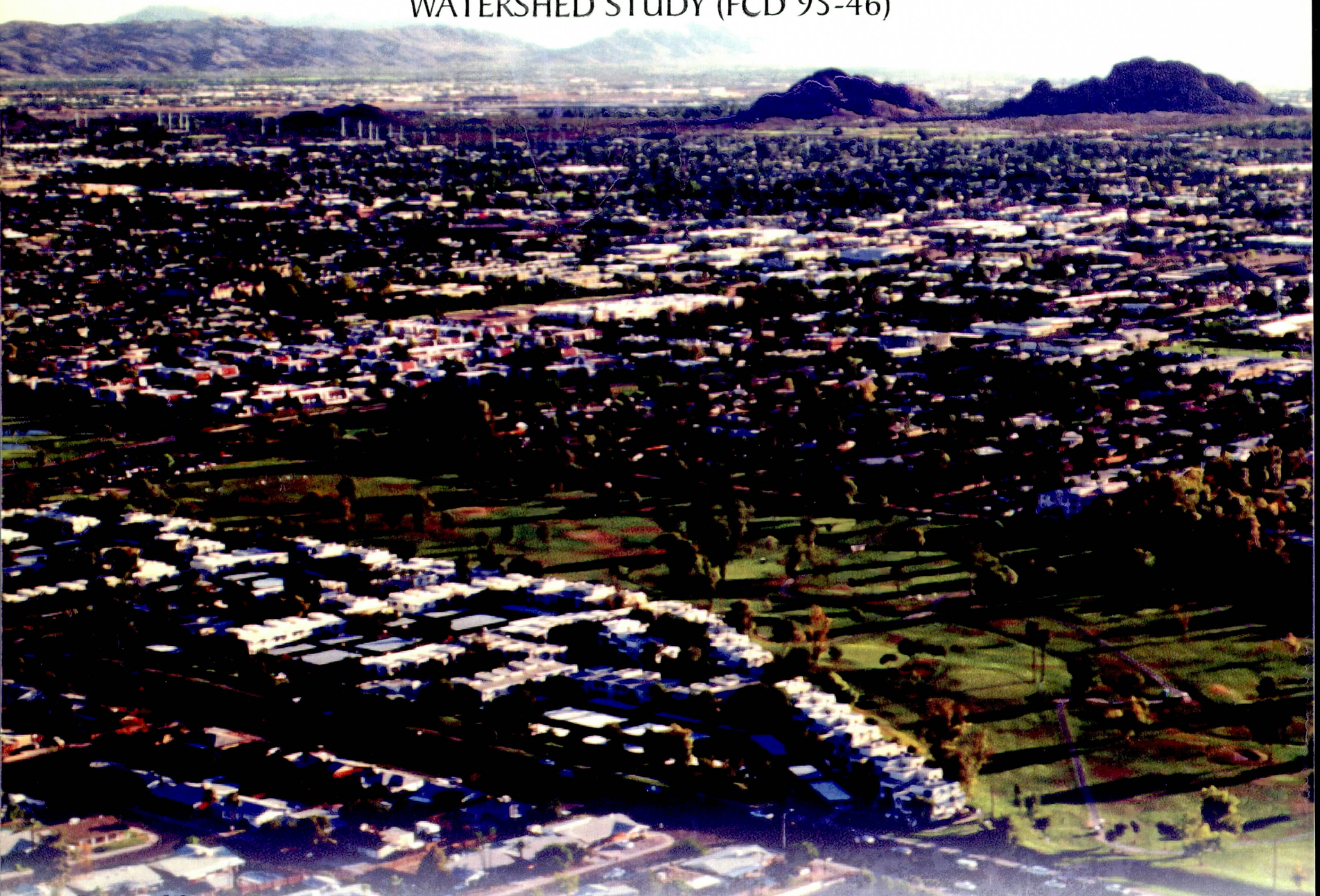
RECOMMENDED PLAN SUPPORTING CALCULATIONS

STP PAPAGO

REGIONAL FLOOD CONTROL PROJECT

WATERSHED STUDY (FCD 95-46)



Prepared for
Flood Control District of Maricopa County
© 1997

Kimley-Horn and Associates, Inc.
KVL Consultants, Inc.

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

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

Registered Professional Engineer (Civil) CERTIFICATE NO. 24426 DOUGLAS J. PLASENCIA Date Signed 11/12/91 ARIZONA, U.S.A.

AVERY READY INDEX® INDEXING SYSTEM

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 01610e.HC1

```
*************************************
                                    *
  LOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             MAY   1991            *
*          VERSION 4.0.1E           *
*                                   *
* RUN DATE  02/18/1997  TIME  08:49:27 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*      DAVIS, CALIFORNIA 95616      *
*          (916) 756-1104           *
*                                   *
*************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

```
::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
:::                                  :::
:::  Full Microcomputer Implementation :::
:::                by                :::
:::        Haestad Methods, Inc.     :::
:::                                  :::
::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              *
              *
              *
  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    1/97
              *
              *
              *DIAGRAM
 11           IT       2                     300
 12           IO       5

 13           KK  010010   BASIN
 14           BA   0.035
 15           PH                     0.50    0.97    1.61    1.76    1.86    2.05
 16           LS       0      79       0       0      98       0
 17           UK     150  0.0100    0.30      65
 18           UK      50  0.0100    0.10      35
 19           RK    1453  0.0078    0.02            TRAP      38     1.0
 20           RK     938  0.0078    0.02            TRAP      45     1.0

 21           KK  010020    FROM  010010
 22           RK     357  0.0078   0.017            TRAP    45.0       1

 23           KK  010020   BASIN
 24           BA   0.020
 25           LS       0      79       0       0      98       0
 26           UK     150  0.0100    0.30      65
 27           UK      50  0.0100    0.10      35
 28           RK    1391  0.0078    0.02            TRAP      38     1.0

 29           KK  010020 COMBINE
 30           HC       2

 31           KK  010040    FROM  010020
 32           RK     243  0.0078   0.017            TRAP    45.0       1

 33           KK  010160   BASIN
 34           BA   0.004
 35           LS       0      79       0       0      98       0
 36           UK     150  0.0100    0.30      65
 37           UK      50  0.0100    0.10      35
 38           RK     576  0.0078    0.04            TRAP      20     1.0
              *
              *  Detention basin removed (insignificant <0.5 acre-ft)
```

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

  39          KK  010040    FROM  010160
  40          RK     147  0.0078   0.017            TRAP     7.5       1

  41          KK  F10040 COMBINE
  42          HC       2

  43          KK  010050    FROM  010040
  44          RK     417  0.0078   0.017            TRAP    45.0       1

  45          KK  010050   BASIN
  46          BA   0.053
  47          LS       0      79       0       0      98       0
  48          UK     104  0.0100    0.34      47
  49          UK     103  0.0100    0.10      53
  50          RK    1791  0.0078    0.02            TRAP      38     1.0
  51          RK    1509  0.0078    0.02            TRAP      38     1.0

  52          KK  010050 COMBINE
  53          HC       2

  54          KK  010060    FROM  010050
  55          RK     538  0.0078   0.017            TRAP    45.0       1

  56          KK  010060   BASIN
  57          BA   0.033
  58          LS       0      79       0       0      98       0
  59          UK     109  0.0100    0.33      34
  60          UK      98  0.0100    0.10      66
  61          RK    1938  0.0078    0.02            TRAP      90     1.0

  62          KK  010060 COMBINE
  63          HC       2

  64          KK  010070    FROM  010060
  65          RK    1305  0.0078   0.017            TRAP    90.0       1

  66          KK  010070   BASIN
  67          BA   0.017
  68          LS       0      79       0       0      98       0
  69          UK     150   0.010    0.30      63
  70          UK      55   0.010    0.10      37
  71          RK    1300   0.008    0.02            TRAP      80     1.0

  72          KK  010210   BASIN
  73          BA   0.063
  74          LS       0      79       0       0      98       0
  75          UK     154  0.0100    0.30      61
  76          UK      62  0.0100    0.10      39
  77          RK     967  0.0078    0.02            TRAP      38     1.0
  78          RK    1481  0.0078    0.02            TRAP      60     1.0
```

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

 79           KK  010220    FROM  010210
 80           RK     821  0.0078   0.017            TRAP    52.5       1

 81           KK  010220   BASIN
 82           BA   0.041
 83           LS       0      79       0       0      98       0
 84           UK     149  0.0100    0.30      61
 85           UK      52  0.0100    0.10      39
 86           RK    1302  0.0078    0.02            TRAP      38     1.0
 87           RK     821  0.0078    0.02            TRAP      60     1.0

 88           KK  010220 COMBINE
 89           HC       2

 90           KK  010070    FROM  010220
 91           RK     219  0.0078   0.017            TRAP    60.0       1

 92           KK  010070 COMBINE
 93           HC       3

 94           KK  010080    FROM  010070
 95           RK     671  0.0078   0.013            CIRC     4.0

 96           KK  010080   BASIN
 97           BA   0.010
 98           LS       0      79       0       0      98       0
 99           UK     135   0.010    0.32      45
100           UK     115   0.010    0.10      55
101           RK     825   0.008    0.02            TRAP      75     1.0

102           KK  010310   BASIN
103           BA   0.009
104           LS       0      79       0       0      98       0
105           UK      23  0.0100    0.40      11
106           UK     197  0.0100    0.10      89
107           RK     932  0.0078    0.04            TRAP      20     1.0
              *
              * Storage removed (0.5 acre-ft)

108           KK  010080    FROM  010310
109           RK     211  0.0078   0.017            TRAP    15.0       1

110           KK  010410   BASIN
111           BA   0.012
112           LS       0      79       0       0      98       0
113           UK     150  0.0100    0.30      46
114           UK      51  0.0100    0.10      54
115           RK     350  0.0078    0.02            TRAP      23     1.0
116           RK     943  0.0078    0.02            TRAP      23     1.0
```

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

 117          KK  010080    FROM  010410
 118          RK     111  0.0078   0.013            CIRC     1.5

 119          KK  010080 COMBINE
 120          HC       4

 121          KK  010090    FROM  010080
 122          RK     937  0.0078   0.013            CIRC     4.0

 123          KK  010510   BASIN
 124          BA   0.016
 125          LS       0      79       0       0      98       0
 126          UK     151  0.0100    0.30      46
 127          UK      51  0.0100    0.10      54
 128          RK    1185  0.0078    0.02            TRAP      23     1.0

 129          KK  010520    FROM  010510
 130          RK     444  0.0078   0.013            CIRC     2.0

 131          KK  010610   BASIN
 132          BA   0.026
 133          LS       0      79       0       0      98       0
 134          UK      21  0.0100    0.40       7
 135          UK     199  0.0100    0.10      93
 136          RK    1682  0.0078    0.02            TRAP      23     1.0

 137          KK  010620    FROM  010610
 138          RK     123  0.0078   0.017            TRAP    15.0       1
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
 139          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

PUT

```
 5    (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

13    010010
           V
           V
21    010020
           .
           .
23         .      010020
           .           .
           .           .
29    010020............
           V
           V
31    010040
           .
           .
33         .      010160
           .           V
           .           V
39         .      010040
           .           .
           .           .
41    F10040............
           V
           V
43    010050
           .
           .
45         .      010050
           .           .
           .           .
52    010050............
           V
           V
54    010060
           .
           .
56         .      010060
           .           .
           .           .
62    010060............
           V
           V
64    010070
           .
           .
66         .      010070
           .           .
           .           .
72         .           .      010210
           .           .           V
           .           .           V
79         .           .      010220
           .           .           .
           .           .           .
           .           .           .      010220
           .           .           .           .
           .           .           .           .
88         .           .      010220............
           .           .           V
```

```
                .           .           V
 90             .           .      010070
                .           .           .
                .           .           .
            010070.......................
                V
                V
 94         010080
                .
                .
 96             .      010080
                .           .
                .           .
102             .           .      010310
                .           .           V
                .           .           V
108             .           .      010080
                .           .           .
                .           .           .
110             .           .           .      010410
                .           .           .           V
                .           .           .           V
117             .           .           .      010080
                .           .           .           .
                .           .           .           .
119         010080.................................
                V
                V
121         010090
                .
                .
123             .      010510
                .           V
                .           V
129             .      010520
                .           .
                .           .
131             .           .      010610
                .           .           V
                .           .           V
137             .           .      010620
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 01610e.HC1

```
*************************************
*                                   *
*     )OD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991           *
*           VERSION 4.0.1E          *
*                                   *
* RUN DATE  02/18/1997  TIME  08:49:27 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*      DAVIS, CALIFORNIA 95616      *
*          (916) 756-1104           *
*                                   *
*************************************
```

```
*****************************************************************
STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
SCOTTSDALE - TEMPE - PHOENIX
*****************************************************************

Kimley-Horn and Associates, Inc.
KVL Consultants, Inc.

10-Year, 6-Hour Storm Event
1/97

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

 I           HYDROGRAPH TIME DATA
                  NMIN          2  MINUTES IN COMPUTATION INTERVAL
                 IDATE     1    0  STARTING DATE
                 ITIME        0000  STARTING TIME
                    NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE     1    0  ENDING DATE
                NDTIME        0958  ENDING TIME
                 ICENT          19  CENTURY MARK

          COMPUTATION INTERVAL    0.03 HOURS
               TOTAL TIME BASE    9.97 HOURS

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

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	010010	36.	3.13	4.	2.	2.	0.04		
ROUTED TO	010020	35.	3.17	4.	2.	2.	0.04		
HYDROGRAPH AT	010020	21.	3.10	2.	1.	1.	0.02		
2 COMBINED AT	010020	55.	3.13	6.	4.	4.	0.05		
ROUTED TO	010040	53.	3.13	6.	4.	4.	0.05		
HYDROGRAPH AT	010160	4.	3.10	0.	0.	0.	0.00		
ROUTED TO	010040	4.	3.10	0.	0.	0.	0.00		
2 COMBINED AT	F10040	57.	3.13	6.	4.	4.	0.06		
ROUTED TO	010050	57.	3.17	6.	4.	4.	0.06		
HYDROGRAPH AT	010050	76.	3.17	7.	4.	4.	0.05		
2 COMBINED AT	010050	133.	3.17	13.	8.	8.	0.11		
ROUTED TO	010060	131.	3.17	13.	8.	8.	0.11		
HYDROGRAPH AT	010060	55.	3.17	5.	3.	3.	0.03		
2 COMBINED AT	010060	186.	3.17	18.	11.	11.	0.15		
ROUTED TO	010070	185.	3.20	18.	11.	11.	0.15		
HYDROGRAPH AT	010070	17.	3.13	2.	1.	1.	0.02		
HYDROGRAPH AT	010210	74.	3.13	7.	4.	4.	0.06		
ROUTED TO	010220	72.	3.17	7.	4.	4.	0.06		
HYDROGRAPH AT	010220	49.	3.13	5.	3.	3.	0.04		
2 COMBINED AT	010220	119.	3.13	12.	7.	7.	0.10		
ROUTED TO	010070	116.	3.13	12.	7.	7.	0.10		
3 COMBINED AT	010070	304.	3.17	31.	19.	19.	0.27		
ROUTED TO	010080	303.	3.20	31.	19.	19.	0.27		
HYDROGRAPH AT	010080	15.	3.13	1.	1.	1.	0.01		
HYDROGRAPH AT	010310	20.	3.13	2.	1.	1.	0.01		
ROUTED TO	010080	20.	3.17	2.	1.	1.	0.01		
HYDROGRAPH AT	010410	21.	3.10	2.	1.	1.	0.01		
ROUTED TO	010080	21.	3.10	2.	1.	1.	0.01		
4 COMBINED AT	010080	346.	3.20	36.	22.	22.	0.30		

ROUTED TO	010090	346.	3.20	36.	22.	22.	0.30
HYDROGRAPH AT	010510	27.	3.07	2.	1.	1.	0.02
ROUTED TO	010520	27.	3.10	2.	1.	1.	0.02
HYDROGRAPH AT	010610	62.	3.13	5.	3.	3.	0.03
ROUTED TO	010620	62.	3.13	5.	3.	3.	0.03

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
010010	MANE	1.07	36.08	187.68	0.99	2.00	36.04	188.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1861E+01 OUTFLOW=0.1844E+01 BASIN STORAGE=0.1414E-01 PERCENT ERROR= 0.2

010020	MANE	0.50	35.80	189.05	0.99	2.00	34.97	190.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1843E+01 EXCESS=0.0000E+00 OUTFLOW=0.1843E+01 BASIN STORAGE=0.1059E-02 PERCENT ERROR= 0.0

010020	MANE	1.89	21.15	186.58	0.99	2.00	20.63	186.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1063E+01 OUTFLOW=0.1054E+01 BASIN STORAGE=0.6616E-02 PERCENT ERROR= 0.2

010040	MANE	0.26	54.47	188.52	0.99	2.00	53.22	188.00	0.99

NTINUITY SUMMARY (AC-FT) - INFLOW=0.2896E+01 EXCESS=0.0000E+00 OUTFLOW=0.2896E+01 BASIN STORAGE=0.9420E-03 PERCENT ERROR= 0.0

010160	MANE	1.77	4.41	186.17	0.99	2.00	4.37	186.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2127E+00 OUTFLOW=0.2109E+00 BASIN STORAGE=0.1280E-02 PERCENT ERROR= 0.2

010040	MANE	0.23	4.36	186.50	0.99	2.00	4.27	186.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2111E+00 EXCESS=0.0000E+00 OUTFLOW=0.2111E+00 BASIN STORAGE=0.2976E-04 PERCENT ERROR= 0.0

010050	MANE	0.46	57.19	188.86	0.99	2.00	56.95	190.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3108E+01 EXCESS=0.0000E+00 OUTFLOW=0.3107E+01 BASIN STORAGE=0.1757E-02 PERCENT ERROR= 0.0

010050	MANE	1.27	76.79	189.55	1.22	2.00	76.08	190.00	1.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3465E+01 OUTFLOW=0.3444E+01 BASIN STORAGE=0.1612E-01 PERCENT ERROR= 0.1

010060	MANE	0.47	132.10	190.79	1.10	2.00	131.01	190.00	1.10

NUITY SUMMARY (AC-FT) - INFLOW=0.6550E+01 EXCESS=0.0000E+00 OUTFLOW=0.6549E+01 BASIN STORAGE=0.3191E-02 PERCENT ERROR= 0.0

010060	MANE	1.83	55.57	188.17	1.38	2.00	55.07	190.00	1.38

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2449E+01 OUTFLOW=0.2435E+01 BASIN STORAGE=0.9213E-02 PERCENT ERROR= 0.2

010070	MANE	1.01	185.48	191.96	1.16	2.00	185.33	192.00	1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8983E+01 EXCESS=0.0000E+00 OUTFLOW=0.8966E+01 BASIN STORAGE=0.1344E-01 PERCENT ERROR= 0.0

010070	MANE	2.00	17.02	188.10	1.01	2.00	16.96	188.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9270E+00 OUTFLOW=0.9167E+00 BASIN STORAGE=0.6914E-02 PERCENT ERROR= 0.4

010210	MANE	1.47	74.46	187.16	1.04	2.00	73.84	188.00	1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3520E+01 OUTFLOW=0.3488E+01 BASIN STORAGE=0.2401E-01 PERCENT ERROR= 0.2

010220	MANE	0.73	73.80	189.47	1.04	2.00	72.08	190.00	1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3487E+01 EXCESS=0.0000E+00 OUTFLOW=0.3486E+01 BASIN STORAGE=0.3735E-02 PERCENT ERROR= -0.1

010220	MANE	0.98	49.73	187.71	1.04	2.00	49.10	188.00	1.04

NTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2291E+01 OUTFLOW=0.2273E+01 BASIN STORAGE=0.1466E-01 PERCENT ERROR= 0.2

010070	MANE	0.29	118.66	188.64	1.04	2.00	116.26	188.00	1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5756E+01 EXCESS=0.0000E+00 OUTFLOW=0.5755E+01 BASIN STORAGE=0.1482E-02 PERCENT ERROR= 0.0

010080	MANE	0.31	304.03	190.90	1.10	2.00	303.42	192.00	1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1565E+02 EXCESS=0.0000E+00 OUTFLOW=0.1565E+02 BASIN STORAGE=0.1070E-02 PERCENT ERROR= 0.0

010080	MANE	1.50	15.61	187.47	1.24	2.00	15.38	188.00	1.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6674E+00 OUTFLOW=0.6634E+00 BASIN STORAGE=0.2900E-02 PERCENT ERROR= 0.2

010310	MANE	1.59	20.82	188.47	1.68	2.00	20.49	188.00	1.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8083E+00 OUTFLOW=0.8043E+00 BASIN STORAGE=0.1708E-02 PERCENT ERROR= 0.3

010080	MANE	0.36	20.42	188.81	1.68	2.00	20.22	190.00	1.68

NUITY SUMMARY (AC-FT) - INFLOW=0.8045E+00 EXCESS=0.0000E+00 OUTFLOW=0.8044E+00 BASIN STORAGE=0.8996E-04 PERCENT ERROR= 0.0

010410	MANE	1.02	21.12	184.87	1.23	2.00	20.85	186.00	1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7928E+00 OUTFLOW=0.7897E+00 BASIN STORAGE=0.2891E-02 PERCENT ERROR= 0.0

010080	MANE	0.09	20.80	186.06	1.23	2.00	20.77	186.00	1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7893E+00 EXCESS=0.0000E+00 OUTFLOW=0.7892E+00 BASIN STORAGE=0.9985E-05 PERCENT ERROR= 0.0

010090	MANE	0.34	345.59	192.08	1.13	2.00	345.57	192.00	1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1791E+02 EXCESS=0.0000E+00 OUTFLOW=0.1791E+02 BASIN STORAGE=0.1588E-02 PERCENT ERROR= 0.0

010510	MANE	1.24	28.13	185.13	1.23	2.00	27.27	184.00	1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1057E+01 OUTFLOW=0.1052E+01 BASIN STORAGE=0.3707E-02 PERCENT ERROR= 0.1

010520	MANE	0.26	27.26	184.69	1.23	2.00	27.20	186.00	1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1052E+01 EXCESS=0.0000E+00 OUTFLOW=0.1052E+01 BASIN STORAGE=0.4805E-04 PERCENT ERROR= 0.0

010610	MANE	1.38	62.68	188.28	1.73	2.00	62.48	188.00	1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2405E+01 OUTFLOW=0.2397E+01 BASIN STORAGE=0.4490E-02 PERCENT ERROR= 0.2

010620	MANE	0.08	62.44	188.14	1.73	2.00	62.17	188.00	1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2398E+01 EXCESS=0.0000E+00 OUTFLOW=0.2398E+01 BASIN STORAGE=0.1027E-03 PERCENT ERROR= 0.0

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

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 02610e.HC1

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY   1991               *
*          VERSION 4.0.1E               *
*                                       *
*  RUN DATE  02/20/1997  TIME  10:39:46 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*   U.S. ARMY CORPS OF ENGINEERS        *
*   HYDROLOGIC ENGINEERING CENTER       *
*         609 SECOND STREET             *
*      DAVIS, CALIFORNIA 95616          *
*          (916) 756-1104               *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX        XXX
```

```
:::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::
:::                                   :::
:::  Full Microcomputer Implementation :::
:::                by                 :::
:::       Haestad Methods, Inc.       :::
:::                                   :::
:::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              *
              *
              *
  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    1/97
              *
              *DIAGRAM
              *
 11           IT       2                     300
 12           IO       5

 13           KK  020010   BASIN
 14           BA   0.029
 15           PH       0       0    0.50    0.97    1.61    1.76    1.86    2.05
 16           LS       0      79       0       0      98       0
 17           UK     152  0.0100    0.30      63
 18           UK      55  0.0100    0.10      37
 19           RK     500  0.0085    0.02            TRAP      38     1.0
 20           RK     500  0.0025    0.02            TRAP      60     1.0

 21           KK  020020    FROM  020010
 22           RK    1331  0.0085   0.017            TRAP    45.0       1

 23           KK  020020   BASIN
 24           BA   0.066
 25           LS       0      79       0       0      98       0
 26           UK     141  0.0100    0.31      61
 27           UK      61  0.0100    0.10      39
 28           RK    1433  0.0025    0.02            TRAP      38     1.0
 29           RK    1331  0.0085    0.02            TRAP      45     1.0

 30           KK  020020 COMBINE
 31           HC       2

 32           KK  020030    FROM  020020
 33           RK    1308  0.0085   0.017            TRAP    45.0       1

 34           KK  020030   BASIN
 35           BA   0.070
 36           LS       0      79       0       0      98       0
 37           UK      58  0.0100    0.37      28
 38           UK     156  0.0100    0.10      72
 39           RK    1038  0.0025    0.02            TRAP      38     1.0
 40           RK    1269  0.0085    0.02            TRAP      45     1.0
```

