1339    1340    1342    1344    1346    1348    1353
 347          SL    1339    5.94      .6      .5
 348          SS    1352      40     2.7     1.5

 349          KK    RVSW
 350          KM   RETRIEVE BASIN BYPASS FLOW DVSW
 351          DR    DVSW

 352          KK    CBSW
 353          KM   COMBINE TOTAL INFLOW TO SCATTER WASH
 354          KO       1
 355          HC       2
 356          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

NO.       (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

 6         DA8B
             V
             V
12         RT8B
             .
             .
15           .        DA8C
             .          .
             .          .
20         CB8C............
             .
             .
25           .-------)   DVT01
23         DV8C
             V
             V
28         RT8C
             .
             .
31           .        DA8A
             .          V
             .          V
36           .        RT8A
             .          .
             .          .
39           .          .        DA9A
             .          .          V
             .          .          V
44           .          .        RT9A
             .          .          V
             .          .          V
51           .          .      RT9ACP
             .          .          .
             .          .          .
54           .          .          .        DA9B
             .          .          .          .
             .          .          .          .
59           .          .      CB9B............
             .          .          V
             .          .          V
62           .          .      RT9B
             .          .          .
             .          .          .
```

```
65        .         .         .      DA9C
          .         .         .         .
          .         .         .         .
70        .      CB9C......................
          .         V
          .         V
73        .      RT9C
          .         .
          .         .
76        .         .      DA9D
          .         .         .
          .         .         .
81     CB9D......................
          .
          .
86        .-------> DVT02
84     DV9D1
          V
          V
89     RT9D1
          .
          .
94        .-------> DVT03
92     DV9D2
          V
          V
97     RT9D2
          .
          .
100       .      DA9G
          .         V
          .         V
105       .      RT9G
          .         .
          .         .
108       .         .      DA9H
          .         .         .
          .         .         .
113    CB9H......................
          V
          V
116    RT9H
          .
          .
121       .         .<-------  DVT03
119       .     RN9D2
          .         V
          .         V
122       .    RRN9D2
          .         .
          .         .
125       .         .      DA9E
          .         .         .
          .         .         .
130       .     CM9E............
          .         V
          .         V
133       .     RT9E
          .         .
          .         .
```

```
136        .          .        DA9I
           .          .          .
           .          .          .
141     CB9I.......................
           V
           V
144     DBB
           .
           .
155        .-------> DVT05
153     DVDBB
           .
           .
162        .          .<-------  DVT01
160        .       RHBC
           .          V
           .          V
163        .      RTRHBC
           .          .
           .          .
166        .          .        DABE
           .          .          .
           .          .          .
171        .          .          .        DABD
           .          .          .          V
           .          .          .          V
176        .          .          .        RTBD
           .          .          .          .
           .          .          .          .
179        .       CBBD.......................
           .          V
           .          V
182        .       RTCB
           .          .
           .          .
185        .          .        DABF
           .          .          .
           .          .          .
190        .       CBBF............
           .          V
           .          V
193        .      RTCBBF
           .          .
           .          .
198        .          .          .<-------  DVT02
196        .          .       RN9D1
           .          .          V
           .          .          V
199        .          .      RRN9D1
           .          .          .
           .          .          .
202        .          .          .        DABG
           .          .          .          .
           .          .          .          .
207        .       CBBF.......................
           .          V
           .          V
210        .       DBA
           .          V
           .          V
```

```
217          .      RTDBA
             .          .
             .          .
220       CBAB............
             V
             V
223       RTAB
             .
             .
226          .      DA10A
             .          V
             .          V
231          .      RT10A
             .          .
             .          .
234          .          .      DA10B
             .          .          .
             .          .          .
239          .      CB10B............
             .          .
             .          .
244          .          .-------->     DVT
242          .      DV10B
             .          V
             .          V
247          .      RT10B
             .          .
             .          .
250          .          .      DA10C
             .          .          .
             .          .          .
255          .      CB10C............
             .          .
             .          .
258       CB10C2...........
             V
             V
261       RT10C
             .
             .
266          .          .<--------     DVT
264          .      RW10B
             .          V
             .          V
267          .     RT10B2
             .          .
             .          .
270          .          .      DA11A
             .          .          .
             .          .          .
275          .      CB11A............
             .          V
             .          V
278          .        DBD
             .          V
             .          V
285          .      RT11A
             .          .
             .          .
288          .          .      DA11B
```

```
                .          .          V
                .          .          V
293             .          .       DB11B
                .          .          .
                .          .          .
306         CB11B.......................
                V
                V
303         RT11B
                .
                .
306             .       DA11D
                .          .
                .          .
311         CB11D............
                V
                V
314         RT11D
                .
                .
317             .       DA11C
                .          .
                .          .
322         CB11C............
                V
                V
325         RT11C
                .
                .
328             .       DA11B
                .          .
                .          .
333         CB11B............
                .
                .
338             .-------)    DVSW
336         DVBC
                V
                V
341         RTBC
                .
                .
351             .          .<-------    DVSW
349             .       RVSW
                .          .
                .          .
352         CBSW............
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
                                    ****
                 FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
       U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                    ****


                 OUTERLOOP HIGHWAY OFFSITE DRAINAGE     100 YEAR
                 23RD AVENUE TO 7TH AVENUE MODIFIED TO 35TH AVE BY DCCO
                 SEPTEMBER 6, 1989                FILE:  S6N.DAT