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

  41          KK  020030 COMBINE
  42          HC       2

  43          KK  020040    FROM  020030
  44          RK     650  0.0040   0.013            CIRC     3.0

  45          KK  020040   BASIN
  46          BA   0.028
  47          LS       0      79       0       0      98       0
  48          UK      20  0.0100    0.40      14
  49          UK     200  0.0100    0.10      86
  50          RK    1367  0.0085    0.02            TRAP      15     1.0
  51          RK     596  0.0025    0.02            TRAP      79     1.0

  52          KK  020040 COMBINE
  53          HC       2
              * Inc pipe width from 6.8 to 7.0

  54          KK  020050    FROM  020040
  55          RK     600   0.004   0.013            CIRC     7.0

  56          KK  020210   BASIN
  57          BA   0.055
  58          LS       0      79       0       0      98       0
  59          UK      96  0.0100    0.34      44
  60          UK     113  0.0100    0.10      56
  61          RK    1003  0.0025    0.02            TRAP      49     1.0
  62          RK    1136  0.0085    0.02            TRAP      79     1.0

  63          KK  020220    FROM  020210
  64          RK    1317  0.0085   0.017            TRAP    97.5       1

  65          KK  020220   BASIN
  66          BA   0.036
  67          LS       0      79       0       0      98       0
  68          UK      59  0.0100    0.37      30
  69          UK     155  0.0100    0.10      70
  70          RK     642  0.0025    0.02            TRAP      38     1.0
  71          RK    1317  0.0085    0.02            TRAP      98     1.0

  72          KK  020220 COMBINE
  73          HC       2

  74          KK  020050    FROM  020220
  75          RK    1335  0.0085   0.017            TRAP    97.5       1

  76          KK  020050   BASIN
  77          BA   0.041
  78          LS       0      79       0       0      98       0
  79          UK      20   0.010    0.40      15
  80          UK     200   0.010    0.10      85
  81          RK     600  0.0025    0.02            TRAP      15     1.0
  82          RK    1335  0.0085    0.02            TRAP     100     1.0
```

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

  83          KK  020050 COMBINE
  84          HC       3

  85          KK  020050
  86          DT  020410
  87          DI       0     100     150     200     250     300     350     400     450     500
  88          DI     550     600     650     700     750     800     850     900     950    1000
  89          DQ       0      60      90     120     150     180     210     240     270     300
  90          DQ     330     360     390     420     450     480     510     540     570     600

  91          KK  020060    FROM  020050
  92          RK    1417  0.0080   0.013            CIRC     5.0

  93          KK  020060   BASIN
  94          BA   0.005
  95          LS       0      79       0       0      98       0
  96          UK      20  0.0100    0.40      15
  97          UK     200  0.0100    0.10      85
  98          RK    1305  0.0025    0.02            TRAP      49     1.0

  99          KK  020060 COMBINE
 100          HC       2

 101          KK  020070    FROM  020060
 102          RK    1355  0.0057   0.013            CIRC     6.0

 103          KK  020070   BASIN
 104          BA   0.056
 105          LS       0      79       0       0      98       0
 106          UK      20  0.0100    0.40      15
 107          UK     200  0.0100    0.10      85
 108          RK    1435  0.0025    0.02            TRAP      15     1.0
 109          RK    1287  0.0085    0.02            TRAP      15     1.0

 110          KK  020070 COMBINE
 111          HC       2

 112          KK  020310   BASIN
 113          BA   0.007
 114          LS       0      79       0       0      98       0
 115          UK      34  0.0100    0.39      20
 116          UK     184  0.0100    0.10      80
 117          RK    1115  0.0025    0.02            TRAP      45     1.0

 118          KK  020070    FROM  020310
 119          RK     123  0.0023   0.013            CIRC     2.5

 120          KK  020070 COMBINE
 121          HC       2
```

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

 122          KK  020080    FROM  020070
 123          RK    1244  0.0059   0.013            CIRC     6.0

 124          KK  020090    FROM  020080
 125          RK    2283  0.0035   0.013            CIRC     6.5

 126          KK  020050
 127          DR  020410

 128          KK  020410    FROM  020050
 129          RK     672  0.0065   0.013            DEEP     6.0

 130          KK  020410   BASIN
 131          BA   0.018
 132          LS       0      79       0       0      98       0
 133          UK      28  0.0100    0.39      18
 134          UK     191  0.0100    0.10      82
 135          RK    1662  0.0085    0.02            TRAP      15     1.0

 136          KK  020410 COMBINE
 137          HC       2

 138          KK  020420    FROM  020410
 139          RK     663  0.0065   0.013            DEEP     6.0

 140          KK  020420   BASIN
 141          BA   0.044
 142          LS       0      79       0       0      98       0
 143          UK     117  0.0100    0.33      52
 144          UK      88  0.0100    0.10      48
 145          RK     919  0.0085    0.02            TRAP      38     1.0
 146          RK    1388  0.0025    0.02            TRAP      30     1.0

 147          KK  020420 COMBINE
 148          HC       2

 149          KK  020510   BASIN
 150          BA   0.024
 151          LS       0      79       0       0      98       0
 152          UK     133  0.0100    0.31      57
 153          UK      70  0.0100    0.10      43
 154          RK     925  0.0085    0.02            TRAP      23     1.0
 155          RK     860  0.0025    0.02            TRAP      23     1.0

 156          KK  020420    FROM  020510
 157          RK    1388  0.0025   0.017            TRAP    30.0       1

 158          KK  020420 COMBINE
 159          HC       2
```

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

 160          KK  020430    FROM  020420
 161          RK    1315  0.0065   0.013            DEEP     6.0

 162          KK  020430   BASIN
 163          BA   0.051
 164          LS       0      79       0       0      98       0
 165          UK     108  0.0100    0.33      49
 166          UK      99  0.0100    0.10      51
 167          RK    2489  0.0085    0.02            TRAP      38     1.0

 168          KK  020430 COMBINE
 169          HC       2

 170          KK  020440    FROM  020430
 171          RK     353  0.0107   0.013            DEEP     6.0

 172          KK  020440   BASIN
 173          BA   0.006
 174          LS       0      79       0       0      98       0
 175          UK      92  0.0100    0.35      33
 176          UK     128  0.0100    0.10      67
 177          RK     706  0.0085    0.02            TRAP      19     1.0

 178          KK  020440 COMBINE
 179          HC       2

 180          KK  020450    FROM  020440
 181          RK     200   0.011   0.013            DEEP     6.0

 182          KK  020610   BASIN
 183          BA   0.011
 184          LS       0      79       0       0      98       0
 185          UK      56  0.0100    0.37      23
 186          UK     158  0.0100    0.10      77
 187          RK    1555  0.0085    0.02            TRAP      38     1.0

 188          KK  020620    FROM  020610
 189          RK    1119  0.0025   0.017            TRAP    45.0       1

 190          KK  020620   BASIN
 191          BA   0.061
 192          LS       0      79       0       0      98       0
 193          UK     127  0.0100    0.32      56
 194          UK      76  0.0100    0.10      44
 195          RK    1015  0.0025    0.02            TRAP      45     1.0
 196          RK    1660  0.0085    0.02            TRAP      45     1.0

 197          KK  020620 COMBINE
 198          HC       2
```

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

 199          KK  020630    FROM  020620
 200          RK     931  0.0085   0.017            TRAP    45.0       1

 201          KK  020630   BASIN
 202          BA   0.020
 203          LS       0      79       0       0      98       0
 204          UK     142  0.0100    0.31      62
 205          UK      59  0.0100    0.10      38
 206          RK    1329  0.0085    0.02            TRAP      49     1.0

 207          KK  020630 COMBINE
 208          HC       2

 209          KK  020640    FROM  020630
 210          RK     896  0.0085   0.017            TRAP    60.0       1

 211          KK  020640   BASIN
 212          BA   0.008
 213          LS       0      79       0       0      98       0
 214          UK     147  0.0100    0.31      53
 215          UK     110  0.0100    0.10      47
 216          RK     799  0.0085    0.02            TRAP      60     1.0

 217          KK  020640 COMBINE
 218          HC       2

 219          KK  020650    FROM  020640
 220          RK     268  0.0025   0.027            TRAP    50.0     1.0

 221          KK  020710   BASIN
 222          BA   0.060
 223          LS       0      79       0       0      98       0
 224          UK      43  0.0100    0.38      22
 225          UK     173  0.0100    0.10      78
 226          RK    1223  0.0085    0.02            TRAP      30     1.0
 227          RK    1178  0.0025    0.02            TRAP      60     1.0

 228          KK  020720    FROM  020710
 229          RK     731  0.0025   0.017            TRAP    48.8       1

 230          KK  020720   BASIN
 231          BA   0.043
 232          LS       0      79       0       0      98       0
 233          UK     149  0.0100    0.30      62
 234          UK      51  0.0100    0.10      38
 235          RK     497  0.0025    0.02            TRAP      38     1.0
 236          RK     962  0.0085    0.02            TRAP      60     1.0

 237          KK  020720 COMBINE
 238          HC       2
```

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

 239          KK  020730    FROM  020720
 240          RK     540  0.0085   0.017            TRAP    25.0     1.0

 241          KK  020730   BASIN
 242          BA   0.013
 243          LS       0      79       0       0      98       0
 244          UK      64  0.0100    0.37      33
 245          UK     150  0.0100    0.10      67
 246          RK     465  0.0025    0.02            TRAP      18     1.0
 247          RK     476  0.0085    0.02            TRAP      18     1.0

 248          KK  020730 COMBINE
 249          HC       2

 250          KK  020740    FROM  020730
 251          RK     441  0.0025   0.027            TRAP    50.0     1.0

 252          KK  020810   BASIN
 253          BA   0.071
 254          LS       0      79       0       0      98       0
 255          UK     165  0.0100    0.29      60
 256          UK      73  0.0100    0.10      40
 257          RK    1294  0.0085    0.02            TRAP      38     1.0
 258          RK    1256  0.0025    0.02            TRAP      60     1.0

 259          KK  020820    FROM  020810
 260          RK     354  0.0077   0.013            CIRC     1.5
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
 261          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

          (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

 13       020010
               V
               V
 21       020020
               .
               .
 23            .      020020
               .           .
               .           .
 30       020020............
               V
               V
 32       020030
               .
               .
 34            .      020030
               .           .
               .           .
 41       020030............
               V
               V
 43       020040
               .
               .
 45            .      020040
               .           .
               .           .
 52       020040............
               V
               V
 54       020050
               .
               .
 56            .      020210
               .           V
               .           V
 63            .      020220
               .           .
               .           .
 65            .           .      020220
               .           .           .
               .           .           .
 72            .      020220............
               .           V
               .           V
 74            .      020050
               .           .
               .           .
 76            .           .      020050
               .           .           .
               .           .           .
 83       020050........................
               .
               .
               .-------->  020410
 85       020050
               V
               V
 91       020060
```

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              .
              .
 93           .      020060
              .           .
              .           .
         020060............
              V
              V
 101     020070
              .
              .
 103          .      020070
              .           .
              .           .
 110     020070............
              .
              .
 112          .      020310
              .           V
              .           V
 118          .      020070
              .           .
              .           .
 120     020070............
              V
              V
 122     020080
              V
              V
 124     020090
              .
              .
  7           .           .<-------  020410
              .      020050
              .           V
              .           V
 128          .      020410
              .           .
              .           .
 130          .           .      020410
              .           .           .
              .           .           .
 136          .      020410............
              .           V
              .           V
 138          .      020420
              .           .
              .           .
 140          .           .      020420
              .           .           .
              .           .           .
 147          .      020420............
              .           .
              .           .
 149          .           .      020510
              .           .           V
              .           .           V
 156          .           .      020420
              .           .           .
              .           .           .
  8           .      020420............
              .           V
              .           V
 160          .      020430
              .           .
              .           .
```

```
162          .           .      020430
             .           .           .
             .           .           .
168          .      020430............
             .           V
             .           V
170          .      020440
             .           .
             .           .
172          .           .      020440
             .           .           .
             .           .           .
178          .      020440............
             .           V
             .           V
180          .      020450
             .           .
             .           .
182          .           .      020610
             .           .           V
             .           .           V
188          .           .      020620
             .           .           .
             .           .           .
190          .           .           .      020620
             .           .           .           .
             .           .           .           .
197          .           .      020620............
             .           .           V
             .           .           V
199          .           .      020630
             .           .           .
             .           .           .
             .           .           .      020630
             .           .           .           .
             .           .           .           .
207          .           .      020630............
             .           .           V
             .           .           V
209          .           .      020640
             .           .           .
             .           .           .
211          .           .           .      020640
             .           .           .           .
             .           .           .           .
217          .           .      020640............
             .           .           V
             .           .           V
219          .           .      020650
             .           .           .
             .           .           .
221          .           .           .      020710
             .           .           .           V
             .           .           .           V
228          .           .           .      020720
             .           .           .           .
             .           .           .           .
230          .           .           .           .      020720
             .           .           .           .           .
             .           .           .           .           .
7            .           .           .      020720............
             .           .           .           V
             .           .           .           V
239          .           .           .      020730
             .           .           .           .
             .           .           .           .
```

```
241          .          .          .          .      020730
             .          .          .          .           .
             .          .          .          .           .
248          .          .          .     020730............
             .          .          .          V
             .          .          .          V
250          .          .          .     020740
             .          .          .          .
             .          .          .          .
252          .          .          .          .      020810
             .          .          .          .           V
             .          .          .          .           V
259          .          .          .          .      020820
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 02610e.HC1

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****************************************
*                                      *
     LOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY   1991              *
*           VERSION 4.0.1E             *
*                                      *
*  RUN DATE  02/20/1997  TIME  10:39:46 *
*                                      *
****************************************
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
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```
*************************************************************************
STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
SCOTTSDALE - TEMPE - PHOENIX
*************************************************************************

Kimley-Horn and Associates, Inc.
KVL Consultants, Inc.

10-Year, 6-Hour Storm Event
1/97

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

    IT          HYDROGRAPH TIME DATA
                       NMIN           2  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        0958  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL    0.03 HOURS
                      TOTAL TIME BASE    9.97 HOURS

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

        *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


        *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


        *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT
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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	020010	36.	3.10	3.	2.	2.	0.03		
ROUTED TO	020020	34.	3.13	3.	2.	2.	0.03		
HYDROGRAPH AT	020020	72.	3.13	7.	4.	4.	0.07		
2 COMBINED AT	020020	106.	3.13	10.	6.	6.	0.09		
ROUTED TO	020030	105.	3.17	10.	6.	6.	0.09		
HYDROGRAPH AT	020030	141.	3.13	11.	7.	7.	0.07		
2 COMBINED AT	020030	240.	3.17	21.	13.	13.	0.16		
ROUTED TO	020040	236.	3.17	21.	13.	13.	0.16		
HYDROGRAPH AT	020040	63.	3.17	5.	3.	3.	0.03		
2 COMBINED AT	020040	299.	3.17	26.	16.	16.	0.19		
ROUTED TO	020050	293.	3.17	26.	16.	16.	0.19		
HYDROGRAPH AT	020210	85.	3.13	7.	4.	4.	0.05		
ROUTED TO	020220	84.	3.20	7.	4.	4.	0.05		
HYDROGRAPH AT	020220	67.	3.17	6.	3.	3.	0.04		
2 COMBINED AT	020220	147.	3.17	13.	8.	8.	0.09		
ROUTED TO	020050	146.	3.23	13.	8.	8.	0.09		
HYDROGRAPH AT	020050	90.	3.17	7.	4.	4.	0.04		
3 COMBINED AT	020050	513.	3.20	46.	28.	28.	0.32		
DIVERSION TO	020410	308.	3.20	28.	17.	17.	0.32		
HYDROGRAPH AT	020050	205.	3.20	19.	11.	11.	0.32		
ROUTED TO	020060	201.	3.20	19.	11.	11.	0.32		
HYDROGRAPH AT	020060	9.	3.23	1.	1.	1.	0.00		
2 COMBINED AT	020060	209.	3.20	19.	12.	12.	0.33		
ROUTED TO	020070	208.	3.23	19.	12.	12.	0.33		
HYDROGRAPH AT	020070	124.	3.17	10.	6.	6.	0.06		
2 COMBINED AT	020070	312.	3.20	29.	18.	18.	0.39		
HYDROGRAPH AT	020310	13.	3.20	1.	1.	1.	0.01		
ROUTED TO	020070	13.	3.20	1.	1.	1.	0.01		
2 COMBINED AT	020070	325.	3.20	30.	18.	18.	0.39		

ROUTED TO	020080	321.	3.23	30.	18.	18.	0.39
ROUTED TO	020090	317.	3.27	30.	18.	18.	0.39
HYDROGRAPH AT	020050	308.	3.20	28.	17.	17.	0.00
ROUTED TO	020410	305.	3.20	28.	17.	17.	0.00
HYDROGRAPH AT	020410	39.	3.13	3.	2.	2.	0.02
2 COMBINED AT	020410	338.	3.20	31.	19.	19.	0.02
ROUTED TO	020420	334.	3.20	31.	19.	19.	0.02
HYDROGRAPH AT	020420	59.	3.13	5.	3.	3.	0.04
2 COMBINED AT	020420	385.	3.20	36.	22.	22.	0.06
HYDROGRAPH AT	020510	32.	3.13	3.	2.	2.	0.02
ROUTED TO	020420	31.	3.20	3.	2.	2.	0.02
2 COMBINED AT	020420	416.	3.20	39.	24.	24.	0.09
ROUTED TO	020430	407.	3.20	39.	24.	24.	0.09
HYDROGRAPH AT	020430	71.	3.13	6.	4.	4.	0.05
2 COMBINED AT	020430	467.	3.20	46.	28.	28.	0.14
ROUTED TO	020440	463.	3.20	46.	28.	28.	0.14
HYDROGRAPH AT	020440	12.	3.10	1.	1.	1.	0.01
2 COMBINED AT	020440	471.	3.20	46.	28.	28.	0.14
ROUTED TO	020450	469.	3.20	46.	28.	28.	0.14
HYDROGRAPH AT	020610	21.	3.17	2.	1.	1.	0.01
ROUTED TO	020620	21.	3.23	2.	1.	1.	0.01
HYDROGRAPH AT	020620	75.	3.17	7.	4.	4.	0.06
2 COMBINED AT	020620	90.	3.17	9.	5.	5.	0.07
ROUTED TO	020630	89.	3.20	9.	5.	5.	0.07
HYDROGRAPH AT	020630	22.	3.10	2.	1.	1.	0.02
2 COMBINED AT	020630	106.	3.20	11.	7.	7.	0.09
ROUTED TO	020640	105.	3.20	11.	7.	7.	0.09
HYDROGRAPH AT	020640	11.	3.13	1.	1.	1.	0.01
2 COMBINED AT	020640	113.	3.20	12.	7.	7.	0.10
ROUTED TO	020650	112.	3.23	12.	7.	7.	0.10
HYDROGRAPH AT	020710	124.	3.17	10.	6.	6.	0.06
ROUTED TO	020720	121.	3.20	10.	6.	6.	0.06
HYDROGRAPH AT	020720	54.	3.10	5.	3.	3.	0.04

2 COMBINED AT	020720	162.	3.17	15.	9.	9.	0.10
ROUTED TO	020730	159.	3.17	15.	9.	9.	0.10
HYDROGRAPH AT	020730	26.	3.10	2.	1.	1.	0.01
2 COMBINED AT	020730	181.	3.17	17.	10.	10.	0.12
ROUTED TO	020740	178.	3.20	17.	10.	10.	0.12
HYDROGRAPH AT	020810	79.	3.13	8.	5.	5.	0.07
ROUTED TO	020820	79.	3.17	8.	5.	5.	0.07

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
020010	MANE	0.87	35.93	185.36	1.02	2.00	35.80	186.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1581E+01 OUTFLOW=0.1571E+01 BASIN STORAGE=0.9694E-02 PERCENT ERROR= 0.0

020020	MANE	1.53	34.53	189.54	1.01	2.00	34.11	188.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1570E+01 EXCESS=0.0000E+00 OUTFLOW=0.1565E+01 BASIN STORAGE=0.3374E-02 PERCENT ERROR= 0.1

020020	MANE	1.12	73.08	189.14	1.04	2.00	71.85	188.00	1.04

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3688E+01 OUTFLOW=0.3653E+01 BASIN STORAGE=0.2601E-01 PERCENT ERROR= 0.2

020030	MANE	0.94	105.51	190.64	1.03	2.00	104.59	190.00	1.03

NTINUITY SUMMARY (AC-FT) - INFLOW=0.5220E+01 EXCESS=0.0000E+00 OUTFLOW=0.5212E+01 BASIN STORAGE=0.7462E-02 PERCENT ERROR= 0.0

020030	MANE	0.91	141.83	188.08	1.46	2.00	141.40	188.00	1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5478E+01 OUTFLOW=0.5459E+01 BASIN STORAGE=0.1420E-01 PERCENT ERROR= 0.1

020040	MANE	0.38	238.53	190.49	1.21	2.00	235.91	190.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1067E+02 EXCESS=0.0000E+00 OUTFLOW=0.1067E+02 BASIN STORAGE=0.8218E-03 PERCENT ERROR= 0.0

020040	MANE	0.91	63.97	189.00	1.64	2.00	63.23	190.00	1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2457E+01 OUTFLOW=0.2450E+01 BASIN STORAGE=0.6456E-02 PERCENT ERROR= 0.0

020050	MANE	0.38	296.87	190.70	1.28	2.00	292.90	190.00	1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1313E+02 EXCESS=0.0000E+00 OUTFLOW=0.1313E+02 BASIN STORAGE=0.7486E-03 PERCENT ERROR= 0.0

020210	MANE	1.19	86.46	189.24	1.26	2.00	85.31	188.00	1.26

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3708E+01 OUTFLOW=0.3685E+01 BASIN STORAGE=0.1523E-01 PERCENT ERROR= 0.2

020220	MANE	1.47	84.83	191.54	1.25	2.00	84.32	192.00	1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3686E+01 EXCESS=0.0000E+00 OUTFLOW=0.3678E+01 BASIN STORAGE=0.6605E-02 PERCENT ERROR= 0.0

020220	MANE	1.52	67.50	189.97	1.44	2.00	67.43	190.00	1.44

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2769E+01 OUTFLOW=0.2756E+01 BASIN STORAGE=0.8818E-02 PERCENT ERROR= 0.2

020050	MANE	1.13	146.66	192.64	1.32	2.00	145.59	194.00	1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6433E+01 EXCESS=0.0000E+00 OUTFLOW=0.6409E+01 BASIN STORAGE=0.1093E-01 PERCENT ERROR= 0.2

020050	MANE	1.37	90.20	189.88	1.62	2.00	89.91	190.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3570E+01 OUTFLOW=0.3553E+01 BASIN STORAGE=0.1038E-01 PERCENT ERROR= 0.2

020060	MANE	0.57	203.34	192.66	0.53	2.00	201.18	192.00	0.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9235E+01 EXCESS=0.0000E+00 OUTFLOW=0.9235E+01 BASIN STORAGE=0.1089E-02 PERCENT ERROR= 0.0

020060	MANE	2.00	8.62	193.91	1.62	2.00	8.62	194.00	1.62

NTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4355E+00 OUTFLOW=0.4314E+00 BASIN STORAGE=0.2233E-02 PERCENT ERROR= 0.4

020070	MANE	0.48	208.80	193.27	0.55	2.00	207.57	194.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9667E+01 EXCESS=0.0000E+00 OUTFLOW=0.9671E+01 BASIN STORAGE=0.1237E-02 PERCENT ERROR= -0.1

020070	MANE	0.78	125.66	188.92	1.63	2.00	124.16	190.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4876E+01 OUTFLOW=0.4860E+01 BASIN STORAGE=0.1109E-01 PERCENT ERROR= 0.1

020310	MANE	2.00	13.05	190.63	1.56	2.00	12.85	192.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5859E+00 OUTFLOW=0.5819E+00 BASIN STORAGE=0.1874E-02 PERCENT ERROR= 0.4

020070	MANE	0.24	12.83	192.00	1.56	2.00	12.83	192.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5812E+00 EXCESS=0.0000E+00 OUTFLOW=0.5812E+00 BASIN STORAGE=0.1390E-04 PERCENT ERROR= 0.0

020080	MANE	0.49	323.76	193.02	0.72	2.00	320.52	194.00	0.72

NUITY SUMMARY (AC-FT) - INFLOW=0.1511E+02 EXCESS=0.0000E+00 OUTFLOW=0.1511E+02 BASIN STORAGE=0.1370E-02 PERCENT ERROR= 0.0

020090	MANE	0.93	319.56	195.69	0.72	2.00	317.26	196.00	0.72

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1511E+02 EXCESS=0.0000E+00 OUTFLOW=0.1512E+02 BASIN STORAGE=0.3213E-02 PERCENT ERROR=  -0.1

          020410  MANE        0.34    305.75    192.23     -1.00      2.00    304.61    192.00       -1.00

          020410  MANE        1.33     39.44    188.14      1.59      2.00     39.36    188.00        1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1531E+01 OUTFLOW=0.1526E+01 BASIN STORAGE=0.2822E-02 PERCENT ERROR=   0.2

          020420  MANE        0.30    336.05    192.52     16.02      2.00    333.80    192.00       16.03

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1538E+02 EXCESS=0.0000E+00 OUTFLOW=0.1538E+02 BASIN STORAGE=0.1275E-02 PERCENT ERROR=   0.0

          020420  MANE        1.60     59.68    189.32      1.15      2.00     59.25    188.00        1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2727E+01 OUTFLOW=0.2709E+01 BASIN STORAGE=0.1276E-01 PERCENT ERROR=   0.2

          020510  MANE        1.19     32.22    187.32      1.09      2.00     31.54    188.00        1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1406E+01 OUTFLOW=0.1399E+01 BASIN STORAGE=0.7105E-02 PERCENT ERROR=   0.0

          020420  MANE        2.00     31.04    192.40      1.09      2.00     30.98    192.00        1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1398E+01 EXCESS=0.0000E+00 OUTFLOW=0.1396E+01 BASIN STORAGE=0.3774E-02 PERCENT ERROR=  -0.1

          020430  MANE        0.51    413.46    192.91      4.25      2.00    407.30    192.00        4.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1949E+02 EXCESS=0.0000E+00 OUTFLOW=0.1949E+02 BASIN STORAGE=0.3132E-02 PERCENT ERROR=   0.0

          020430  MANE        2.00     71.83    188.45      1.19      2.00     70.92    188.00        1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3265E+01 OUTFLOW=0.3242E+01 BASIN STORAGE=0.1379E-01 PERCENT ERROR=   0.3

          020440  MANE        0.20    465.40    192.34      3.11      2.00    463.46    192.00        3.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2273E+02 EXCESS=0.0000E+00 OUTFLOW=0.2273E+02 BASIN STORAGE=0.7796E-03 PERCENT ERROR=   0.0

          020440  MANE        0.88     12.32    185.87      1.40      2.00     12.28    186.00        1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4493E+00 OUTFLOW=0.4484E+00 BASIN STORAGE=0.9149E-03 PERCENT ERROR=   0.0

          020450  MANE        0.21    470.01    192.30      3.04      2.00    468.70    192.00        3.04

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2319E+02 EXCESS=0.0000E+00 OUTFLOW=0.2318E+02 BASIN STORAGE=0.4418E-03 PERCENT ERROR=   0.0
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020610  MANE        2.00    21.81   189.02     1.52     2.00    21.25   190.00       1.52

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8983E+00 OUTFLOW=0.8939E+00 BASIN STORAGE=0.2189E-02 PERCENT ERROR=   0.2

020620  MANE        2.00    21.22   194.38     1.52     2.00    21.18   194.00       1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8928E+00 EXCESS=0.0000E+00 OUTFLOW=0.8917E+00 BASIN STORAGE=0.2267E-02 PERCENT ERROR=  -0.1

020620  MANE        1.35    77.27   188.68     1.10     2.00    75.39   190.00       1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3615E+01 OUTFLOW=0.3588E+01 BASIN STORAGE=0.2100E-01 PERCENT ERROR=   0.2

020630  MANE        0.81    89.26   192.05     1.17     2.00    89.26   192.00       1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4480E+01 EXCESS=0.0000E+00 OUTFLOW=0.4478E+01 BASIN STORAGE=0.4207E-02 PERCENT ERROR=  -0.1

020630  MANE        1.83    22.55   187.37     1.03     2.00    22.18   186.00       1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1104E+01 OUTFLOW=0.1095E+01 BASIN STORAGE=0.6658E-02 PERCENT ERROR=   0.3

020640  MANE        0.76   105.39   192.71     1.14     2.00   105.28   192.00       1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5573E+01 EXCESS=0.0000E+00 OUTFLOW=0.5569E+01 BASIN STORAGE=0.5782E-02 PERCENT ERROR=   0.0

020640  MANE        1.52    10.72   187.14     1.14     2.00    10.57   188.00       1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4905E+00 OUTFLOW=0.4873E+00 BASIN STORAGE=0.2466E-02 PERCENT ERROR=   0.2

020650  MANE        0.44   113.14   192.96     1.14     2.00   111.54   194.00       1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6055E+01 EXCESS=0.0000E+00 OUTFLOW=0.6054E+01 BASIN STORAGE=0.3411E-02 PERCENT ERROR=   0.0

020710  MANE        1.43   125.40   189.01     1.54     2.00   123.90   190.00       1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4940E+01 OUTFLOW=0.4918E+01 BASIN STORAGE=0.1377E-01 PERCENT ERROR=   0.2

020720  MANE        0.76   123.15   191.17     1.54     2.00   121.40   192.00       1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4920E+01 EXCESS=0.0000E+00 OUTFLOW=0.4924E+01 BASIN STORAGE=0.3551E-02 PERCENT ERROR=  -0.2

020720  MANE        1.02    54.03   185.86     1.03     2.00    53.91   186.00       1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2374E+01 OUTFLOW=0.2356E+01 BASIN STORAGE=0.1435E-01 PERCENT ERROR=   0.1
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        020730  MANE        0.45    160.88    190.68      1.33      2.00    158.84    190.00        1.33

    NUITY SUMMARY (AC-FT) - INFLOW=0.7279E+01 EXCESS=0.0000E+00 OUTFLOW=0.7279E+01 BASIN STORAGE=0.1953E-02 PERCENT ERROR=   0.0

        020730  MANE        0.58     25.92    187.02      1.40      2.00     25.57    186.00        1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9735E+00 OUTFLOW=0.9710E+00 BASIN STORAGE=0.1826E-02 PERCENT ERROR=   0.1

        020740  MANE        0.52    180.03    191.33      1.33      2.00    178.26    192.00        1.33

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8253E+01 EXCESS=0.0000E+00 OUTFLOW=0.8251E+01 BASIN STORAGE=0.5067E-02 PERCENT ERROR=   0.0

        020810  MANE        1.74     81.90    189.05      1.05      2.00     79.35    188.00        1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4015E+01 OUTFLOW=0.3976E+01 BASIN STORAGE=0.3042E-01 PERCENT ERROR=   0.2

        020820  MANE        0.30     79.25    188.82      1.05      2.00     79.00    190.00        1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3972E+01 EXCESS=0.0000E+00 OUTFLOW=0.3972E+01 BASIN STORAGE=0.2121E-03 PERCENT ERROR=   0.0


*** NORMAL END OF HEC-1 ***
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HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 03610e.HC1

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*****************************************
*                                       *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*              MAY   1991               *
*          VERSION 4.0.1E               *
*                                       *
*  RUN DATE  07/18/1997  TIME  08:18:14 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX           X
X     X  X        X     X         XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
```

```
:::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::
:::                                   :::
:::  Full Microcomputer Implementation :::
:::                by                 :::
:::       Haestad Methods, Inc.       :::
:::                                   :::
:::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              *
              *
              *
  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    1/97
              *
              *
              *DIAGRAM
 11           IT       2                     300
 12           IO       5

 13           KK  030010   BASIN
 14           BA   0.034
 15           PH       0       0    0.50    0.97    1.61    1.76    1.86    2.05
 16           LS       0      79       0       0      98       0
 17           UK      20  0.0100    0.40      12
 18           UK     200  0.0100    0.10      88
 19           RK    1240  0.0086    0.02            TRAP      20     1.0
 20           RK     869  0.0010    0.02            TRAP      60     1.0

 21           KK  030020    FROM  030010
 22           RK     427  0.0050   0.017            TRAP    60.0       1

 23           KK  030020   BASIN
 24           BA   0.027
 25           LS       0      79       0       0      98       0
 26           UK     150  0.0100    0.30      65
 27           UK      50  0.0100    0.10      35
 28           RK    1175  0.0086    0.02            TRAP      38     1.0
 29           RK     427  0.0010    0.02            TRAP      60     1.0