  5 IO       OUTPUT CONTROL VARIABLES
                 IPRNT          5  PRINT CONTROL
                 IPLOT          0  PLOT CONTROL
                 QSCAL         0.  HYDROGRAPH PLOT SCALE

  IT         HYDROGRAPH TIME DATA
                 NMIN           5  MINUTES IN COMPUTATION INTERVAL
                 IDATE      1   0  STARTING DATE
                 ITIME       0000  STARTING TIME
                   NQ        288  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE     1   0  ENDING DATE
                 NDTIME      2355  ENDING TIME

              COMPUTATION INTERVAL     .08 HOURS
                  TOTAL TIME BASE   23.92 HOURS

        ENGLISH UNITS

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN      116. TO      951.
               THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
               THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)
```

** ***

```
            **************
            *            *
341 KK      *     RTBC   *
            *            *
            **************

343 KO        OUTPUT CONTROL VARIABLES
                   IPRNT          1  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

            HYDROGRAPH ROUTING DATA

344 RS        STORAGE ROUTING
                   NSTPS          1  NUMBER OF SUBREACHES
                    ITYP       STOR  TYPE OF INITIAL CONDITION
                   RSVRIC      -1.00  INITIAL CONDITION
                       X        .00 WORKING R AND D COEFFICIENT

345 SA             AREA        2.2       2.2       2.3       2.5       2.7       2.9       3.1       3.7

346 SE        ELEVATION     1338.00   1339.00   1340.00   1342.00   1344.00   1346.00   1348.00   1353.00

347 SL        LOW-LEVEL OUTLET
                   ELEVL     1339.00  ELEVATION AT CENTER OF OUTLET
                   CAREA        5.94  CROSS-SECTIONAL AREA
                    COOL         .60  COEFFICIENT
                    EXPL         .50  EXPONENT OF HEAD

348 SS        SPILLWAY
                    CREL     1352.00  SPILLWAY CREST ELEVATION
                   SPWID       40.00  SPILLWAY WIDTH
                    COOW        2.70  WEIR COEFFICIENT
                    EXPW        1.50  EXPONENT OF HEAD

                                   ***

                          COMPUTED STORAGE-ELEVATION DATA

      STORAGE        .00      2.19      4.47      9.31     14.54     20.16     26.19     43.15
    ELEVATION    1338.00   1339.00   1340.00   1342.00   1344.00   1346.00   1348.00   1353.00

                          COMPUTED OUTFLOW-ELEVATION DATA

      OUTFLOW        .00       .00     33.78     37.37     41.81     47.45     54.85     64.98     79.71    103.06
    ELEVATION    1338.00   1339.00   1340.40   1340.71   1341.14   1341.76   1342.68   1344.17   1346.78   1352.00