 30           KK  030020 COMBINE
 31           HC       2

 32           KK  030030    FROM  030020
 33           RK    1326  0.0086   0.017            TRAP    45.0       1

 34           KK  030030   BASIN
 35           BA   0.010
 36           LS       0      79       0       0      98       0
 37           UK     150  0.0100    0.30      65
 38           UK      50  0.0100    0.10      35
 39           RK    1326  0.0086    0.02            TRAP      45     1.0
```

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

  40          KK  030210   BASIN
  41          BA   0.046
  42          LS       0      79       0       0      98       0
  43          UK     125  0.0100    0.32      55
  44          UK      79  0.0100    0.10      45
  45          RK    1246  0.0086    0.02            TRAP      38     1.0
  46          RK    1109  0.0010    0.02            TRAP      45     1.0

  47          KK  030030    FROM  030210
  48          RK     154  0.0010   0.017            TRAP    45.0       1

  49          KK  030030 COMBINE
  50          HC       3

  51          KK  030040    FROM  030030
  52          RK    1317  0.0010   0.017            TRAP    45.0       1

  53          KK  030040   BASIN
  54          BA   0.056
  55          LS       0      79       0       0      98       0
  56          UK     150  0.0100    0.30      65
  57          UK      50  0.0100    0.10      35
  58          RK    1299  0.0086    0.02            TRAP      38     1.0
  59          RK    1317  0.0010    0.02            TRAP      45     1.0

  60          KK  030040 COMBINE
  61          HC       2

  62          KK  030050    FROM  030040
  63          RK    1317  0.0086   0.017            TRAP    60.0       1

  64          KK  030050   BASIN
  65          BA   0.034
  66          LS       0      79       0       0      98       0
  67          UK      85  0.0100    0.35      28
  68          UK     125  0.0100    0.10      72
  69          RK     640  0.0010    0.02            TRAP      20     1.0
  70          RK    1317  0.0086    0.02            TRAP      53     1.0

  71          KK  030310   BASIN
  72          BA   0.008
  73          LS       0      79       0       0      98       0
  74          UK      20  0.0100    0.40      15
  75          UK     200  0.0100    0.10      85
  76          RK    1505  0.0086    0.02            TRAP      49     1.0

  77          KK  030320    FROM  030310
  78          RK     683  0.0010   0.017            TRAP    97.5       1
```

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

 79           KK  030320   BASIN
 80           BA   0.044
 81           LS       0      79       0       0      98       0
 82           UK     108  0.0100    0.33      49
 83           UK      99  0.0100    0.10      51
 84           RK    1333  0.0010    0.02            TRAP      38     1.0
 85           RK    1237  0.0086    0.02            TRAP      45     1.0

 86           KK  030320 COMBINE
 87           HC       2

 88           KK  030330    FROM  030320
 89           RK     641  0.0010   0.017            TRAP    97.5       1

 90           KK  030330   BASIN
 91           BA   0.008
 92           LS       0      79       0       0      98       0
 93           UK      26  0.0100    0.40      17
 94           UK     193  0.0100    0.10      83
 95           RK     641  0.0010    0.02            TRAP      79     1.0

 96           KK  030410   BASIN
 97           BA   0.022
 98           LS       0      79       0       0      98       0
 99           UK     150  0.0100    0.30      65
100           UK      50  0.0100    0.10      35
101           RK     796  0.0086    0.02            TRAP      38     1.0
102           RK     611  0.0010    0.02            TRAP      38     1.0

103           KK  030330    FROM  030410
104           RK     464  0.0086   0.017            TRAP     9.0       1

105           KK  030330 COMBINE
106           HC       3

107           KK  030050    FROM  030330
108           RK     670  0.0010   0.017            TRAP    78.8       1

109           KK  030050 COMBINE
110           HC       3

111           KK  030060    FROM  030050
112           RK     129  0.0010   0.017            TRAP    78.8       1
              *
              * Part of BASIN 030510 (new name: 050005) MOVED TO HEC-1 INPUT FILE FOR BASIN 05
              * BASIN 030510 SPLIT TO BASINS 030509 AND 030510 AND 050005
              *

113           KK  030509   BASIN
114           BA   0.016
115           LS       0      86       0
116           UK     300   0.029    0.20     100
117           RK    1300   0.014    0.03            TRAP      30     2.0
```

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

 118          KK  030510    FROM  030509
 119          RK    1900    .014     .03            TRAP      30       2

 120          KK  030510   BASIN
 121          BA   0.070
 122          LS       0      85       0       0      98       0
 123          UK     300  0.0140    0.20      75
 124          UK     100  0.0100    0.10      25
 125          RK    1500   0.014    0.03            TRAP      30       2
              *   Combine routed flows and flows from 030510

 126          KK  030510 COMBINE
 127          HC       2

 128          KK  030520    FROM  030510
 129          RK    1252  0.0143   0.017            TRAP      60       1

 130          KK  030520   BASIN
 131          BA   0.041
 132          LS       0      80       0       0      98       0
 133          UK     151  0.0100    0.30      65
 134          UK      50  0.0100    0.10      35
 135          RK    1117  0.0143    0.02            TRAP      38     1.0
 136          RK     776  0.0034    0.02            TRAP      38     1.0

 137          KK  030520 COMBINE
 138          HC       2

 139          KK  030710   BASIN
 140          BA   0.021
 141          LS       0      79       0       0      98       0
 142          UK     150  0.0100    0.30      59
 143          UK      50  0.0100    0.10      41
 144          RK     392  0.0143    0.02            TRAP      38     1.0
 145          RK     695  0.0034    0.02            TRAP      38     1.0

 146          KK  030720    FROM  030710
 147          RK     900  0.0034   0.017            TRAP    37.5       1

 148          KK  030720   BASIN
 149          BA   0.027
 150          LS       0      79       0       0      98       0
 151          UK     150  0.0100    0.30      65
 152          UK      50  0.0100    0.10      35
 153          RK     970  0.0143    0.02            TRAP      38     1.0
 154          RK     890  0.0034    0.02            TRAP      38     1.0

 155          KK  030720 COMBINE
 156          HC       2
```

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

 157          KK  030520    FROM  030720
 158          RK     776  0.0034   0.017            TRAP    37.5       1

 159          KK  030520 COMBINE
 160          HC       2

 161          KK  030530    FROM  030520
 162          RK    1067  0.0034   0.017            TRAP    37.5       1
              *
              *  SPLIT BASIN 030810 TO BASINS 030809 AND 030810
              *

 163          KK  030809   BASIN
 164          BA   0.012
 165          LS       0      86       0
 166          UK     300   0.029    0.20     100
 167          RK     800   0.024    0.03            TRAP      60     1.0

 168          KK  030810    FROM  030809
 169          RK    1350   0.015    0.03            TRAP    60.0       1

 170          KK  030810   BASIN
 171          BA   0.072
 172          LS       0      85       0       0      98       0
 173          UK     300  0.0100    0.20      99
 174          UK     100  0.0100    0.10       1
 175          RK     539  0.0034    0.02            TRAP      60     1.0
 176          RK    3226  0.0207    0.02            TRAP      60     1.0

 177          KK  030810 COMBINE
 178          HC       2

 179          KK  030820    FROM  030810
 180          RK     101  0.0143   0.017            TRAP    60.0       1

 181          KK  030530    FROM  030820
 182          RK    1249  0.0143   0.017            TRAP    37.5       1

 183          KK  030530   BASIN
 184          BA   0.044
 185          LS       0      82       0       0      98       0
 186          UK     154  0.0100    0.30      66
 187          UK      51  0.0100    0.10      34
 188          RK    1390  0.0143    0.02            TRAP      38     1.0
 189          RK    1067  0.0034    0.02            TRAP      38     1.0

 190          KK  030530 COMBINE
 191          HC       3
```

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

 192          KK  030540    FROM  030530
 193          RK     574  0.0034   0.017            TRAP    37.5       1

 194          KK  030540   BASIN
 195          BA   0.041
 196          LS       0      82       0       0      98       0
 197          UK     156  0.0100    0.30      65
 198          UK      56  0.0100    0.10      35
 199          RK    2079  0.0143    0.02            TRAP      38     1.0
 200          RK     574  0.0034    0.02            TRAP      38     1.0

 201          KK  030540 COMBINE
 202          HC       2

 203          KK  030550   BASIN
 204          BA   0.043
 205          LS       0      80       0       0      98       0
 206          UK      65  0.0100    0.37      16
 207          UK     184  0.0100    0.10      84
 208          RK    1232  0.0034    0.02            TRAP      57     1.0

 209          KK  030550 COMBINE
 210          HC       2
              *
              *   Overflow at Elev 71 (sidewalk elev) into canal
              *

 211          KK    AUTO  Detention Basin North of Auto Park
 212          RS       1    STOR
 213          SV       0     0.6     1.4     3.0     5.7    11.1    22.5    32.5    45.5
 214          SE      65      66      67      68      69      70      71      72      73
 215          SQ       0       4      15      26      50      65     106     165     500
              *
              *  Auto Det Basin simulates outlet at McDowell Road
              *  Routing from McDowell Road to Conc pt 580:
              *

 216          KK  030580    FROM  030570
 217          RK     400  0.0024   0.030            TRAP    15.0     1.0
              *
              * SPLIT BASIN 030910 TO BASINS 030909 AND 030910
              *

 218          KK  030909   BASIN
 219          BA   0.023
 220          LS       0      85       0       0      98       0
 221          UK     300   0.169    0.20      99
 222          UK     100   0.010    0.10       1
 223          RK    1400   0.169    0.03            TRAP      60       1
```

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

 224          KK  030910    FROM  030909
 225          RK    2400   0.014    0.03            TRAP      60       1
              * Changed RK card to .03 from .30

 226          KK  030910   BASIN
 227          BA   0.057
 228          LS       0      86       0       0      98       0
 229          UK     300  0.0100    0.20      99
 230          UK     100  0.0100    0.10       1
 231          RK     214  0.0034    0.03            TRAP      60     1.0
 232          RK    3794  0.0207    0.03            TRAP      60     1.0

 233          KK  030910 COMBINE
 234          HC       2

 235          KK  030920    FROM  030910
 236          RK     352  0.0150   0.021            CIRC     3.0

 237          KK  031010   BASIN
 238          BA   0.082
 239          LS       0      87       0       0      98       0
 240          UK     300  0.0100    0.20      99
 241          UK     100  0.0100    0.10       1
 242          RK    1819  0.0207    0.03            TRAP      60     1.0
 243          RK    3004  0.0207    0.03            TRAP      60     1.0

 244          KK  030920    FROM  031010
 245          RK     223  0.0129   0.021            CIRC     3.0

 246          KK  030920 COMBINE
 247          HC       2

 248          KK  030930    FROM  030920
 249          RK     578  0.0150   0.013            CIRC     3.5

 250          KK  030930   BASIN
 251          BA   0.014
 252          LS       0      80       0       0      98       0
 253          UK     196  0.0100    0.27      68
 254          UK     137  0.0100    0.10      32
 255          RK     963  0.0143    0.02            TRAP     150     1.0

 256          KK  030930 COMBINE
 257          HC       2

 258          KK  030580    FROM  030930
 259          RK     750  0.0034   0.025            TRAP       8     2.0

 260          KK  030580 COMBINE
 261          HC       2
```

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

 262          KK  030590    FROM  030580
 263          RK    1735  0.0024   0.030            TRAP    15.0     1.0

 264          KK  030590   BASIN
 265          BA   0.209
 266          LS       0      84       0       0      98       0
 267          UK     300  0.0100    0.20      99
 268          UK     100  0.0100    0.10       1
 269          RK    1305  0.0034    0.02            TRAP      64     1.0
 270          RK    3794  0.0207    0.03            TRAP      60     1.0

 271          KK  030590 COMBINE
 272          HC       2
              *
              * Add natural detention at Desert Botanical Gardens
              *

 273          KK     DBG Retention Basin
 274          RS       1    STOR
 275          SV       0     0.1     0.1     0.1     0.1     1.4     7.4    25.8
 276          SE      59      60      61      62      64      66      68      70
 277          SQ       0      14      40      40      45      55      65      65
 278          ST      68     400       3     1.5

 279          KK  030610    FROM  030600
 280          RK     675  0.0086   0.020            TRAP     8.0     1.0

 281          KK  030610   BASIN
 282          BA   0.018
 283          LS       0      77       0       0      98       0
 284          UK     174  0.0100    0.30      41
 285          UK     122  0.0100    0.10      59
 286          RK     409  0.0010    0.02            TRAP      20     1.0
 287          RK     675  0.0086    0.02            TRAP      20     1.0

 288          KK  030610 COMBINE
 289          HC       2

 290          KK  030620    FROM  030610
 291          RK    1290  0.0086   0.020            TRAP    10.0     1.0

 292          KK  030620   BASIN
 293          BA   0.040
 294          LS       0      78       0       0      98       0
 295          UK     141  0.0100    0.31      61
 296          UK      61  0.0100    0.10      39
 297          RK    2296  0.0086    0.02            TRAP      38     1.0
 298          RK     251  0.0010    0.02            TRAP      60     1.0
```

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

 299          KK  030620 COMBINE
 300          HC       2

 301          KK  030630    FROM  030620
 302          RK     637  0.0020   0.017            TRAP    60.0       1

 303          KK  030630   BASIN
 304          BA   0.040
 305          LS       0      78       0       0      98       0
 306          UK     198  0.0100    0.30      17
 307          UK     193  0.0100    0.10      83
 308          RK    2031  0.0086    0.02            TRAP      60     1.0
 309          RK     637  0.0010    0.02            TRAP      60     1.0

 310          KK  030630 COMBINE
 311          HC       2

 312          KK  030640    FROM  030630
 313          RK     162  0.0020   0.017            TRAP    60.0       1
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
 314          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

        (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

13      030010
            V
            V
21      030020
            .
            .
23          .      030020
            .           .
            .           .
30      030020............
            V
            V
32      030030
            .
            .
34          .      030030
            .           .
            .           .
40          .           .      030210
            .           .           V
            .           .           V
47          .           .      030030
            .           .           .
            .           .           .
 9      030030........................
            V
            V
 1      030040
            .
            .
53          .      030040
            .           .
            .           .
60      030040............
            V
            V
62      030050
            .
            .
64          .      030050
            .           .
            .           .
71          .           .      030310
            .           .           V
            .           .           V
77          .           .      030320
            .           .           .
            .           .           .
79          .           .           .      030320
            .           .           .           .
            .           .           .           .
86          .           .      030320............
            .           .           V
            .           .           V
 1          .           .      030330
            .           .           .
            .           .           .
90          .           .           .      030330
            .           .           .           .
```

```
                .           .           .           .
 96             .           .           .           .       030410
                .           .           .           .           V
                .           .           .           .           V
  3             .           .           .           .       030330
                .           .           .           .           .
                .           .           .           .           .
105             .           .       030330.......................
                .           .           V
                .           .           V
107             .           .       030050
                .           .           .
                .           .           .
109         030050......................
                V
                V
111         030060
                .
                .
113             .       030509
                .           V
                .           V
118             .       030510
                .           .
                .           .
120             .           .       030510
                .           .           .
                .           .           .
126             .       030510............
                .           V
                .           V
  9             .       030520
                .           .
                .           .
 0              .           .       030520
                .           .           .
                .           .           .
137             .       030520............
                .           .
                .           .
139             .           .       030710
                .           .           V
                .           .           V
146             .           .       030720
                .           .           .
                .           .           .
148             .           .           .       030720
                .           .           .           .
                .           .           .           .
155             .           .       030720............
                .           .           V
                .           .           V
157             .           .       030520
                .           .           .
                .           .           .
159             .       030520............
                .           V
                .           V
161             .       030530
                .           .
                .           .
                .           .       030809
                .           .           V
                .           .           V
168             .           .       030810
                .           .           .
```

```
170          .          .          .      030810
             .          .          .           .
             .          .          .           .
 /           .          .     030810............
             .          .          V
             .          .          V
179          .          .     030820
             .          .          V
             .          .          V
181          .          .     030530
             .          .          .
             .          .          .
183          .          .          .      030530
             .          .          .           .
             .          .          .           .
190          .     030530........................
             .          V
             .          V
192          .     030540
             .          .
             .          .
194          .          .     030540
             .          .          .
             .          .          .
201          .     030540............
             .          .
             .          .
203          .          .     030550
             .          .          .
             .          .          .
 9           .     030550............
             .          V
             .          V
--1          .        AUTO
             .          V
             .          V
216          .     030580
             .          .
             .          .
218          .          .     030909
             .          .          V
             .          .          V
224          .          .     030910
             .          .          .
             .          .          .
226          .          .          .      030910
             .          .          .           .
             .          .          .           .
233          .          .     030910............
             .          .          V
             .          .          V
235          .          .     030920
             .          .          .
             .          .          .
237          .          .          .      031010
             .          .          .           V
             .          .          .           V
244          .          .          .      030920
             .          .          .           .
             .          .          .           .
             .          .     030920............
             .          .          V
             .          .          V
248          .          .     030930
             .          .          .
```