      OUTFLOW     103.31    104.39    106.90    111.44    118.60    129.01    143.25    161.91    185.62    214.95
    ELEVATION    1352.01   1352.05   1352.10   1352.17   1352.26   1352.37   1352.50   1352.65   1352.81   1353.00
```

COMPUTED STORAGE-OUTFLOW-ELEVATION DATA

STORAGE	.00	2.19	4.47	5.40	6.14	7.18	8.70	9.31	11.05	14.54
OUTFLOW	.00	.00	28.58	33.78	37.37	41.81	47.45	49.51	54.85	63.91
ELEVATION	1338.00	1339.00	1340.00	1340.40	1340.71	1341.14	1341.76	1342.00	1342.68	1344.00

STORAGE	15.00	20.16	22.45	26.19	39.53	39.59	39.70	39.89	40.15	40.47
OUTFLOW	64.98	75.62	79.71	85.75	103.06	103.31	104.39	106.90	111.44	118.60
ELEVATION	1344.17	1346.00	1346.78	1348.00	1352.00	1352.01	1352.05	1352.10	1352.17	1352.26

STORAGE	40.86	41.33	41.86	42.47	43.15
OUTFLOW	129.01	143.25	161.91	185.62	214.95
ELEVATION	1352.37	1352.50	1352.65	1352.81	1353.00

****

HYDROGRAPH AT STATION RTBC

****

DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE	*	DA	MON	HRMN	ORD	OUTFLOW	STORAGE	STAGE
1		0000	1	0.	2.2	1339.0	*	1		0800	97	0.	2.2	1339.0	*	1		1600	193	79.	21.9	1346.6
1		0005	2	0.	2.2	1339.0	*	1		0805	98	0.	2.2	1339.0	*	1		1605	194	78.	21.4	1346.4
1		0010	3	0.	2.2	1339.0	*	1		0810	99	0.	2.2	1339.0	*	1		1610	195	77.	20.8	1346.2
1		0015	4	0.	2.2	1339.0	*	1		0815	100	0.	2.2	1339.0	*	1		1615	196	76.	20.3	1346.1
1		0020	5	0.	2.2	1339.0	*	1		0820	101	0.	2.2	1339.0	*	1		1620	197	75.	19.8	1345.9
1		0025	6	0.	2.2	1339.0	*	1		0825	102	0.	2.2	1339.0	*	1		1625	198	74.	19.3	1345.7
1		0030	7	0.	2.2	1339.0	*	1		0830	103	0.	2.2	1339.0	*	1		1630	199	73.	18.8	1345.5
1		0035	8	0.	2.2	1339.0	*	1		0835	104	0.	2.2	1339.0	*	1		1635	200	72.	18.3	1345.3
1		0040	9	0.	2.2	1339.0	*	1		0840	105	0.	2.2	1339.0	*	1		1640	201	71.	17.8	1345.2
1		0045	10	0.	2.2	1339.0	*	1		0845	106	0.	2.2	1339.0	*	1		1645	202	70.	17.3	1345.0
1		0050	11	0.	2.2	1339.0	*	1		0850	107	0.	2.2	1339.0	*	1		1650	203	69.	16.8	1344.8
1		0055	12	0.	2.2	1339.0	*	1		0855	108	0.	2.2	1339.0	*	1		1655	204	68.	16.4	1344.7
1		0100	13	0.	2.2	1339.0	*	1		0900	109	0.	2.2	1339.0	*	1		1700	205	67.	15.9	1344.5
1		0105	14	0.	2.2	1339.0	*	1		0905	110	0.	2.2	1339.0	*	1		1705	206	66.	15.4	1344.3
1		0110	15	0.	2.2	1339.0	*	1		0910	111	0.	2.2	1339.0	*	1		1710	207	65.	15.0	1344.2
1		0115	16	0.	2.2	1339.0	*	1		0915	112	0.	2.2	1339.0	*	1		1715	208	64.	14.5	1344.0
1		0120	17	0.	2.2	1339.0	*	1		0920	113	0.	2.2	1339.0	*	1		1720	209	63.	14.1	1343.8
1		0125	18	0.	2.2	1339.0	*	1		0925	114	0.	2.2	1339.0	*	1		1725	210	62.	13.7	1343.7
1		0130	19	0.	2.2	1339.0	*	1		0930	115	0.	2.2	1339.0	*	1		1730	211	61.	13.3	1343.5
1		0135	20	0.	2.2	1339.0	*	1		0935	116	0.	2.2	1339.0	*	1		1735	212	60.	12.8	1343.4

1	0140	21	0.	2.2	1339.0	*	1	0940	117	0.	2.2	1339.0	*	1	1740	213	58.	12.4	1343.2
1	0145	22	0.	2.2	1339.0	*	1	0945	118	0.	2.2	1339.0	*	1	1745	214	57.	12.0	1343.1
1	0150	23	0.	2.2	1339.0	*	1	0950	119	0.	2.2	1339.0	*	1	1750	215	56.	11.6	1342.9
1	0155	24	0.	2.2	1339.0	*	1	0955	120	0.	2.2	1339.0	*	1	1755	216	55.	11.3	1342.8
1	0200	25	0.	2.2	1339.0	*	1	1000	121	0.	2.2	1339.0	*	1	1800	217	54.	10.9	1342.6