```
                .          .          .
250             .          .          .      030930
                .          .          .           .
                .          .          .           .
                .          .     030930............
                .          .          V
                .          .          V
258             .          .     030580
                .          .          .
                .          .          .
260             .     030580............
                .          V
                .          V
262             .     030590
                .          .
                .          .
264             .          .     030590
                .          .          .
                .          .          .
271             .     030590............
                .          V
                .          V
273             .        DBG
                .          V
                .          V
279             .     030610
                .          .
                .          .
281             .          .     030610
                .          .          .
                .          .          .
                .     030610............
                .          V
                .          V
                .     030620
                .          .
                .          .
292             .          .     030620
                .          .          .
                .          .          .
299             .     030620............
                .          V
                .          V
301             .     030630
                .          .
                .          .
303             .          .     030630
                .          .          .
                .          .          .
310             .     030630............
                .          V
                .          V
312             .     030640
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 03610e.HC1

```
*************************************
*                                   *
 LOOD HYDROGRAPH PACKAGE  (HEC-1)   *
            MAY   1991              *
*         VERSION 4.0.1E            *
*                                   *
*  RUN DATE  07/18/1997  TIME  08:18:14 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
```

```
*************************************************************************
STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
SCOTTSDALE - TEMPE - PHOENIX
*************************************************************************

Kimley-Horn and Associates, Inc.
KVL Consultants, Inc.

10-Year, 6-Hour Storm Event
1/97

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

   IT          HYDROGRAPH TIME DATA
                      NMIN           2  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      1    0  ENDING DATE
                    NDTIME        0958  ENDING TIME
                     ICENT          19  CENTURY MARK

               COMPUTATION INTERVAL    0.03 HOURS
                    TOTAL TIME BASE    9.97 HOURS

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

       *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


       *** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  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	030010	74.	3.17	6.	4.	4.	0.03		
ROUTED TO	030020	73.	3.20	6.	4.	4.	0.03		
HYDROGRAPH AT	030020	29.	3.13	3.	2.	2.	0.03		
2 COMBINED AT	030020	97.	3.17	9.	5.	5.	0.06		
ROUTED TO	030030	96.	3.20	9.	5.	5.	0.06		
HYDROGRAPH AT	030030	9.	3.13	1.	1.	1.	0.01		
HYDROGRAPH AT	030210	55.	3.17	5.	3.	3.	0.05		
ROUTED TO	030030	53.	3.17	5.	3.	3.	0.05		
3 COMBINED AT	030030	157.	3.20	15.	9.	9.	0.12		
ROUTED TO	030040	154.	3.27	15.	9.	9.	0.12		
HYDROGRAPH AT	030040	50.	3.17	6.	4.	4.	0.06		
2 COMBINED AT	030040	197.	3.23	21.	13.	13.	0.17		
ROUTED TO	030050	196.	3.27	21.	13.	13.	0.17		
HYDROGRAPH AT	030050	69.	3.13	5.	3.	3.	0.03		
HYDROGRAPH AT	030310	16.	3.17	1.	1.	1.	0.01		
ROUTED TO	030320	16.	3.27	1.	1.	1.	0.01		
HYDROGRAPH AT	030320	55.	3.20	6.	3.	3.	0.04		
2 COMBINED AT	030320	65.	3.23	7.	4.	4.	0.05		
ROUTED TO	030330	64.	3.27	7.	4.	4.	0.05		
HYDROGRAPH AT	030330	16.	3.17	1.	1.	1.	0.01		
HYDROGRAPH AT	030410	23.	3.13	2.	1.	1.	0.02		
ROUTED TO	030330	22.	3.13	2.	1.	1.	0.02		
3 COMBINED AT	030330	92.	3.23	11.	6.	6.	0.08		
ROUTED TO	030050	91.	3.30	11.	6.	6.	0.08		
3 COMBINED AT	030050	328.	3.27	37.	22.	22.	0.29		
ROUTED TO	030060	326.	3.27	37.	22.	22.	0.29		
HYDROGRAPH AT	030509	12.	3.33	1.	1.	1.	0.02		
ROUTED TO	030510	12.	3.47	1.	1.	1.	0.02		
HYDROGRAPH AT	030510	62.	3.13	8.	5.	5.	0.07		

2 COMBINED AT	030510	62.	3.13	9.	6.	6.	0.09		
ROUTED TO	030520	62.	3.17	9.	6.	6.	0.09		
HYDROGRAPH AT	030520	46.	3.10	4.	3.	3.	0.04		
2 COMBINED AT	030520	104.	3.13	14.	8.	8.	0.13		
HYDROGRAPH AT	030710	28.	3.10	2.	1.	1.	0.02		
ROUTED TO	030720	27.	3.13	2.	1.	1.	0.02		
HYDROGRAPH AT	030720	29.	3.13	3.	2.	2.	0.03		
2 COMBINED AT	030720	57.	3.13	5.	3.	3.	0.05		
ROUTED TO	030520	55.	3.17	5.	3.	3.	0.05		
2 COMBINED AT	030520	155.	3.17	19.	12.	12.	0.18		
ROUTED TO	030530	154.	3.17	19.	12.	12.	0.18		
HYDROGRAPH AT	030809	10.	3.33	1.	1.	1.	0.01		
ROUTED TO	030810	9.	3.47	1.	1.	1.	0.01		
HYDROGRAPH AT	030810	37.	3.57	6.	4.	4.	0.07		
2 COMBINED AT	030810	45.	3.57	7.	4.	4.	0.08		
ROUTED TO	030820	45.	3.57	7.	4.	4.	0.08		
ROUTED TO	030530	45.	3.60	7.	4.	4.	0.08		
HYDROGRAPH AT	030530	47.	3.13	5.	3.	3.	0.04		
3 COMBINED AT	030530	198.	3.17	31.	19.	19.	0.30		
ROUTED TO	030540	194.	3.20	31.	19.	19.	0.30		
HYDROGRAPH AT	030540	43.	3.13	5.	3.	3.	0.04		
2 COMBINED AT	030540	231.	3.20	36.	22.	22.	0.34		
HYDROGRAPH AT	030550	94.	3.13	7.	5.	5.	0.04		
2 COMBINED AT	030550	320.	3.17	44.	26.	26.	0.39		
ROUTED TO	AUTO	66.	4.10	42.	26.	26.	0.39	70.02	4.10
ROUTED TO	030580	66.	4.13	42.	26.	26.	0.39		
HYDROGRAPH AT	030909	26.	3.17	2.	1.	1.	0.02		
ROUTED TO	030910	25.	3.37	2.	1.	1.	0.02		
HYDROGRAPH AT	030910	31.	3.60	5.	3.	3.	0.06		
2 COMBINED AT	030910	45.	3.53	8.	5.	5.	0.08		
ROUTED TO	030920	45.	3.53	8.	5.	5.	0.08		
HYDROGRAPH AT	031010	50.	3.57	8.	5.	5.	0.08		
ROUTED TO	030920	50.	3.57	8.	5.	5.	0.08		

2 COMBINED AT	030920	94.	3.57	16.	9.	9.	0.16		
ROUTED TO	030930	94.	3.57	16.	9.	9.	0.16		
HYDROGRAPH AT	030930	12.	3.17	1.	1.	1.	0.01		
2 COMBINED AT	030930	100.	3.57	17.	10.	10.	0.18		
ROUTED TO	030580	99.	3.60	17.	10.	10.	0.18		
2 COMBINED AT	030580	158.	3.60	59.	36.	36.	0.56		
ROUTED TO	030590	158.	3.67	59.	36.	36.	0.56		
HYDROGRAPH AT	030590	97.	3.63	17.	10.	10.	0.21		
2 COMBINED AT	030590	254.	3.63	76.	46.	46.	0.77		
ROUTED TO	DBG	140.	4.23	75.	46.	46.	0.77	68.16	4.23
ROUTED TO	030610	140.	4.23	75.	46.	46.	0.77		
HYDROGRAPH AT	030610	31.	3.10	2.	1.	1.	0.02		
2 COMBINED AT	030610	141.	4.23	76.	48.	48.	0.79		
ROUTED TO	030620	141.	4.27	76.	48.	48.	0.79		
HYDROGRAPH AT	030620	41.	3.17	4.	3.	3.	0.04		
2 COMBINED AT	030620	145.	4.27	79.	50.	50.	0.83		
ROUTED TO	030630	145.	4.27	79.	50.	50.	0.83		
HYDROGRAPH AT	030630	76.	3.20	7.	4.	4.	0.04		
2 COMBINED AT	030630	150.	4.27	85.	54.	54.	0.87		
ROUTED TO	030640	150.	4.27	85.	54.	54.	0.87		

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
030010	MANE	1.55	74.95	190.86	1.66	2.00	74.12	190.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3030E+01 OUTFLOW=0.3015E+01 BASIN STORAGE=0.9083E-02 PERCENT ERROR= 0.2

030020	MANE	0.63	73.63	191.13	1.66	2.00	73.12	192.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3013E+01 EXCESS=0.0000E+00 OUTFLOW=0.3013E+01 BASIN STORAGE=0.1461E-02 PERCENT ERROR= 0.0

030020	MANE	1.11	28.84	187.63	0.99	2.00	28.68	188.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1436E+01 OUTFLOW=0.1423E+01 BASIN STORAGE=0.1024E-01 PERCENT ERROR= 0.2

030030	MANE	1.09	96.60	192.83	1.36	2.00	95.84	192.00	1.36

INUITY SUMMARY (AC-FT) - INFLOW=0.4434E+01 EXCESS=0.0000E+00 OUTFLOW=0.4426E+01 BASIN STORAGE=0.5460E-02 PERCENT ERROR= 0.1

030030	MANE	2.00	9.49	186.68	0.99	2.00	9.47	188.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5318E+00 OUTFLOW=0.5264E+00 BASIN STORAGE=0.3714E-02 PERCENT ERROR= 0.3

030210	MANE	2.00	54.85	189.36	1.11	2.00	54.56	190.00	1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2758E+01 OUTFLOW=0.2734E+01 BASIN STORAGE=0.1817E-01 PERCENT ERROR= 0.2

030030	MANE	0.34	54.39	190.70	1.11	2.00	53.30	190.00	1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2733E+01 EXCESS=0.0000E+00 OUTFLOW=0.2733E+01 BASIN STORAGE=0.1017E-02 PERCENT ERROR= 0.0

030040	MANE	1.69	155.81	195.46	1.23	2.00	153.95	196.00	1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7685E+01 EXCESS=0.0000E+00 OUTFLOW=0.7662E+01 BASIN STORAGE=0.1906E-01 PERCENT ERROR= 0.1

030040	MANE	1.90	50.50	189.97	0.99	2.00	50.50	190.00	0.99

INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2977E+01 OUTFLOW=0.2945E+01 BASIN STORAGE=0.2628E-01 PERCENT ERROR= 0.2

030050	MANE	0.86	196.60	196.07	1.15	2.00	196.30	196.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1062E+02 EXCESS=0.0000E+00 OUTFLOW=0.1060E+02 BASIN STORAGE=0.1524E-01 PERCENT ERROR= 0.0

030050	MANE	1.17	69.05	187.97	1.46	2.00	69.03	188.00	1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2661E+01 OUTFLOW=0.2651E+01 BASIN STORAGE=0.7570E-02 PERCENT ERROR= 0.1

030310	MANE	2.00	16.18	191.14	1.62	2.00	15.91	190.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6967E+00 OUTFLOW=0.6922E+00 BASIN STORAGE=0.2237E-02 PERCENT ERROR= 0.3

030320	MANE	1.92	15.86	196.09	1.61	2.00	15.76	196.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6917E+00 EXCESS=0.0000E+00 OUTFLOW=0.6887E+00 BASIN STORAGE=0.2895E-02 PERCENT ERROR= 0.0

030320	MANE	1.22	55.97	191.34	1.19	2.00	55.40	192.00	1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2817E+01 OUTFLOW=0.2791E+01 BASIN STORAGE=0.1644E-01 PERCENT ERROR= 0.3

030330	MANE	1.50	64.54	196.88	1.25	2.00	64.07	196.00	1.25

INUITY SUMMARY (AC-FT) - INFLOW=0.3479E+01 EXCESS=0.0000E+00 OUTFLOW=0.3464E+01 BASIN STORAGE=0.7899E-02 PERCENT ERROR= 0.2

030330	MANE	2.00	15.74	191.61	1.60	2.00	15.68	190.00	1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6859E+00 OUTFLOW=0.6814E+00 BASIN STORAGE=0.2145E-02 PERCENT ERROR= 0.3

030410	MANE	1.53	23.28	187.42	0.99	2.00	23.14	188.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1170E+01 OUTFLOW=0.1159E+01 BASIN STORAGE=0.8486E-02 PERCENT ERROR= 0.2

030330	MANE	0.49	22.93	188.91	0.99	2.00	22.46	188.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1160E+01 EXCESS=0.0000E+00 OUTFLOW=0.1160E+01 BASIN STORAGE=0.3717E-03 PERCENT ERROR= 0.0

030050	MANE	1.26	91.68	196.67	1.21	2.00	90.85	198.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5302E+01 EXCESS=0.0000E+00 OUTFLOW=0.5285E+01 BASIN STORAGE=0.1029E-01 PERCENT ERROR= 0.1

030060	MANE	0.20	327.61	196.32	1.20	2.00	326.18	196.00	1.20

INUITY SUMMARY (AC-FT) - INFLOW=0.1853E+02 EXCESS=0.0000E+00 OUTFLOW=0.1853E+02 BASIN STORAGE=0.4475E-02 PERCENT ERROR= 0.0

030509	MANE	2.00	12.47	201.15	0.87	2.00	12.39	200.00	0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7568E+00 OUTFLOW=0.7447E+00 BASIN STORAGE=0.6240E-02 PERCENT ERROR= 0.8

030510	MANE	2.00	12.24	207.55	0.87	2.00	12.24	208.00	0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7445E+00 EXCESS=0.0000E+00 OUTFLOW=0.7462E+00 BASIN STORAGE=0.4182E-02 PERCENT ERROR= -0.8

030510	MANE	1.45	62.82	187.32	1.07	2.00	61.99	188.00	1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4030E+01 OUTFLOW=0.3989E+01 BASIN STORAGE=0.2739E-01 PERCENT ERROR= 0.4

030520	MANE	1.04	61.82	189.92	1.03	2.00	61.69	190.00	1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4734E+01 EXCESS=0.0000E+00 OUTFLOW=0.4723E+01 BASIN STORAGE=0.7062E-02 PERCENT ERROR= 0.1

030520	MANE	1.04	47.16	186.38	1.02	2.00	46.43	186.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2239E+01 OUTFLOW=0.2222E+01 BASIN STORAGE=0.1490E-01 PERCENT ERROR= 0.1

030710	MANE	1.05	28.57	185.68	1.07	2.00	28.28	186.00	1.07

INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1202E+01 OUTFLOW=0.1195E+01 BASIN STORAGE=0.6406E-02 PERCENT ERROR= 0.1

030720	MANE	1.32	27.74	188.18	1.06	2.00	27.43	188.00	1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1195E+01 EXCESS=0.0000E+00 OUTFLOW=0.1192E+01 BASIN STORAGE=0.2013E-02 PERCENT ERROR= 0.0

030720	MANE	1.44	29.33	187.84	0.99	2.00	29.13	188.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1436E+01 OUTFLOW=0.1424E+01 BASIN STORAGE=0.1018E-01 PERCENT ERROR= 0.1

030520	MANE	0.90	55.40	189.49	1.02	2.00	55.32	190.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2615E+01 EXCESS=0.0000E+00 OUTFLOW=0.2613E+01 BASIN STORAGE=0.3383E-02 PERCENT ERROR= -0.1

030530	MANE	0.95	154.49	190.92	1.02	2.00	153.59	190.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9559E+01 EXCESS=0.0000E+00 OUTFLOW=0.9544E+01 BASIN STORAGE=0.1177E-01 PERCENT ERROR= 0.0

030809	MANE	1.50	9.60	199.49	0.87	2.00	9.54	200.00	0.87

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5676E+00 OUTFLOW=0.5590E+00 BASIN STORAGE=0.4588E-02 PERCENT ERROR= 0.7

030810	MANE	1.97	9.44	206.81	0.87	2.00	9.40	208.00	0.87

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5589E+00 EXCESS=0.0000E+00 OUTFLOW=0.5546E+00 BASIN STORAGE=0.3975E-02 PERCENT ERROR=   0.1

          030810  MANE        1.81     37.42    214.13      0.82      2.00     37.38    214.00        0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3231E+01 OUTFLOW=0.3152E+01 BASIN STORAGE=0.5908E-01 PERCENT ERROR=   0.6

          030820  MANE        0.17     45.29    213.94      0.83      2.00     45.29    214.00        0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3704E+01 EXCESS=0.0000E+00 OUTFLOW=0.3703E+01 BASIN STORAGE=0.7427E-03 PERCENT ERROR=   0.0

          030530  MANE        1.16     45.20    215.71      0.82      2.00     45.15    216.00        0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3703E+01 EXCESS=0.0000E+00 OUTFLOW=0.3696E+01 BASIN STORAGE=0.7441E-02 PERCENT ERROR=   0.0

          030530  MANE        1.38     47.32    187.71      1.06      2.00     47.10    188.00        1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2511E+01 OUTFLOW=0.2487E+01 BASIN STORAGE=0.1863E-01 PERCENT ERROR=   0.2

          030540  MANE        0.51    196.49    191.20      0.97      2.00    194.03    192.00        0.97

   INUITY SUMMARY (AC-FT) - INFLOW=0.1573E+02 EXCESS=0.0000E+00 OUTFLOW=0.1572E+02 BASIN STORAGE=0.1021E-01 PERCENT ERROR=   0.0

          030540  MANE        0.87     43.43    188.41      1.07      2.00     43.06    188.00        1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2365E+01 OUTFLOW=0.2341E+01 BASIN STORAGE=0.1674E-01 PERCENT ERROR=   0.3

          030550  MANE        1.44     94.11    188.38      1.62      2.00     93.56    188.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3731E+01 OUTFLOW=0.3714E+01 BASIN STORAGE=0.8865E-02 PERCENT ERROR=   0.2

          030580  MANE        0.66     65.62    247.81      1.03      2.00     65.62    248.00        1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2119E+02 EXCESS=0.0000E+00 OUTFLOW=0.2117E+02 BASIN STORAGE=0.2164E-01 PERCENT ERROR=   0.0

          030909  MANE        1.04     26.25    190.91      0.83      2.00     26.06    190.00        0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1033E+01 OUTFLOW=0.1024E+01 BASIN STORAGE=0.2535E-02 PERCENT ERROR=   0.6

          030910  MANE        1.74     25.76    200.87      0.92      2.00     25.28    202.00        0.92

   INUITY SUMMARY (AC-FT) - INFLOW=0.1023E+01 EXCESS=0.0000E+00 OUTFLOW=0.1129E+01 BASIN STORAGE=0.7919E-02 PERCENT ERROR= -11.1

          030910  MANE        2.00     30.94    215.56      0.87      2.00     30.87    216.00        0.87
```

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2724E+01 OUTFLOW=0.2649E+01 BASIN STORAGE=0.5696E-01 PERCENT ERROR= 0.7

030920	MANE	0.30	44.62	212.44	0.88	2.00	44.51	212.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3772E+01 EXCESS=0.0000E+00 OUTFLOW=0.3772E+01 BASIN STORAGE=0.4104E-03 PERCENT ERROR= 0.0

031010	MANE	1.95	50.23	214.62	0.93	2.00	50.10	214.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4169E+01 OUTFLOW=0.4053E+01 BASIN STORAGE=0.8562E-01 PERCENT ERROR= 0.7

030920	MANE	0.15	50.09	214.33	0.93	2.00	50.00	214.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4048E+01 EXCESS=0.0000E+00 OUTFLOW=0.4048E+01 BASIN STORAGE=0.3173E-03 PERCENT ERROR= 0.0

030930	MANE	0.22	94.43	214.35	0.91	2.00	94.32	214.00	0.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7821E+01 EXCESS=0.0000E+00 OUTFLOW=0.7821E+01 BASIN STORAGE=0.8473E-03 PERCENT ERROR= 0.0

030930	MANE	2.00	11.94	189.99	0.97	2.00	11.94	190.00	0.97

INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7369E+00 OUTFLOW=0.7271E+00 BASIN STORAGE=0.7064E-02 PERCENT ERROR= 0.4

030580	MANE	0.87	99.51	215.58	0.91	2.00	99.39	216.00	0.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8549E+01 EXCESS=0.0000E+00 OUTFLOW=0.8544E+01 BASIN STORAGE=0.7332E-02 PERCENT ERROR= 0.0

030590	MANE	1.90	158.06	220.48	0.98	2.00	157.90	220.00	0.98

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2970E+02 EXCESS=0.0000E+00 OUTFLOW=0.2955E+02 BASIN STORAGE=0.1138E+00 PERCENT ERROR= 0.1

030590	MANE	2.00	97.13	218.00	0.77	2.00	97.13	218.00	0.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8796E+01 OUTFLOW=0.8544E+01 BASIN STORAGE=0.1944E+00 PERCENT ERROR= 0.6