1	0205	26	0.	2.2	1339.0	*	1	1005	122	0.	2.2	1339.0	*	1	1805	218	53.	10.5	1342.5
1	0210	27	0.	2.2	1339.0	*	1	1010	123	0.	2.2	1339.0	*	1	1810	219	52.	10.2	1342.3
1	0215	28	0.	2.2	1339.0	*	1	1015	124	0.	2.2	1339.0	*	1	1815	220	51.	9.8	1342.2
1	0220	29	0.	2.2	1339.0	*	1	1020	125	0.	2.2	1339.0	*	1	1820	221	50.	9.5	1342.1
1	0225	30	0.	2.2	1339.0	*	1	1025	126	0.	2.2	1339.0	*	1	1825	222	49.	9.1	1341.9
1	0230	31	0.	2.2	1339.0	*	1	1030	127	0.	2.2	1339.0	*	1	1830	223	48.	8.8	1341.8
1	0235	32	0.	2.2	1339.0	*	1	1035	128	0.	2.2	1339.0	*	1	1835	224	47.	8.5	1341.7
1	0240	33	0.	2.2	1339.0	*	1	1040	129	0.	2.2	1339.0	*	1	1840	225	45.	8.1	1341.5
1	0245	34	0.	2.2	1339.0	*	1	1045	130	0.	2.2	1339.0	*	1	1845	226	44.	7.8	1341.4
1	0250	35	0.	2.2	1339.0	*	1	1050	131	0.	2.2	1339.0	*	1	1850	227	43.	7.5	1341.3
1	0255	36	0.	2.2	1339.0	*	1	1055	132	0.	2.2	1339.0	*	1	1855	228	42.	7.2	1341.2
1	0300	37	0.	2.2	1339.0	*	1	1100	133	0.	2.2	1339.0	*	1	1900	229	41.	7.0	1341.0
1	0305	38	0.	2.2	1339.0	*	1	1105	134	0.	2.2	1339.0	*	1	1905	230	40.	6.7	1340.9
1	0310	39	0.	2.2	1339.0	*	1	1110	135	0.	2.2	1339.0	*	1	1910	231	38.	6.4	1340.8
1	0315	40	0.	2.2	1339.0	*	1	1115	136	0.	2.2	1339.0	*	1	1915	232	37.	6.1	1340.7
1	0320	41	0.	2.2	1339.0	*	1	1120	137	0.	2.2	1339.0	*	1	1920	233	36.	5.9	1340.6
1	0325	42	0.	2.2	1339.0	*	1	1125	138	0.	2.2	1339.0	*	1	1925	234	35.	5.6	1340.5
1	0330	43	0.	2.2	1339.0	*	1	1130	139	0.	2.2	1339.0	*	1	1930	235	34.	5.4	1340.4
1	0335	44	0.	2.2	1339.0	*	1	1135	140	0.	2.2	1339.0	*	1	1935	236	33.	5.2	1340.3
1	0340	45	0.	2.2	1339.0	*	1	1140	141	0.	2.2	1339.0	*	1	1940	237	31.	5.0	1340.2
1	0345	46	0.	2.2	1339.0	*	1	1145	142	0.	2.2	1339.0	*	1	1945	238	30.	4.7	1340.1
1	0350	47	0.	2.2	1339.0	*	1	1150	143	0.	2.2	1339.0	*	1	1950	239	29.	4.5	1340.0
1	0355	48	0.	2.2	1339.0	*	1	1155	144	0.	2.2	1339.0	*	1	1955	240	27.	4.4	1339.9
1	0400	49	0.	2.2	1339.0	*	1	1200	145	0.	2.2	1339.0	*	1	2000	241	25.	4.2	1339.9
1	0405	50	0.	2.2	1339.0	*	1	1205	146	0.	2.2	1339.0	*	1	2005	242	23.	4.0	1339.8
1	0410	51	0.	2.2	1339.0	*	1	1210	147	0.	2.2	1339.0	*	1	2010	243	21.	3.9	1339.7
1	0415	52	0.	2.2	1339.0	*	1	1215	148	3.	2.4	1339.1	*	1	2015	244	19.	3.7	1339.7
1	0420	53	0.	2.2	1339.0	*	1	1220	149	11.	3.0	1339.4	*	1	2020	245	18.	3.6	1339.6
1	0425	54	0.	2.2	1339.0	*	1	1225	150	24.	4.1	1339.8	*	1	2025	246	16.	3.5	1339.6
1	0430	55	0.	2.2	1339.0	*	1	1230	151	34.	5.4	1340.4	*	1	2030	247	15.	3.4	1339.5
1	0435	56	0.	2.2	1339.0	*	1	1235	152	41.	6.9	1341.0	*	1	2035	248	14.	3.3	1339.5
1	0440	57	0.	2.2	1339.0	*	1	1240	153	47.	8.5	1341.7	*	1	2040	249	12.	3.2	1339.4
1	0445	58	0.	2.2	1339.0	*	1	1245	154	52.	10.1	1342.3	*	1	2045	250	11.	3.1	1339.4
1	0450	59	0.	2.2	1339.0	*	1	1250	155	57.	11.8	1343.0	*	1	2050	251	10.	3.0	1339.4
1	0455	60	0.	2.2	1339.0	*	1	1255	156	61.	13.6	1343.6	*	1	2055	252	10.	3.0	1339.3
1	0500	61	0.	2.2	1339.0	*	1	1300	157	66.	15.4	1344.3	*	1	2100	253	9.	2.9	1339.3
1	0505	62	0.	2.2	1339.0	*	1	1305	158	69.	17.2	1344.9	*	1	2105	254	8.	2.8	1339.3
1	0510	63	0.	2.2	1339.0	*	1	1310	159	73.	19.0	1345.6	*	1	2110	255	7.	2.8	1339.3
1	0515	64	0.	2.2	1339.0	*	1	1315	160	77.	20.7	1346.2	*	1	2115	256	7.	2.7	1339.2
1	0520	65	0.	2.2	1339.0	*	1	1320	161	80.	22.4	1346.8	*	1	2120	257	6.	2.7	1339.2
1	0525	66	0.	2.2	1339.0	*	1	1325	162	82.	24.0	1347.3	*	1	2125	258	6.	2.7	1339.2
1	0530	67	0.	2.2	1339.0	*	1	1330	163	85.	25.5	1347.8	*	1	2130	259	5.	2.6	1339.2

1	0535	68	0.	2.2	1339.0	*	1	1335	164	87.	26.8	1348.2	*	1	2135	260	5.	2.6	1339.2
1	0540	69	0.	2.2	1339.0	*	1	1340	165	88.	28.0	1348.5	*	1	2140	261	4.	2.5	1339.2
1	0545	70	0.	2.2	1339.0	*	1	1345	166	89.	29.1	1348.9	*	1	2145	262	4.	2.5	1339.1
1	0550	71	0.	2.2	1339.0	*	1	1350	167	91.	30.0	1349.1	*	1	2150	263	4.	2.5	1339.1
1	0555	72	0.	2.2	1339.0	*	1	1355	168	92.	30.7	1349.4	*	1	2155	264	3.	2.5	1339.1
1	0600	73	0.	2.2	1339.0	*	1	1400	169	92.	31.3	1349.5	*	1	2200	265	3.	2.4	1339.1
1	0605	74	0.	2.2	1339.0	*	1	1405	170	93.	31.6	1349.6	*	1	2205	266	3.	2.4	1339.1
1	0610	75	0.	2.2	1339.0	*	1	1410	171	93.	31.9	1349.7	*	1	2210	267	3.	2.4	1339.1
1	0615	76	0.	2.2	1339.0	*	1	1415	172	93.	31.9	1349.7	*	1	2215	268	2.	2.4	1339.1
1	0620	77	0.	2.2	1339.0	*	1	1420	173	93.	31.9	1349.7	*	1	2220	269	2.	2.4	1339.1
1	0625	78	0.	2.2	1339.0	*	1	1425	174	93.	31.7	1349.7	*	1	2225	270	2.	2.4	1339.1
1	0630	79	0.	2.2	1339.0	*	1	1430	175	93.	31.5	1349.6	*	1	2230	271	2.	2.3	1339.1
1	0635	80	0.	2.2	1339.0	*	1	1435	176	92.	31.2	1349.5	*	1	2235	272	2.	2.3	1339.1
1	0640	81	0.	2.2	1339.0	*	1	1440	177	92.	30.9	1349.4	*	1	2240	273	2.	2.3	1339.1
1	0645	82	0.	2.2	1339.0	*	1	1445	178	91.	30.4	1349.3	*	1	2245	274	1.	2.3	1339.1
1	0650	83	0.	2.2	1339.0	*	1	1450	179	91.	30.0	1349.1	*	1	2250	275	1.	2.3	1339.0
1	0655	84	0.	2.2	1339.0	*	1	1455	180	90.	29.4	1349.0	*	1	2255	276	1.	2.3	1339.0
1	0700	85	0.	2.2	1339.0	*	1	1500	181	89.	28.9	1348.8	*	1	2300	277	1.	2.3	1339.0
1	0705	86	0.	2.2	1339.0	*	1	1505	182	88.	28.3	1348.6	*	1	2305	278	1.	2.3	1339.0
1	0710	87	0.	2.2	1339.0	*	1	1510	183	88.	27.7	1348.4	*	1	2310	279	1.	2.3	1339.0
1	0715	88	0.	2.2	1339.0	*	1	1515	184	87.	27.1	1348.3	*	1	2315	280	1.	2.3	1339.0
1	0720	89	0.	2.2	1339.0	*	1	1520	185	86.	26.5	1348.1	*	1	2320	281	1.	2.3	1339.0
1	0725	90	0.	2.2	1339.0	*	1	1525	186	85.	25.9	1347.9	*	1	2325	282	1.	2.3	1339.0
1	0730	91	0.	2.2	1339.0	*	1	1530	187	84.	25.3	1347.7	*	1	2330	283	1.	2.2	1339.0
1	0735	92	0.	2.2	1339.0	*	1	1535	188	83.	24.7	1347.5	*	1	2335	284	1.	2.2	1339.0
1	0740	93	0.	2.2	1339.0	*	1	1540	189	82.	24.1	1347.3	*	1	2340	285	1.	2.2	1339.0
1	0745	94	0.	2.2	1339.0	*	1	1545	190	82.	23.6	1347.1	*	1	2345	286	1.	2.2	1339.0
1	0750	95	0.	2.2	1339.0	*	1	1550	191	81.	23.0	1347.0	*	1	2350	287	0.	2.2	1339.0
1	0755	96	0.	2.2	1339.0	*	1	1555	192	80.	22.5	1346.8	*	1	2355	288	0.	2.2	1339.0
						*							*						

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	23.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 93.	14.25		74.	22.	22.	22.
		(INCHES)	.137	.163	.163	.163
		(AC-FT)	37.	44.	44.	44.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	23.92-HR
+ (AC-FT)	(HR)				
32.	14.25	21.	7.	7.	7.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	23.92-HR
+ (FEET)	(HR)				
1349.72	14.25	1346.00	1340.90	1340.90	1340.90

CUMULATIVE AREA = 5.01 SQ MI

*** ***