030610	MANE	0.39	139.70	254.71	0.92	2.00	139.57	254.00	0.92

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3804E+02 EXCESS=0.0000E+00 OUTFLOW=0.3803E+02 BASIN STORAGE=0.2067E-01 PERCENT ERROR= 0.0

030610	MANE	0.69	31.25	187.05	1.27	2.00	30.76	186.00	1.26

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1220E+01 OUTFLOW=0.1215E+01 BASIN STORAGE=0.4973E-02 PERCENT ERROR= 0.0

030620	MANE	0.76	141.26	255.62	0.93	2.00	141.23	256.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3923E+02 EXCESS=0.0000E+00 OUTFLOW=0.3920E+02 BASIN STORAGE=0.4367E-01 PERCENT ERROR= 0.0

030620	MANE	0.65	41.60	189.46	1.01	2.00	41.25	190.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2184E+01 OUTFLOW=0.2161E+01 BASIN STORAGE=0.1505E-01 PERCENT ERROR= 0.4

030630	MANE	0.85	145.21	256.81	0.93	2.00	145.12	256.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4135E+02 EXCESS=0.0000E+00 OUTFLOW=0.4130E+02 BASIN STORAGE=0.6577E-01 PERCENT ERROR= 0.0

030630	MANE	1.19	76.10	192.27	1.58	2.00	76.09	192.00	1.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3415E+01 OUTFLOW=0.3381E+01 BASIN STORAGE=0.1726E-01 PERCENT ERROR= 0.5

030640	MANE	0.28	150.28	256.51	0.96	2.00	150.16	256.00	0.96

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4466E+02 EXCESS=0.0000E+00 OUTFLOW=0.4464E+02 BASIN STORAGE=0.1722E-01 PERCENT ERROR= 0.0

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DBG
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	59.00	68.00	68.00
STORAGE	0.	7.	7.
OUTFLOW	0.	65.	65.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	68.16	0.16	9.	140.	2.70	4.23	0.00

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

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 04610e.HC1

```
****************************************
                                       *
    FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
              MAY   1991               *
*           VERSION 4.0.1E             *
*                                      *
*  RUN DATE  02/20/1997  TIME  10:47:44 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

```
::::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::::
:::                                    :::
:::  Full Microcomputer Implementation :::
:::                by                  :::
:::       Haestad Methods, Inc.        :::
:::                                    :::
::::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              *
              *
              *
  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    1/97
              *
              *
              *DIAGRAM
 11           IT       2                    300
 12           IO       5

 13           KK  040010   BASIN
 14           BA   0.038
 15           PH       0       0    0.50    0.97    1.61    1.76    1.86    2.05
 16           LS       0      79       0       0      98       0
 17           UK     148  0.0100    0.30      64
 18           UK      53  0.0100    0.10      36
 19           RK    1275  0.0072    0.02            TRAP      38     1.0
 20           RK     877  0.0072    0.02            TRAP      64     1.0

 21           KK  040020    FROM  040010
 22           RK    1136  0.0072   0.017            TRAP    37.5       1

 23           KK  040020   BASIN
 24           BA   0.041
 25           LS       0      79       0       0      98       0
 26           UK     150  0.0100    0.30      62
 27           UK      50  0.0100    0.10      38
 28           RK    1251  0.0004    0.03            TRAP      38     1.0

 29           KK  040020 COMBINE
 30           HC       2

 31           KK  040030    FROM  040020
 32           RK    1137  0.0072   0.017            TRAP    37.5       1

 33           KK  040030   BASIN
 34           BA   0.061
 35           LS       0      79       0       0      98       0
 36           UK     123  0.0100    0.32      53
 37           UK      81  0.0100    0.10      47
 38           RK    1760  0.0004    0.02            TRAP      41     1.0
```

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

 39           KK  040030 COMBINE
 40           HC       2

 41           KK  040040    FROM  040030
 42           RK    1636  0.0003   0.013            CIRC     1.0

 43           KK  040110   BASIN
 44           BA   0.054
 45           LS       0      79       0       0      98       0
 46           UK     146  0.0100    0.30      63
 47           UK      55  0.0100    0.10      37
 48           RK    1275  0.0004    0.02            TRAP      38     1.0
 49           RK    1266  0.0072    0.02            TRAP      38     1.0

 50           KK  040120    FROM  040110
 51           RK     351  0.0069   0.013            CIRC     3.0
              * Increased width on first RK card from 38 to 40

 52           KK  040120   BASIN
 53           BA   0.112
 54           LS       0      79       0       0      98       0
 55           UK     160   0.010    0.30      57
 56           UK      75   0.010    0.10      43
 57           RK    1600   0.001    0.02            TRAP      40     1.0
 58           RK    2356   0.007    0.02            TRAP      60     1.0

 59           KK  040120 COMBINE
 60           HC       2

 61           KK  040130    FROM  040120
 62           RK     730  0.0086   0.013            CIRC     3.0

 63           KK  040130   BASIN
 64           BA   0.023
 65           LS       0      79       0       0      98       0
 66           UK     122  0.0100    0.32      52
 67           UK      82  0.0100    0.10      48
 68           RK     642  0.0072    0.02            TRAP      41     1.0

 69           KK  040130 COMBINE
 70           HC       2

 71           KK  040040    FROM  040130
 72           RK     625  0.0038   0.013            CIRC     3.5

 73           KK  040210   BASIN
 74           BA   0.011
 75           LS       0      79       0       0      98       0
 76           UK      97  0.0100    0.34      45
 77           UK     111  0.0100    0.10      55
 78           RK     696  0.0072    0.02            TRAP       6     1.0
              * Storage removed as insignificant
              * Width decreased from 97.5 to 80
```

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

  79          KK  040040    FROM  040210
  80          RK     990  0.0004   0.017            TRAP      80       1
              * Width decreased from 98 to 50
              * Slope changed from .0004 to .004

  81          KK  040040   BASIN
  82          BA   0.044
  83          LS       0      79       0       0      98       0
  84          UK      22   0.010    0.40      16
  85          UK     197   0.010    0.10      84
  86          RK    2600   0.004    0.02            TRAP      50       1

  87          KK  040040 COMBINE
  88          HC       4

  89          KK  040050    FROM  040040
  90          RK    1869   0.006   0.013            CIRC     3.5

  91          KK  040310   BASIN
  92          BA   0.062
  93          LS       0      79       0       0      98       0
  94          UK     125   0.010    0.32      52
  95          UK      87   0.010    0.10      48
  96          RK    1761  0.0072    0.02            TRAP      38       1
              * Changed slope from .0004 to .004

  97          KK  040050    FROM  040310
  98          RK    1912   0.004   0.017            TRAP      45       1

  99          KK  040050   BASIN
 100          BA   0.113
 101          LS       0      79       0       0      98       0
 102          UK     158   0.010    0.30      49
 103          UK      99   0.010    0.10      51
 104          RK    1202  0.0004    0.02            TRAP      45     1.0
 105          RK    1869  0.0072    0.02            TRAP      60     1.0

 106          KK  040050 COMBINE
 107          HC       3

 108          KK  040060    FROM  040050
 109          RK     633  0.0033   0.013            CIRC     4.0

 110          KK  040060   BASIN
 111          BA   0.022
 112          LS       0      79       0       0      98       0
 113          UK     206  0.0100    0.29      22
 114          UK     190  0.0100    0.10      78
 115          RK     633  0.0072    0.02            TRAP      60     1.0
```

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


 116          KK  040060 COMBINE
 117          HC       2

 118          KK  040070    FROM  040060
 119          RK     619  0.0033   0.013            CIRC     4.0

 120          KK  040410   BASIN
 121          BA   0.056
 122          LS       0      79       0       0      98       0
 123          UK     164  0.0100    0.30      51
 124          UK      89  0.0100    0.10      49
 125          RK    1125  0.0072    0.02            TRAP      41     1.0
 126          RK    1544  0.0004    0.02            TRAP      60     1.0

 127          KK  040420    FROM  040410
 128          RK     359  0.0065   0.013            CIRC     1.3
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
 129          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

          (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

 13       040010
               V
               V
 21       040020
               .
               .
 23            .      040020
               .           .
               .           .
 29       040020............
               V
               V
 31       040030
               .
               .
 33            .      040030
               .           .
               .           .
 39       040030............
               V
               V
 41       040040
               .
               .
 43            .      040110
               .           V
               .           V
 50            .      040120
               .           .
               .           .
 52            .           .      040120
               .           .           .
               .           .           .
 59            .      040120............
               .           V
               .           V
 61            .      040130
               .           .
               .           .
 63            .           .      040130
               .           .           .
               .           .           .
 69            .      040130............
               .           V
               .           V
 71            .      040040
               .           .
               .           .
 73            .           .      040210
               .           .           V
               .           .           V
 79            .           .      040040
               .           .           .
               .           .           .
               .           .           .      040040
               .           .           .           .
               .           .           .           .
 87       040040.................................
               V
```

```
                V
 89       040050
                .
                .
  1             .       040310
                .            V
                .            V
 97             .       040050
                .            .
                .            .
 99             .            .       040050
                .            .            .
                .            .            .
106       040050.......................
                V
                V
108       040060
                .
                .
110             .       040060
                .            .
                .            .
116       040060............
                V
                V
118       040070
                .
                .
120             .       040410
                .            V
                .            V
127             .       040420
```

RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 04610e.HC1

```
****************************************
*                                      *
*    LOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991              *
*           VERSION 4.0.1E             *
*                                      *
*  RUN DATE  02/20/1997  TIME  10:47:44 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
*****************************************************************************
STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
SCOTTSDALE - TEMPE - PHOENIX
*****************************************************************************

Kimley-Horn and Associates, Inc.
KVL Consultants, Inc.

10-Year, 6-Hour Storm Event
1/97

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

   IT          HYDROGRAPH TIME DATA
                      NMIN           2  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      1    0  ENDING DATE
                    NDTIME        0958  ENDING TIME
                     ICENT          19  CENTURY MARK

               COMPUTATION INTERVAL    0.03 HOURS
                    TOTAL TIME BASE    9.97 HOURS

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

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	040010	41.	3.13	4.	2.	2.	0.04		
ROUTED TO	040020	40.	3.17	4.	2.	2.	0.04		
HYDROGRAPH AT	040020	32.	3.23	4.	3.	3.	0.04		
2 COMBINED AT	040020	70.	3.20	9.	5.	5.	0.08		
ROUTED TO	040030	69.	3.23	8.	5.	5.	0.08		
HYDROGRAPH AT	040030	61.	3.20	7.	4.	4.	0.06		
2 COMBINED AT	040030	130.	3.23	16.	10.	10.	0.14		
ROUTED TO	040040	129.	3.33	16.	10.	10.	0.14		
HYDROGRAPH AT	040110	47.	3.20	6.	4.	4.	0.05		
ROUTED TO	040120	47.	3.20	6.	4.	4.	0.05		
HYDROGRAPH AT	040120	117.	3.20	13.	8.	8.	0.11		
2 COMBINED AT	040120	163.	3.20	19.	11.	11.	0.17		
ROUTED TO	040130	161.	3.20	19.	11.	11.	0.17		
HYDROGRAPH AT	040130	36.	3.07	3.	2.	2.	0.02		
2 COMBINED AT	040130	180.	3.20	22.	13.	13.	0.19		
ROUTED TO	040040	177.	3.23	22.	13.	13.	0.19		
HYDROGRAPH AT	040210	19.	3.10	1.	1.	1.	0.01		
ROUTED TO	040040	18.	3.27	2.	1.	1.	0.01		
HYDROGRAPH AT	040040	84.	3.20	8.	5.	5.	0.04		
4 COMBINED AT	040040	374.	3.27	47.	28.	28.	0.38		
ROUTED TO	040050	370.	3.30	47.	28.	28.	0.38		
HYDROGRAPH AT	040310	91.	3.10	8.	5.	5.	0.06		
ROUTED TO	040050	89.	3.17	8.	5.	5.	0.06		
HYDROGRAPH AT	040050	142.	3.20	14.	9.	9.	0.11		
3 COMBINED AT	040050	542.	3.27	69.	42.	42.	0.56		
ROUTED TO	040060	541.	3.27	69.	42.	42.	0.56		
HYDROGRAPH AT	040060	47.	3.10	4.	2.	2.	0.02		
2 COMBINED AT	040060	565.	3.27	72.	44.	44.	0.58		
ROUTED TO	040070	563.	3.27	72.	44.	44.	0.58		

HYDROGRAPH AT	040410	55.	3.27	7.	4.	4.	0.06
ROUTED TO	040420	55.	3.27	7.	4.	4.	0.06

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
040010	MANE	1.10	41.54	187.70	1.00	2.00	41.36	188.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2046E+01 OUTFLOW=0.2028E+01 BASIN STORAGE=0.1497E-01 PERCENT ERROR= 0.2

040020	MANE	1.22	40.25	189.84	1.00	2.00	40.25	190.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2028E+01 EXCESS=0.0000E+00 OUTFLOW=0.2022E+01 BASIN STORAGE=0.3363E-02 PERCENT ERROR= 0.1

040020	MANE	2.00	32.08	194.53	1.02	2.00	31.96	194.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2263E+01 OUTFLOW=0.2235E+01 BASIN STORAGE=0.2110E-01 PERCENT ERROR= 0.3

040030	MANE	1.02	69.99	193.51	1.01	2.00	69.48	194.00	1.01

ONTINUITY SUMMARY (AC-FT) - INFLOW=0.4255E+01 EXCESS=0.0000E+00 OUTFLOW=0.4245E+01 BASIN STORAGE=0.6331E-02 PERCENT ERROR= 0.1

040030	MANE	2.00	61.01	191.76	1.14	2.00	61.00	192.00	1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3740E+01 OUTFLOW=0.3702E+01 BASIN STORAGE=0.2579E-01 PERCENT ERROR= 0.3

040040	MANE	2.00	129.97	199.82	1.06	2.00	129.41	200.00	1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7941E+01 EXCESS=0.0000E+00 OUTFLOW=0.7936E+01 BASIN STORAGE=0.9779E-02 PERCENT ERROR= -0.1

040110	MANE	1.30	47.28	193.13	1.01	2.00	47.27	192.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2944E+01 OUTFLOW=0.2904E+01 BASIN STORAGE=0.2837E-01 PERCENT ERROR= 0.4

040120	MANE	0.20	47.19	192.48	1.01	2.00	46.76	192.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2905E+01 EXCESS=0.0000E+00 OUTFLOW=0.2905E+01 BASIN STORAGE=0.1879E-03 PERCENT ERROR= 0.0

040120	MANE	2.00	116.78	191.92	1.08	2.00	116.62	192.00	1.08

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6561E+01 OUTFLOW=0.6478E+01 BASIN STORAGE=0.5784E-01 PERCENT ERROR= 0.4

040130	MANE	0.33	162.88	192.60	1.06	2.00	160.50	192.00	1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9387E+01 EXCESS=0.0000E+00 OUTFLOW=0.9386E+01 BASIN STORAGE=0.8855E-03 PERCENT ERROR= 0.0

040130	MANE	0.81	37.05	184.90	1.16	2.00	36.42	184.00	1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1426E+01 OUTFLOW=0.1420E+01 BASIN STORAGE=0.4748E-02 PERCENT ERROR= 0.1

040040	MANE	0.38	179.01	192.61	1.07	2.00	177.12	194.00	1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1081E+02 EXCESS=0.0000E+00 OUTFLOW=0.1081E+02 BASIN STORAGE=0.1095E-02 PERCENT ERROR= 0.0

040210	MANE	0.69	19.17	185.03	1.25	2.00	18.80	186.00	1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7342E+00 OUTFLOW=0.7316E+00 BASIN STORAGE=0.1628E-02 PERCENT ERROR= 0.1

040040	MANE	2.00	18.65	196.62	1.31	2.00	18.30	196.00	1.30

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7312E+00 EXCESS=0.0000E+00 OUTFLOW=0.7659E+00 BASIN STORAGE=0.6587E-02 PERCENT ERROR= -5.6

040040	MANE	2.00	84.08	192.06	1.61	2.00	84.01	192.00	1.61

NTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3802E+01 OUTFLOW=0.3773E+01 BASIN STORAGE=0.1358E-01 PERCENT ERROR= 0.4

040050	MANE	0.61	372.36	197.55	1.14	2.00	369.61	198.00	1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2329E+02 EXCESS=0.0000E+00 OUTFLOW=0.2329E+02 BASIN STORAGE=0.5176E-02 PERCENT ERROR= 0.0

040310	MANE	1.34	91.73	186.38	1.16	2.00	90.71	186.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3843E+01 OUTFLOW=0.3821E+01 BASIN STORAGE=0.1603E-01 PERCENT ERROR= 0.2

040050	MANE	1.91	89.63	190.16	1.15	2.00	88.84	190.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3818E+01 EXCESS=0.0000E+00 OUTFLOW=0.3813E+01 BASIN STORAGE=0.9125E-02 PERCENT ERROR= -0.1

040050	MANE	1.51	143.60	191.32	1.19	2.00	141.72	192.00	1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7233E+01 OUTFLOW=0.7155E+01 BASIN STORAGE=0.5268E-01 PERCENT ERROR= 0.4

040060	MANE	0.32	541.44	196.24	1.15	2.00	540.88	196.00	1.15

NUITY SUMMARY (AC-FT) - INFLOW=0.3426E+02 EXCESS=0.0000E+00 OUTFLOW=0.3426E+02 BASIN STORAGE=0.2878E-02 PERCENT ERROR= 0.0

040060	MANE	0.79	47.01	186.66	1.54	2.00	46.71	186.00	1.54

```
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1812E+01 OUTFLOW=0.1804E+01 BASIN STORAGE=0.5868E-02 PERCENT ERROR=   0.1

          040070  MANE        0.37    563.68    196.14      1.16      2.00    563.43    196.00        1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3607E+02 EXCESS=0.0000E+00 OUTFLOW=0.3606E+02 BASIN STORAGE=0.2880E-02 PERCENT ERROR=   0.0

          040410  MANE        2.00     55.51    196.67      1.16      2.00     55.23    196.00        1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3509E+01 OUTFLOW=0.3462E+01 BASIN STORAGE=0.3786E-01 PERCENT ERROR=   0.3

          040420  MANE        0.36     55.08    196.37      1.16      2.00     54.91    196.00        1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3463E+01 EXCESS=0.0000E+00 OUTFLOW=0.3462E+01 BASIN STORAGE=0.2715E-03 PERCENT ERROR=   0.0


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

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 05610E.HC1

```
****************************************
                                       *
    LOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY   1991              *
*           VERSION 4.0.1E             *
*                                      *
* RUN DATE  02/18/1997  TIME  09:14:28 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

```
::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
:::                                  :::
:::  Full Microcomputer Implementation :::
:::                by                :::
:::       Haestad Methods, Inc.      :::
:::                                  :::
::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              *
              *
              *
  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    1/97
              *
              *DIAGRAM
 11           IT       2                    300
 12           IO       5
              *
              * Add basin 050005, part of basin 030510 in KVL model
              *

 13           KK  050005   BASIN
 14           BA   0.038
 15           PH    0.00     0.00     0.50     0.97     1.61     1.76     1.86     2.05
 16           LS       0       85        0        0       98        0
 17           UK     300    0.010     0.20       99
 18           UK     100    0.010     0.10        1
 19           RK    1650     0.09     0.03             TRAP       30      1.0