```
          **************
          *            *
352 KK    *     CBSW   *
          *            *
          **************

354 KO        OUTPUT CONTROL VARIABLES
                   IPRNT          1  PRINT CONTROL
                   IPLOT          0  PLOT CONTROL
                   QSCAL         0.  HYDROGRAPH PLOT SCALE

355 HC        HYDROGRAPH COMBINATION
                   ICOMP          2  NUMBER OF HYDROGRAPHS TO COMBINE
```

***

HYDROGRAPH AT STATION CBSW
SUM OF 2 HYDROGRAPHS

DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW	DA	MON	HRMN	ORD	FLOW
1		0000	1	0.	1		0600	73	0.	1		1200	145	97.	1		1800	217	225.
1		0005	2	0.	1		0605	74	0.	1		1205	146	149.	1		1805	218	223.
1		0010	3	0.	1		0610	75	0.	1		1210	147	224.	1		1810	219	221.
1		0015	4	0.	1		0615	76	0.	1		1215	148	253.	1		1815	220	220.
1		0020	5	0.	1		0620	77	0.	1		1220	149	261.	1		1820	221	218.
1		0025	6	0.	1		0625	78	0.	1		1225	150	274.	1		1825	222	216.
1		0030	7	0.	1		0630	79	0.	1		1230	151	284.	1		1830	223	214.
1		0035	8	0.	1		0635	80	0.	1		1235	152	291.	1		1835	224	212.
1		0040	9	0.	1		0640	81	0.	1		1240	153	297.	1		1840	225	210.
1		0045	10	0.	1		0645	82	0.	1		1245	154	302.	1		1845	226	208.
1		0050	11	0.	1		0650	83	0.	1		1250	155	307.	1		1850	227	207.
1		0055	12	0.	1		0655	84	0.	1		1255	156	311.	1		1855	228	205.
1		0100	13	0.	1		0700	85	0.	1		1300	157	316.	1		1900	229	203.
1		0105	14	0.	1		0705	86	0.	1		1305	158	319.	1		1905	230	201.
1		0110	15	0.	1		0710	87	0.	1		1310	159	323.	1		1910	231	200.
1		0115	16	0.	1		0715	88	0.	1		1315	160	327.	1		1915	232	198.
1		0120	17	0.	1		0720	89	0.	1		1320	161	330.	1		1920	233	196.
1		0125	18	0.	1		0725	90	0.	1		1325	162	332.	1		1925	234	194.
1		0130	19	0.	1		0730	91	0.	1		1330	163	335.	1		1930	235	193.
1		0135	20	0.	1		0735	92	0.	1		1335	164	337.	1		1935	236	191.
1		0140	21	0.	1		0740	93	0.	1		1340	165	338.	1		1940	237	189.
1		0145	22	0.	1		0745	94	0.	1		1345	166	339.	1		1945	238	187.
1		0150	23	0.	1		0750	95	0.	1		1350	167	341.	1		1950	239	186.
1		0155	24	0.	1		0755	96	0.	1		1355	168	342.	1		1955	240	183.
1		0200	25	0.	1		0800	97	0.	1		1400	169	342.	1		2000	241	181.
1		0205	26	0.	1		0805	98	0.	1		1405	170	343.	1		2005	242	178.
1		0210	27	0.	1		0810	99	0.	1		1410	171	343.	1		2010	243	176.
1		0215	28	0.	1		0815	100	0.	1		1415	172	343.	1		2015	244	173.
1		0220	29	0.	1		0820	101	0.	1		1420	173	343.	1		2020	245	171.
1		0225	30	0.	1		0825	102	0.	1		1425	174	343.	1		2025	246	169.
1		0230	31	0.	1		0830	103	0.	1		1430	175	343.	1		2030	247	167.
1		0235	32	0.	1		0835	104	0.	1		1435	176	342.	1		2035	248	166.
1		0240	33	0.	1		0840	105	1.	1		1440	177	342.	1		2040	249	164.
1		0245	34	0.	1		0845	106	1.	1		1445	178	341.	1		2045	250	163.
1		0250	35	0.	1		0850	107	1.	1		1450	179	341.	1		2050	251	161.
1		0255	36	0.	1		0855	108	1.	1		1455	180	340.	1		2055	252	160.
1		0300	37	0.	1		0900	109	1.	1		1500	181	339.	1		2100	253	159.
1		0305	38	0.	1		0905	110	1.	1		1505	182	336.	1		2105	254	157.
1		0310	39	0.	1		0910	111	1.	1		1510	183	329.	1		2110	255	156.
1		0315	40	0.	1		0915	112	1.	1		1515	184	323.	1		2115	256	155.
1		0320	41	0.	1		0920	113	2.	1		1520	185	317.	1		2120	257	154.
1		0325	42	0.	1		0925	114	2.	1		1525	186	312.	1		2125	258	153.
1		0330	43	0.	1		0930	115	2.	1		1530	187	307.	1		2130	259	152.
1		0335	44	0.	1		0935	116	2.	1		1535	188	302.	1		2135	260	152.

1	0340	45	0.	*	1	0940	117	3.	*	1	1540	189	298.	*	1	2140	261	151.
1	0345	46	0.	*	1	0945	118	3.	*	1	1545	190	294.	*	1	2145	262	150.
1	0350	47	0.	*	1	0950	119	3.	*	1	1550	191	290.	*	1	2150	263	149.
1	0355	48	0.	*	1	0955	120	3.	*	1	1555	192	286.	*	1	2155	264	149.
1	0400	49	0.	*	1	1000	121	4.	*	1	1600	193	283.	*	1	2200	265	148.
1	0405	50	0.	*	1	1005	122	4.	*	1	1605	194	279.	*	1	2205	266	147.
1	0410	51	0.	*	1	1010	123	5.	*	1	1610	195	276.	*	1	2210	267	147.
1	0415	52	0.	*	1	1015	124	5.	*	1	1615	196	273.	*	1	2215	268	146.
1	0420	53	0.	*	1	1020	125	6.	*	1	1620	197	270.	*	1	2220	269	145.
1	0425	54	0.	*	1	1025	126	6.	*	1	1625	198	267.	*	1	2225	270	145.
1	0430	55	0.	*	1	1030	127	7.	*	1	1630	199	264.	*	1	2230	271	144.
1	0435	56	0.	*	1	1035	128	8.	*	1	1635	200	262.	*	1	2235	272	144.
1	0440	57	0.	*	1	1040	129	9.	*	1	1640	201	259.	*	1	2240	273	143.
1	0445	58	0.	*	1	1045	130	10.	*	1	1645	202	256.	*	1	2245	274	143.
1	0450	59	0.	*	1	1050	131	11.	*	1	1650	203	254.	*	1	2250	275	142.
1	0455	60	0.	*	1	1055	132	12.	*	1	1655	204	252.	*	1	2255	276	141.
1	0500	61	0.	*	1	1100	133	13.	*	1	1700	205	249.	*	1	2300	277	141.
1	0505	62	0.	*	1	1105	134	15.	*	1	1705	206	247.	*	1	2305	278	140.
1	0510	63	0.	*	1	1110	135	17.	*	1	1710	207	245.	*	1	2310	279	140.
1	0515	64	0.	*	1	1115	136	18.	*	1	1715	208	243.	*	1	2315	280	139.
1	0520	65	0.	*	1	1120	137	21.	*	1	1720	209	241.	*	1	2320	281	139.
1	0525	66	0.	*	1	1125	138	23.	*	1	1725	210	239.	*	1	2325	282	138.
1	0530	67	0.	*	1	1130	139	25.	*	1	1730	211	237.	*	1	2330	283	138.
1	0535	68	0.	*	1	1135	140	27.	*	1	1735	212	235.	*	1	2335	284	138.
1	0540	69	0.	*	1	1140	141	30.	*	1	1740	213	233.	*	1	2340	285	137.
1	0545	70	0.	*	1	1145	142	36.	*	1	1745	214	231.	*	1	2345	286	137.
1	0550	71	0.	*	1	1150	143	47.	*	1	1750	215	229.	*	1	2350	287	136.
1	0555	72	0.	*	1	1155	144	66.	*	1	1755	216	227.	*	1	2355	288	136.
				*					*					*				

****

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	23.92-HR
+ (CFS)	(HR)					
		(CFS)				
+ 343.	14.25		293.	117.	117.	117.
		(INCHES)	.544	.863	.863	.863
		(AC-FT)	145.	230.	230.	230.

CUMULATIVE AREA = 5.01 SQ MI

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

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	DA8B	228.	12.25	31.	9.	9.	.12		
+	ROUTED TO	RT8B	222.	12.33	31.	9.	9.	.12		
+	HYDROGRAPH AT	DA8C	260.	12.33	40.	11.	11.	.21		
+	2 COMBINED AT	CB8C	482.	12.33	71.	20.	20.	.33		
+	DIVERSION TO	DVT01	402.	12.33	64.	18.	18.	.33		
+	HYDROGRAPH AT	DV8C	80.	12.33	7.	2.	2.	.33		
+	ROUTED TO	RT8C	79.	12.42	7.	2.	2.	.33		
+	HYDROGRAPH AT	DA8A	667.	12.50	126.	35.	35.	.67		
+	ROUTED TO	RT8A	659.	12.58	126.	35.	35.	.67		
+	HYDROGRAPH AT	DA9A	512.	12.33	74.	20.	20.	.39		
+	ROUTED TO	RT9A	32.	13.75	31.	15.	15.	.39		
+									1516.35	13.75

	ROUTED TO						
+		RT9ACP	32.	14.67	31.	14.	14.	.39
	HYDROGRAPH AT						
+		DA9B	560.	12.50	109.	30.	30.	.58
	2 COMBINED AT						
+		CB9B	564.	12.50	135.	44.	44.	.97
	ROUTED TO						
+		RT9B	564.	12.58	135.	44.	44.	.97
	HYDROGRAPH AT						
+		DA9C	479.	12.25	67.	19.	19.	.21
	3 COMBINED AT						
+		CB9C	1482.	12.50	323.	99.	99.	1.85
	ROUTED TO						
+		RT9C	1479.	12.58	324.	98.	98.	1.85
	HYDROGRAPH AT						
+		DA9D	231.	12.25	32.	9.	9.	.15
	3 COMBINED AT						
+		CB9D	1671.	12.58	362.	109.	109.	2.33
	DIVERSION TO						
+		DVT02	58.	12.58	6.	2.	2.	2.33
	HYDROGRAPH AT						
+		DV9D1	1613.	12.58	356.	107.	107.	2.33
	ROUTED TO						
+		RT9D1	1612.	12.58	357.	107.	107.	2.33
	DIVERSION TO						
+		DVT03	296.	12.58	66.	19.	19.	2.33
	HYDROGRAPH AT						
+		DV9D2	1316.	12.58	290.	88.	88.	2.33
	ROUTED TO						
+		RT9D2	1309.	12.67	290.	88.	88.	2.33
	HYDROGRAPH AT						
+		DA9G	435.	12.25	61.	17.	17.	.25

	ROUTED TO								
+		RT9G	430.	12.42	62.	17.	17.	.25	
	HYDROGRAPH AT								
+		DA9H	684.	12.25	93.	26.	26.	.36	
	3 COMBINED AT								
+		CB9H	2021.	12.50	442.	132.	132.	2.94	
	ROUTED TO								
+		RT9H	2018.	12.58	444.	132.	132.	2.94	
	HYDROGRAPH AT								
+		RN9D2	296.	12.58	66.	19.	19.	.00	