 20           KK  050010   FROM 050005
 21           RK    1300    0.015     0.02             TRAP       35        1

 22           KK  050010   BASIN
 23           BA   0.066
 24           LS       0       81        0        0       98        0
 25           UK     144   0.0100     0.30       52
 26           UK      57   0.0100     0.10       48
 27           RK    1189   0.0033     0.02             TRAP       30      1.0
 28           RK    1197   0.0038     0.02             TRAP       60      1.0

 29           KK  050010   COMBINE
 30           HC       2

 31           KK  050020    FROM  050010
 32           RK    1370   0.0038    0.017             TRAP     37.5        1

 33           KK  050210   BASIN
 34           BA   0.054
 35           LS       0       79        0        0       98        0
 36           UK     200   0.0100     0.30       28
 37           UK     200   0.0100     0.10       72
 38           RK     564   0.0038     0.02             TRAP       23      1.0
 39           RK    1199   0.0033     0.02             TRAP       23      1.0
```

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

  40          KK  050210 STORAGE
  41          RS       1    STOR
  42          SV    0.00    7.72    7.72
  43          SE    0.00    1.00    2.00
  44          SQ    0.00    0.01    0.01
  45          ST     1.0     500     3.0     1.5

  46          KK  050020    FROM  050210
  47          RK     278  0.0033   0.017            TRAP    60.0       1

  48          KK  050020   BASIN
  49          BA   0.009
  50          LS       0      79       0       0      98       0
  51          UK     166  0.0100    0.30      39
  52          UK      98  0.0100    0.10      61
  53          RK    1304  0.0038    0.02            TRAP      60     1.0

  54          KK  050020 COMBINE
  55          HC       3

  56          KK  050030    FROM  050020
  57          RK     347  0.0038   0.017            TRAP    37.5       1

  58          KK  050030   BASIN
  59          BA   0.020
  60          LS       0      79       0       0      98       0
  61          UK     150  0.0100    0.30      15
  62          UK      50  0.0100    0.10      85
  63          RK     278  0.0038    0.02            TRAP       9     1.0
  64          RK    1468  0.0033    0.02            TRAP       9     1.0
              * Flows combined, then into storage

  65          KK  050030 COMBINE
  66          HC       2

  67          KK  050030 STORAGE
  68          RS       1    STOR
  69          SV       0    0.01    0.06    0.62    2.72    2.72
  70          SE      65      66      67      68      69      70
  71          SQ    0.00    0.01    0.01    0.01    0.01    0.01
  72          ST      68     150     3.0     1.5

  73          KK  050040    FROM  050030
  74          RK    2206  0.0038   0.017            TRAP    37.5       1

  75          KK  050040   BASIN
  76          BA   0.123
  77          LS       0      79       0       0      98       0
  78          UK     150  0.0100    0.30      57
  79          UK      50  0.0100    0.10      43
  80          RK    2230  0.0038    0.02            TRAP      38     1.0
  81          RK    2654  0.0038    0.02            TRAP      38     1.0
```

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

 82           KK  050040 COMBINE
 83           HC       2

 84           KK  050050    FROM  050040
 85           RK     491  0.0334   0.013            CIRC     2.5

 86           KK  050310   BASIN
 87           BA   0.041
 88           LS       0      79       0       0      98       0
 89           UK     200  0.0100    0.30      28
 90           UK     200  0.0100    0.10      72
 91           RK     816  0.0033    0.02            TRAP      30     1.0
 92           RK     848  0.0038    0.02            TRAP      30     1.0
              *  New basin, revised per redelineation of basin 60

 93           KK  050065   BASIN
 94           BA   0.020
 95           LS       0      79       0       0      98       0
 96           UK     100    0.01     0.3      15
 97           UK     100    0.01     0.1      85
 98           RK    1400   0.005   0.012            TRAP      60       1
              * Flows combined from canal crossing, 310 and 65 into low area by 64th Street

 99           KK  050050 COMBINE
100           HC       3

101           KK  050065  Storage (low area near concentration pt 50)
102           RS       1    STOR
103           SV       0    0.27    0.63    1.43    3.40    3.40
104           SE      54      55      56      57      58      59
105           SQ       0     .01     .01     .01     .01     .01
106           ST    57.5     100       3     1.5
              * Overflows east to basin 60 at conc pt 50

107           KK  050060    FROM  050050
108           RK    1465  0.0033   0.027            TRAP       5       1

109           KK  050060   BASIN
110           BA   0.029
111           LS       0      79       0       0      98       0
112           UK     105    0.01     0.3      20
113           UK     160    0.01     0.1      80
114           RK    1300  0.0038    0.03            TRAP     100     1.0
              *

115           KK  050060 COMBINE
116           HC       2

117           KK  050070    FROM  050060
118           RK    1429  0.0033   0.030            TRAP     5.0     1.0
```

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

 119          KK  050410   BASIN
 120          BA   0.041
 121          LS       0      79       0       0      98       0
 122          UK      77  0.0100    0.36      25
 123          UK     137  0.0100    0.10      75
 124          RK     694  0.0038    0.02            TRAP      38     1.0
 125          RK    1177  0.0033    0.02            TRAP      38     1.0

 126          KK  050070    FROM  050410
 127          RK     187  0.0038   0.017            TRAP    60.0       1

 128          KK  050070   BASIN
 129          BA   0.084
 130          LS       0      79       0       0      98       0
 131          UK      22  0.0100    0.40       8
 132          UK     198  0.0100    0.10      92
 133          RK    3223  0.0038    0.02            TRAP      38     1.0

 134          KK  050070 COMBINE
 135          HC       3

 136          KK  050080    FROM  050070
 137          RK    1112  0.0027   0.013            CIRC     4.5

 138          KK  050080   BASIN
 139          BA   0.021
 140          LS       0      79       0       0      98       0
 141          UK     132  0.0100    0.31      60
 142          UK      71  0.0100    0.10      40
 143          RK    1365  0.0033    0.02            TRAP      38     1.0

 144          KK  050080 COMBINE
 145          HC       2

 146          KK  050090    FROM  050080
 147          RK     416  0.0052   0.013            CIRC     4.0

 148          KK  050510   BASIN
 149          BA   0.054
 150          LS       0      79       0       0      98       0
 151          UK     109  0.0100    0.33      48
 152          UK      97  0.0100    0.10      52
 153          RK    1096  0.0038    0.02            TRAP      41     1.0
 154          RK    1304  0.0033    0.02            TRAP      41     1.0

 155          KK  050090    FROM  050510
 156          RK     626  0.0052   0.013            CIRC     4.0

 157          KK  050090   BASIN
 158          BA   0.037
 159          LS       0      79       0       0      98       0
 160          UK      44  0.0100    0.38      23
 161          UK     172  0.0100    0.10      77
 162          RK     965  0.0038    0.02            TRAP      23     1.0
```

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

 163          RK    1064  0.0033    0.02            TRAP      45     1.0

 164          KK  050090 COMBINE
 165          HC       3

 166          KK  050100    FROM  050090
 167          RK     609  0.0028   0.013            CIRC     4.5

 168          KK  050100   BASIN
 169          BA   0.045
 170          LS       0      79       0       0      98       0
 171          UK      20  0.0100    0.40       7
 172          UK     200  0.0100    0.10      93
 173          RK     505  0.0033    0.02            TRAP      30     1.0
 174          RK    1727  0.0038    0.02            TRAP      23     1.0

 175          KK  050100 COMBINE
 176          HC       2

 177          KK  050110    FROM  050100
 178          RK     692  0.0058   0.013            CIRC     4.0

 179          KK  050110   BASIN
 180          BA   0.010
 181          LS       0      79       0       0      98       0
 182          UK      20  0.0100    0.40      15
 183          UK     200  0.0100    0.10      85
 184          RK     587  0.0033    0.02            TRAP      46     1.0
 185          RK     406  0.0038    0.02            TRAP      77     1.0

 186          KK  050110 COMBINE
 187          HC       2
              * Basin area increased to account for basin redelineations

 188          KK  050610   BASIN
 189          BA   0.081
 190          LS       0      79       0       0      98       0
 191          UK     130  0.0100    0.32      56
 192          UK      70  0.0100    0.10      44
 193          RK    1450  0.0038    0.02            TRAP      45     1.0
 194          RK    1240  0.0033    0.02            TRAP      60     1.0

 195          KK  050620    FROM  050610
 196          RK    1052  0.0033   0.017            TRAP    60.0       1

 197          KK  050620   BASIN
 198          BA   0.099
 199          LS       0      79       0       0      98       0
 200          UK     147  0.0100    0.30      56
 201          UK      53  0.0100    0.10      44
 202          RK     940  0.0033    0.02            TRAP      41     1.0
 203          RK    2545  0.0038    0.02            TRAP      60     1.0
```

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

 204          KK  050620 COMBINE
 205          HC       2

 206          KK  050630    FROM  050620
 207          RK    1412  0.0033   0.017            TRAP    60.0       1

 208          KK  050630   BASIN
 209          BA   0.062
 210          LS       0      79       0       0      98       0
 211          UK     138  0.0100    0.31      33
 212          UK      64  0.0100    0.10      67
 213          RK    1205  0.0038    0.02            TRAP      41     1.0
 214          RK    1348  0.0033    0.02            TRAP      60     1.0

 215          KK  050630 COMBINE
 216          HC       2

 217          KK  050640    FROM  050630
 218          RK    1250  0.0033   0.017            TRAP    60.0       1

 219          KK  050640   BASIN
 220          BA   0.032
 221          LS       0      79       0       0      98       0
 222          UK      64  0.0100    0.37      15
 223          UK     149  0.0100    0.10      85
 224          RK    1605  0.0038    0.02            TRAP      41     1.0
 225          RK    1168  0.0033    0.02            TRAP      60     1.0

 226          KK  050640 COMBINE
 227          HC       2

 228          KK  050710   BASIN
 229          BA   0.005
 230          LS       0      79       0       0      98       0
 231          UK      21  0.0100    0.40      15
 232          UK     200  0.0100    0.10      85
 233          RK     610  0.0038    0.02            TRAP      55     1.0

 234          KK  050720    FROM  050710
 235          RK     316  0.0045   0.013            CIRC     5.5

 236          KK  050720   BASIN
 237          BA   0.028
 238          LS       0      79       0       0      98       0
 239          UK      57  0.0100    0.38      17
 240          UK     188  0.0100    0.10      83
 241          RK     580  0.0038    0.02            TRAP      45     1.0
 242          RK    1594  0.0033    0.02            TRAP      55     1.0
```

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

 243          KK  050720 COMBINE
 244          HC       2

 245          KK  050640    FROM  050720
 246          RK     422  0.0045   0.013            CIRC     5.5

 247          KK  050640 COMBINE
 248          HC       2

 249          KK  050810   BASIN
 250          BA   0.013
 251          LS       0      79       0       0      98       0
 252          UK      88  0.0100    0.36      20
 253          UK     200  0.0100    0.10      80
 254          RK     164  0.0033    0.02            TRAP      28     1.0
 255          RK    1031  0.0038    0.02            TRAP      55     1.0

 256          KK  050640    FROM  050810
 257          RK     705  0.0025   0.013            CIRC     4.0

 258          KK  050640 COMBINE
 259          HC       2

 260          KK  050650    FROM  050640
 261          RK     620  0.0036   0.013            CIRC     7.0

 262          KK  050650   BASIN
 263          BA   0.019
 264          LS       0      79       0       0      98       0
 265          UK      29  0.0100    0.40      16
 266          UK     200  0.0100    0.10      84
 267          RK     598  0.0033    0.02            TRAP      23     1.0
 268          RK     566  0.0038    0.02            TRAP      90     1.0

 269          KK  050650 COMBINE
 270          HC       2

 271          KK  050910   BASIN
 272          BA   0.012
 273          LS       0      79       0       0      98       0
 274          UK     170  0.0100    0.32      26
 275          UK     200  0.0100    0.10      74
 276          RK     837  0.0038    0.02            TRAP      38     1.0

 277          KK  050650    FROM  050910
 278          RK     751  0.0045   0.013            DEEP     5.0

 279          KK  050650 COMBINE
 280          HC       2
```

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

 281          KK  050660    FROM  050650
 282          RK     648  0.0027   0.013            CIRC     7.5

 283          KK  050660   BASIN
 284          BA   0.018
 285          LS       0      79       0       0      98       0
 286          UK      20  0.0100    0.40      15
 287          UK     200  0.0100    0.10      85
 288          RK     578  0.0033    0.02            TRAP      49     1.0
 289          RK     582  0.0038    0.02            TRAP      90     1.0

 290          KK  050660 COMBINE
 291          HC       2

 292          KK  050110    FROM  050660
 293          RK     458  0.0027   0.013            CIRC     7.5

 294          KK  050110 COMBINE
 295          HC       2

 296          KK  050120    FROM  050110
 297          RK     888  0.0027   0.013            CIRC     7.5

 298          KK  050120   BASIN
 299          BA   0.039
 300          LS       0      79       0       0      98       0
 301          UK      24  0.0100    0.40      14
 302          UK     195  0.0100    0.10      86
 303          RK     763  0.0038    0.02            TRAP      23     1.0
 304          RK    1114  0.0033    0.02            TRAP      90     1.0

 305          KK  050120 COMBINE
 306          HC       2

 307          KK  051010   BASIN
 308          BA   0.023
 309          LS       0      79       0       0      98       0
 310          UK     200  0.0100    0.30      28
 311          UK     200  0.0100    0.10      72
 312          RK     517  0.0033    0.02            TRAP      30     1.0
 313          RK     822  0.0038    0.02            TRAP      30     1.0

 314          KK  051010 STORAGE
 315          RS       1    STOR
 316          SV       0    0.20    0.70    1.49    1.49
 317          SE      58      59      60      61      62
 318          SQ       0    0.01    0.01    0.01    0.01
 319          ST      61     800     3.0     1.5
```

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

 320          KK  051020    FROM  051010
 321          RK     948  0.0033   0.017            TRAP    60.0       1

 322          KK  051110   BASIN
 323          BA   0.025
 324          LS       0      79       0       0      98       0
 325          UK      20  0.0100    0.40      10
 326          UK     200  0.0100    0.10      90
 327          RK     326  0.0038    0.02            TRAP       9     1.0
 328          RK    1382  0.0033    0.02            TRAP      19     1.0
              *
              * Removed KVL storage as insignificant (< 1 acre-ft)
              *

 329          KK  051020    FROM  051110
 330          RK     541  0.0038   0.017            TRAP    33.0       1

 331          KK  051020   BASIN
 332          BA   0.027
 333          LS       0      79       0       0      98       0
 334          UK      64  0.0100    0.37      22
 335          UK     174  0.0100    0.10      78
 336          RK     409  0.0038    0.02            TRAP      26     1.0
 337          RK    1595  0.0033    0.02            TRAP      60     1.0

 338          KK  051020 COMBINE
 339          HC       3

 340          KK  051030    FROM  051020
 341          RK     694  0.0033   0.017            TRAP    60.0       1

 342          KK  051030   BASIN
 343          BA   0.031
 344          LS       0      79       0       0      98       0
 345          UK      28  0.0100    0.39      13
 346          UK     190  0.0100    0.10      87
 347          RK    2532  0.0033    0.02            TRAP      49     1.0

 348          KK  051030 COMBINE
 349          HC       2

 350          KK  051210   BASIN
 351          BA   0.008
 352          LS       0      79       0       0      98       0
 353          UK      20  0.0100    0.40      15
 354          UK     200  0.0100    0.10      85
 355          RK     682  0.0038    0.02            TRAP       9     1.0

 356          KK  051030    FROM  051210
 357          RK     241  0.0038   0.017            TRAP    60.0       1
```

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

 358          KK  051030 COMBINE
 359          HC       2

 360          KK  051310   BASIN
 361          BA   0.003
 362          LS       0      79       0       0      98       0
 363          UK      20  0.0100    0.40       6
 364          UK     200  0.0100    0.10      94
 365          RK     544  0.0033    0.02            TRAP      18     1.0
              *
              * Removed KVL storage as insignificant (< 1 acre-ft); topo shows no storage in
              * this basin
              *

 366          KK  051320    FROM  051310
 367          RK     333  0.0038   0.017            TRAP    60.0       1

 368          KK  051320   BASIN
 369          BA   0.009
 370          LS       0      79       0       0      98       0
 371          UK      20  0.0100    0.40       7
 372          UK     200  0.0100    0.10      93
 373          RK     254  0.0038    0.02            TRAP       9     1.0
 374          RK     543  0.0033    0.02            TRAP      18     1.0
              *
              * Removed KVL storage as insignificant (1 acre-ft); topo shows no storage in
              * this basin
              *

 375          KK  051320 COMBINE
 376          HC       2

 377          KK  051030    FROM  051320
 378          RK     960  0.0038   0.017            TRAP    60.0       1

 379          KK  051030 COMBINE
 380          HC       2

 381          KK  051040    FROM  051030
 382          RK    1501  0.0033   0.017            TRAP    60.0       1

 383          KK  051040   BASIN
 384          BA   0.036
 385          LS       0      79       0       0      98       0
 386          UK     105  0.0100    0.34      39
 387          UK     102  0.0100    0.10      61
 388          RK    1159  0.0038    0.02            TRAP      45     1.0
 389          RK    1501  0.0033    0.02            TRAP      65     1.0
```

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

 390          KK  051040 COMBINE
 391          HC       2

 392          KK  050120    FROM  051040
 393          RK    1222  0.0033   0.017            TRAP    90.0       1

 394          KK  050120 COMBINE
 395          HC       2

 396          KK  050130    FROM  050120
 397          RK    1265  0.0027   0.013            DEEP     7.0

 398          KK  050130   BASIN
 399          BA   0.096
 400          LS       0      79       0       0      98       0
 401          UK      45  0.0100    0.38      15
 402          UK     171  0.0100    0.10      85
 403          RK    1905  0.0038    0.02            TRAP      71     1.0
 404          RK    1212  0.0033    0.02            TRAP      71     1.0

 405          KK  050130 COMBINE
 406          HC       2

 407          KK  050140    FROM  050130
 408          RK    1319  0.0027   0.013            DEEP     7.0

 409          KK  051410   BASIN
 410          BA   0.072
 411          LS       0      79       0       0      98       0
 412          UK      64  0.0100    0.37       9
 413          UK     150  0.0100    0.10      91
 414          RK    1170  0.0033    0.02            TRAP      38     1.0
 415          RK    1180  0.0038    0.02            TRAP      55     1.0

 416          KK  050140    FROM  051410
 417          RK    1367  0.0038   0.017            TRAP    60.0       1

 418          KK  050140   BASIN
 419          BA   0.086
 420          LS       0      79       0       0      98       0
 421          UK      94  0.0100    0.35      25
 422          UK     154  0.0100    0.10      75
 423          RK    1224  0.0038    0.02            TRAP       9     1.0
 424          RK    1267  0.0033    0.02            TRAP      79     1.0