	ROUTED TO								
+		RRN9D2	294.	12.75	67.	19.	19.	.00	
	HYDROGRAPH AT								
+		DA9E	338.	12.25	46.	13.	13.	.19	
	2 COMBINED AT								
+		CM9E	516.	12.42	112.	32.	32.	.19	
	ROUTED TO								
+		RT9E	510.	12.42	112.	32.	32.	.19	
	HYDROGRAPH AT								
+		DA9I	217.	12.25	30.	8.	8.	.16	
	3 COMBINED AT								
+		CB9I	2651.	12.50	586.	172.	172.	3.29	
	ROUTED TO								
+		DBB	206.	14.83	193.	79.	79.	3.29	
+									1391.40 14.83
	DIVERSION TO								
+		DVT05	144.	14.83	132.	50.	50.	3.29	
	HYDROGRAPH AT								
+		DVDBB	62.	14.83	61.	29.	29.	3.29	
	HYDROGRAPH AT								
+		RNBC	402.	12.33	64.	18.	18.	.00	
	ROUTED TO								
+		RTRNBC	403.	12.42	66.	19.	19.	.00	
	HYDROGRAPH AT								
+		DABE	224.	12.25	31.	9.	9.	.13	

	HYDROGRAPH AT								
+		DABD	328.	12.42	53.	15.	15.	.28	
	ROUTED TO								
+		RTBD	327.	12.42	53.	15.	15.	.28	
	3 COMBINED AT								
+		CBBD	910.	12.42	149.	42.	42.	.41	
	ROUTED TO								
+		RTCB	910.	12.42	149.	42.	42.	.41	
	HYDROGRAPH AT								
+		DABF	143.	12.25	19.	5.	5.	.06	
	2 COMBINED AT								
+		CBBF	1029.	12.42	168.	47.	47.	.49	
	ROUTED TO								
+		RTCBBF	1027.	12.42	168.	47.	47.	.49	
	HYDROGRAPH AT								
+		RN9D1	58.	12.58	6.	2.	2.	.00	
	ROUTED TO								
+		RRN9D1	56.	12.67	6.	2.	2.	.00	
	HYDROGRAPH AT								
+		DABS	214.	12.25	29.	8.	8.	.12	
	3 COMBINED AT								
+		CBBF	1227.	12.42	204.	57.	57.	.61	
	ROUTED TO								
+		DBA	48.	15.17	48.	23.	23.	.61	
+									1406.86 15.17
	ROUTED TO								
+		RTDBA	48.	15.25	48.	23.	23.	.61	
	2 COMBINED AT								
+		CBAB	110.	15.00	109.	52.	52.	3.90	
	ROUTED TO								
+		RTAB	110.	15.00	109.	52.	52.	3.90	
	HYDROGRAPH AT								
+		DA10A	177.	12.25	24.	7.	7.	.12	
	ROUTED TO								
+		RT10A	176.	12.33	25.	7.	7.	.12	
	HYDROGRAPH AT								
+		DA10B	177.	12.25	24.	7.	7.	.12	
	2 COMBINED AT								
+		CB10B	350.	12.33	49.	14.	14.	.24	

	DIVERSION TO								
+		DVT	350.	.08	49.	14.	14.	.24	
	HYDROGRAPH AT								
+		DV10B	0.	.08	0.	0.	0.	.24	
	ROUTED TO								
+		RT10B	0.	.08	0.	0.	0.	.24	
	HYDROGRAPH AT								
+		DA10C	214.	12.25	29.	8.	8.	.12	
	2 COMBINED AT								
+		CB10C	214.	12.25	29.	8.	8.	.36	
	2 COMBINED AT								
+		CB10C2	250.	12.33	127.	60.	60.	4.26	
	ROUTED TO								
+		RT10C	250.	12.33	127.	60.	60.	4.26	
	HYDROGRAPH AT								
+		RN10B	350.	12.33	49.	14.	14.	.00	
	ROUTED TO								
+		RT10B2	342.	12.33	49.	14.	14.	.00	
	HYDROGRAPH AT								
+		DA11A	166.	12.25	23.	6.	6.	.10	
	2 COMBINED AT								
+		CB11A	503.	12.33	72.	20.	20.	.10	
	ROUTED TO								
+		DBD	45.	13.42	41.	18.	18.	.10	
+									1395.82 13.42
	ROUTED TO								
+		RT11A	45.	13.42	41.	18.	18.	.10	
	HYDROGRAPH AT								
+		DA11B	177.	12.25	24.	7.	7.	.12	
	ROUTED TO								
+		DB11B	85.	12.67	24.	7.	7.	.12	
+									1389.28 12.67
	3 COMBINED AT								
+		CB11B	349.	12.33	190.	84.	84.	4.48	
	ROUTED TO								
+		RT11B	348.	12.42	190.	84.	84.	4.48	
	HYDROGRAPH AT								
+		DA11D	85.	13.08	26.	7.	7.	.13	
	2 COMBINED AT								
+		CB11D	386.	12.42	216.	91.	91.	4.61	

+	ROUTED TO	RT11D	386.	12.50	216.	91.	91.	4.61	
+	HYDROGRAPH AT	DA11C	125.	13.33	46.	13.	13.	.22	
+	2 COMBINED AT	CB11C	455.	13.00	262.	103.	103.	4.83	
+	ROUTED TO	RT11C	455.	13.00	262.	103.	103.	4.83	
+	HYDROGRAPH AT	DA11B	132.	13.25	48.	13.	13.	.18	
+	2 COMBINED AT	CB11B	582.	13.08	310.	117.	117.	5.01	
+	DIVERSION TO	DVSW	250.	13.08	222.	95.	95.	5.01	
+	HYDROGRAPH AT	DVBC	332.	13.08	88.	22.	22.	5.01	
+	ROUTED TO	RTBC	93.	14.25	74.	22.	22.	5.01	
+									1349.72 14.25
+	HYDROGRAPH AT	RVSW	250.	12.25	222.	95.	95.	.00	
+	2 COMBINED AT	CBSW	343.	14.25	293.	117.	117.	5.01	

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