 425          KK  050140 COMBINE
 426          HC       3

 427          KK  050150    FROM  050140
 428          RK    1252  0.0006   0.013            DEEP     5.0
```

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

 429          KK  050150   BASIN
 430          BA   0.011
 431          LS       0       79        0        0       98        0
 432          UK     159   0.0100     0.30       57
 433          UK      57   0.0100     0.10       43
 434          RK    1202   0.0033     0.02             TRAP       60      1.0

 435          KK  050150 COMBINE
 436          HC       2

 437          KK  050160    FROM  050150
 438          RK     332   0.0048    0.013             DEEP      6.0

 439          KK  051510   BASIN
 440          BA   0.010
 441          LS       0       79        0        0       98        0
 442          UK      59   0.0100     0.38       18
 443          UK     200   0.0100     0.10       82
 444          RK     139   0.0038     0.02             TRAP       41      1.0
 445          RK     521   0.0033     0.02             TRAP       71      1.0

 446          KK  051520    FROM  051510
 447          RK     783   0.0050    0.013             CIRC      6.0

 448          KK  051610   BASIN
 449          BA   0.021
 450          LS       0       79        0        0       98        0
 451          UK     165   0.0100     0.32       25
 452          UK     200   0.0100     0.10       75
 453          RK     624   0.0038     0.02             TRAP       41      1.0
 454          RK     792   0.0033     0.02             TRAP       60      1.0

 455          KK  051520    FROM  051610
 456          RK     601   0.0047    0.013             CIRC      5.0

 457          KK  051520   BASIN
 458          BA   0.023
 459          LS       0       79        0        0       98        0
 460          UK     179   0.0100     0.31       26
 461          UK     198   0.0100     0.10       74
 462          RK     473   0.0038     0.02             TRAP       60      1.0
 463          RK     704   0.0033     0.02             TRAP       71      1.0

 464          KK  051520 COMBINE
 465          HC       3

 466          KK  051710   BASIN
 467          BA   0.004
 468          LS       0       79        0        0       98        0
 469          UK     146   0.0100     0.33       24
 470          UK     200   0.0100     0.10       76
 471          RK     515   0.0038     0.02             TRAP       30      1.0
 472          RK     287   0.0033     0.02             TRAP       30      1.0
```

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

 473          KK  051520    FROM  051710
 474          RK     567  0.0032   0.013            CIRC     4.0

 475          KK  051520 COMBINE
 476          HC       2

 477          KK  051530    FROM  051520
 478          RK     926  0.0043   0.013            CIRC     7.2

 479          KK  051530   BASIN
 480          BA   0.041
 481          LS       0      79       0       0      98       0
 482          UK      26  0.0100    0.40      15
 483          UK     193  0.0100    0.10      85
 484          RK     889  0.0038    0.02            TRAP      38     1.0
 485          RK     860  0.0033    0.02            TRAP      60     1.0

 486          KK  051530 COMBINE
 487          HC       2

 488          KK  051540    FROM  051530
 489          RK     320  0.0043   0.013            CIRC     7.2

 490          KK  051540   BASIN
 491          BA   0.004
 492          LS       0      79       0       0      98       0
 493          UK      44  0.0100    0.38      16
 494          UK     172  0.0100    0.10      84
 495          RK     233  0.0038    0.02            TRAP      12     1.0
 496          RK     265  0.0033    0.02            TRAP      60     1.0

 497          KK  051540 COMBINE
 498          HC       2

 499          KK  051810   BASIN
 500          BA   0.005
 501          LS       0      79       0       0      98       0
 502          UK      23  0.0100    0.40      16
 503          UK     196  0.0100    0.10      84
 504          RK     272  0.0033    0.02            TRAP      19     1.0
 505          RK     272  0.0038    0.02            TRAP      30     1.0

 506          KK  051540    FROM  051810
 507          RK     218  0.0045   0.013            CIRC     4.5

 508          KK  051540 COMBINE
 509          HC       2

 510          KK  051550    FROM  051540
 511          RK     273  0.0025   0.013            DEEP     5.0
```

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

 512          KK  051560    FROM  051550
 513          RK     203  0.0018   0.013            CIRC     8.1

 514          KK  051560   BASIN
 515          BA   0.008
 516          LS       0      79       0       0      98       0
 517          UK     116  0.0100    0.33      47
 518          UK      89  0.0100    0.10      53
 519          RK    1126  0.0033    0.02            TRAP      60     1.0

 520          KK  051560 COMBINE
 521          HC       2

 522          KK  051570    FROM  051560
 523          RK     228  0.0018   0.013            CIRC     8.1

 524          KK  051910   BASIN
 525          BA   0.011
 526          LS       0      79       0       0      98       0
 527          UK      37  0.0100    0.39      21
 528          UK     181  0.0100    0.10      79
 529          RK     341  0.0033    0.02            TRAP      19     1.0
 530          RK     530  0.0038    0.02            TRAP      60     1.0

 531          KK  051920    FROM  051910
 532          RK    1930  0.0030   0.013            CIRC     4.0

 533          KK  051920   BASIN
 534          BA   0.060
 535          LS       0      79       0       0      98       0
 536          UK     138  0.0100    0.31      60
 537          UK      64  0.0100    0.10      40
 538          RK    1178  0.0033    0.02            TRAP      38     1.0
 539          RK    1130  0.0038    0.02            TRAP      19     1.0

 540          KK  051920 COMBINE
 541          HC       2

 542          KK  051930    FROM  051920
 543          RK     165  0.0030   0.013            CIRC     4.0

 544          KK  052010   BASIN
 545          BA   0.047
 546          LS       0      79       0       0      98       0
 547          UK     146  0.0100    0.30      63
 548          UK      55  0.0100    0.10      37
 549          RK     966  0.0033    0.02            TRAP      38     1.0
 550          RK    1174  0.0038    0.02            TRAP      19     1.0
```

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

 551          KK  052020    FROM  052010
 552          RK     300  0.0033   0.030            TRAP     5.0     1.0
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
 553          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

          (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

13        050005
               V
               V
20        050010
               .
               .
22             .      050010
               .           .
               .           .
29        050010............
               V
               V
31        050020
               .
               .
33             .      050210
               .           V
               .           V
40             .      050210
               .           V
               .           V
46             .      050020
               .           .
               .           .
48             .           .      050020
               .           .           .
               .           .           .
54        050020........................
               V
               V
56        050030
               .
               .
58             .      050030
               .           .
               .           .
65        050030............
               V
               V
67        050030
               V
               V
73        050040
               .
               .
75             .      050040
               .           .
               .           .
82        050040............
               V
               V
84        050050
               .
               .
               .      050310
               .           .
               .           .
93             .           .      050065
               .           .           .
```

```
                .           .           .
 99       050050.......................
              V
              V
 l        050065
              V
              V
107       050060
              .
              .
109           .       050060
              .           .
              .           .
115       050060............
              V
              V
117       050070
              .
              .
119           .       050410
              .           V
              .           V
126           .       050070
              .           .
              .           .
128           .           .       050070
              .           .           .
              .           .           .
134       050070.......................
              V
              V
136       050080
              .
              .
 68           .       050080
              .           .
              .           .
144       050080............
              V
              V
146       050090
              .
              .
148           .       050510
              .           V
              .           V
155           .       050090
              .           .
              .           .
157           .           .       050090
              .           .           .
              .           .           .
164       050090.......................
              V
              V
166       050100
              .
              .
168           .       050100
              .           .
              .           .
          050100............
              V
              V
177       050110
              .
```

```
                .
179             .       050110
                .            .
                .            .
  5       050110............
                .
                .
188             .       050610
                .            V
                .            V
195             .       050620
                .            .
                .            .
197             .            .       050620
                .            .            .
                .            .            .
204             .       050620............
                .            V
                .            V
206             .       050630
                .            .
                .            .
208             .            .       050630
                .            .            .
                .            .            .
215             .       050630............
                .            V
                .            V
217             .       050640
                .            .
                .            .
219             .            .       050640
                .            .            .
                .            .            .
226             .       050640............
                .            .
                .            .
228             .            .       050710
                .            .            V
                .            .            V
234             .            .       050720
                .            .            .
                .            .            .
236             .            .            .       050720
                .            .            .            .
                .            .            .            .
243             .            .       050720............
                .            .            V
                .            .            V
245             .            .       050640
                .            .            .
                .            .            .
247             .       050640............
                .            .
                .            .
249             .            .       050810
                .            .            V
                .            .            V
256             .            .       050640
                .            .            .
                .            .            .
                .       050640............
                .            V
                .            V
260             .       050650
                .            .
```

```
                .           .
262             .           .       050650
                .           .           .
                .           .           .
9               .       050650............
                .           .
                .           .
271             .           .       050910
                .           .           V
                .           .           V
277             .           .       050650
                .           .           .
                .           .           .
279             .       050650............
                .           V
                .           V
281             .       050660
                .           .
                .           .
283             .           .       050660
                .           .           .
                .           .           .
290             .       050660............
                .           V
                .           V
292             .       050110
                .           .
                .           .
294         050110............
                V
                V
296         050120
                .
                .
298             .       050120
                .           .
                .           .
305         050120............
                .
                .
307             .       051010
                .           V
                .           V
314             .       051010
                .           V
                .           V
320             .       051020
                .           .
                .           .
322             .           .       051110
                .           .           V
                .           .           V
329             .           .       051020
                .           .           .
                .           .           .
331             .           .           .       051020
                .           .           .           .
                .           .           .           .
338             .       051020........................
                .           V
                .           V
                .       051030
                .           .
                .           .
342             .           .       051030
                .           .           .
```

```
                .          .          .
348             .     051030............
                .          .
                .          .
                .          .     051210
                .          .          V
                .          .          V
356             .          .     051030
                .          .          .
                .          .          .
358             .     051030............
                .          .
                .          .
360             .          .     051310
                .          .          V
                .          .          V
366             .          .     051320
                .          .          .
                .          .          .
368             .          .          .     051320
                .          .          .          .
                .          .          .          .
375             .          .     051320............
                .          .          V
                .          .          V
377             .          .     051030
                .          .          .
                .          .          .
379             .     051030............
                .          V
                .          V
381             .     051040
                .          .
                .          .
383             .          .     051040
                .          .          .
                .          .          .
390             .     051040............
                .          V
                .          V
392             .     050120
                .          .
                .          .
394        050120............
                V
                V
396        050130
                .
                .
398             .     050130
                .          .
                .          .
405        050130............
                V
                V
407        050140
                .
                .
409             .     051410
                .          V
                .          V
                .     050140
                .          .
                .          .
418             .          .     050140
                .          .          .
```

```
                .          .          .
425     050140.......................
            V
            V
  7     050150
            .
            .
429         .      050150
            .          .
            .          .
435     050150............
            V
            V
437     050160
            .
            .
439         .      051510
            .          V
            .          V
446         .      051520
            .          .
            .          .
448         .          .      051610
            .          .          V
            .          .          V
455         .          .      051520
            .          .          .
            .          .          .
457         .          .          .      051520
            .          .          .          .
            .          .          .          .
464         .      051520.......................
            .          .
            .          .
466         .          .      051710
            .          .          V
            .          .          V
473         .          .      051520
            .          .          .
            .          .          .
475         .      051520............
            .          V
            .          V
477         .      051530
            .          .
            .          .
479         .          .      051530
            .          .          .
            .          .          .
486         .      051530............
            .          V
            .          V
488         .      051540
            .          .
            .          .
490         .          .      051540
            .          .          .
            .          .          .
497         .      051540............
            .          .
            .          .
            .          .      051810
            .          .          V
            .          .          V
506         .          .      051540
            .          .          .
```

```
                .          .          .
508             .     051540............
                .          V
                .          V
                .     051550
                .          V
                .          V
512             .     051560
                .          .
                .          .
514             .          .     051560
                .          .          .
                .          .          .
520             .     051560............
                .          V
                .          V
522             .     051570
                .          .
                .          .
524             .          .     051910
                .          .          V
                .          .          V
531             .          .     051920
                .          .          .
                .          .          .
533             .          .          .     051920
                .          .          .          .
                .          .          .          .
540             .          .     051920............
                .          .          V
                .          .          V
542             .          .     051930
                .          .          .
                .          .          .
544             .          .          .     052010
                .          .          .          V
                .          .          .          V
551             .          .          .     052020
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 05610E.HC1

```
****************************************
                                       *
     LOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991              *
*           VERSION 4.0.1E             *
*                                      *
*  RUN DATE  02/18/1997  TIME  09:14:28 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
```

```
*****************************************************************************
STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
SCOTTSDALE - TEMPE - PHOENIX
*****************************************************************************

Kimley-Horn and Associates, Inc.
KVL Consultants, Inc.

10-Year, 6-Hour Storm Event
1/97

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

   IT          HYDROGRAPH TIME DATA
                      NMIN           2  MINUTES IN COMPUTATION INTERVAL
                     IDATE      1    0  STARTING DATE
                     ITIME        0000  STARTING TIME
                        NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                    NDDATE      1    0  ENDING DATE
                    NDTIME        0958  ENDING TIME
                     ICENT          19  CENTURY MARK

              COMPUTATION INTERVAL    0.03 HOURS
                   TOTAL TIME BASE    9.97 HOURS

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


        *** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  1
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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	050005	21.	3.53	3.	2.	2.	0.04		
ROUTED TO	050010	21.	3.57	3.	2.	2.	0.04		
HYDROGRAPH AT	050010	96.	3.13	8.	5.	5.	0.07		
2 COMBINED AT	050010	96.	3.13	12.	7.	7.	0.10		
ROUTED TO	050020	93.	3.17	12.	7.	7.	0.10		
HYDROGRAPH AT	050210	100.	3.13	8.	5.	5.	0.05		
ROUTED TO	050210	0.	5.53	0.	0.	0.	0.05	0.55	9.97
ROUTED TO	050020	0.	4.73	0.	0.	0.	0.05		
HYDROGRAPH AT	050020	13.	3.17	1.	1.	1.	0.01		
3 COMBINED AT	050020	106.	3.17	13.	8.	8.	0.17		
ROUTED TO	050030	105.	3.20	13.	8.	8.	0.17		
HYDROGRAPH AT	050030	54.	3.10	3.	2.	2.	0.02		
2 COMBINED AT	050030	139.	3.17	16.	10.	10.	0.19		
ROUTED TO	050030	114.	3.27	15.	9.	9.	0.19	68.40	3.27
ROUTED TO	050040	113.	3.33	15.	9.	9.	0.19		
HYDROGRAPH AT	050040	132.	3.20	14.	9.	9.	0.12		
2 COMBINED AT	050040	211.	3.27	30.	18.	18.	0.31		
ROUTED TO	050050	209.	3.30	30.	18.	18.	0.31		
HYDROGRAPH AT	050310	75.	3.13	6.	4.	4.	0.04		
HYDROGRAPH AT	050065	50.	3.10	3.	2.	2.	0.02		
3 COMBINED AT	050050	278.	3.27	39.	24.	24.	0.37		
ROUTED TO	050065	342.	3.30	35.	21.	21.	0.37	58.59	3.30
ROUTED TO	050060	324.	3.33	35.	21.	21.	0.37		
HYDROGRAPH AT	050060	53.	3.17	5.	3.	3.	0.03		
2 COMBINED AT	050060	357.	3.33	39.	24.	24.	0.40		
ROUTED TO	050070	331.	3.37	39.	24.	24.	0.40		
HYDROGRAPH AT	050410	86.	3.13	7.	4.	4.	0.04		
ROUTED TO	050070	84.	3.13	7.	4.	4.	0.04		
HYDROGRAPH AT	050070	179.	3.17	15.	9.	9.	0.08		

3 COMBINED AT	050070	459.	3.37	61.	37.	37.	0.52
ROUTED TO	050080	442.	3.37	61.	37.	37.	0.52
HYDROGRAPH AT	050080	23.	3.13	2.	1.	1.	0.02
2 COMBINED AT	050080	453.	3.37	63.	39.	39.	0.55
ROUTED TO	050090	452.	3.37	63.	39.	39.	0.55
HYDROGRAPH AT	050510	78.	3.17	7.	4.	4.	0.05
ROUTED TO	050090	78.	3.17	7.	4.	4.	0.05
HYDROGRAPH AT	050090	76.	3.17	6.	4.	4.	0.04
3 COMBINED AT	050090	523.	3.37	76.	46.	46.	0.64
ROUTED TO	050100	522.	3.37	76.	46.	46.	0.64
HYDROGRAPH AT	050100	106.	3.13	8.	5.	5.	0.05
2 COMBINED AT	050100	567.	3.37	85.	51.	51.	0.68
ROUTED TO	050110	564.	3.37	85.	51.	51.	0.68
HYDROGRAPH AT	050110	22.	3.17	2.	1.	1.	0.01
2 COMBINED AT	050110	574.	3.37	87.	53.	53.	0.69
HYDROGRAPH AT	050610	99.	3.17	10.	6.	6.	0.08
ROUTED TO	050620	98.	3.20	10.	6.	6.	0.08
HYDROGRAPH AT	050620	111.	3.17	12.	7.	7.	0.10
2 COMBINED AT	050620	205.	3.20	21.	13.	13.	0.18
ROUTED TO	050630	204.	3.23	21.	13.	13.	0.18
HYDROGRAPH AT	050630	120.	3.13	9.	6.	6.	0.06
2 COMBINED AT	050630	292.	3.20	30.	18.	18.	0.24
ROUTED TO	050640	289.	3.23	30.	18.	18.	0.24
HYDROGRAPH AT	050640	65.	3.20	6.	3.	3.	0.03
2 COMBINED AT	050640	350.	3.23	36.	22.	22.	0.27
HYDROGRAPH AT	050710	11.	3.13	1.	1.	1.	0.00
ROUTED TO	050720	11.	3.17	1.	1.	1.	0.00
HYDROGRAPH AT	050720	54.	3.20	5.	3.	3.	0.03
2 COMBINED AT	050720	64.	3.20	6.	3.	3.	0.03
ROUTED TO	050640	63.	3.20	6.	3.	3.	0.03
2 COMBINED AT	050640	411.	3.23	41.	25.	25.	0.31
HYDROGRAPH AT	050810	25.	3.17	2.	1.	1.	0.01
ROUTED TO	050640	25.	3.20	2.	1.	1.	0.01

2 COMBINED AT	051030	206.	3.20	19.	11.	11.	0.13
ROUTED TO	051040	203.	3.23	19.	11.	11.	0.13
HYDROGRAPH AT	051040	54.	3.20	5.	3.	3.	0.04
2 COMBINED AT	051040	253.	3.23	24.	14.	14.	0.16
ROUTED TO	050120	250.	3.27	24.	14.	14.	0.16
2 COMBINED AT	050120	1358.	3.23	169.	102.	102.	1.26
ROUTED TO	050130	1336.	3.27	169.	102.	102.	1.26
HYDROGRAPH AT	050130	199.	3.17	17.	10.	10.	0.10
2 COMBINED AT	050130	1506.	3.23	186.	113.	113.	1.36
ROUTED TO	050140	1499.	3.27	186.	113.	113.	1.36
HYDROGRAPH AT	051410	178.	3.13	13.	8.	8.	0.07
ROUTED TO	050140	173.	3.17	13.	8.	8.	0.07
HYDROGRAPH AT	050140	175.	3.13	14.	8.	8.	0.09
3 COMBINED AT	050140	1745.	3.23	213.	129.	129.	1.52
ROUTED TO	050150	1743.	3.27	213.	129.	129.	1.52
HYDROGRAPH AT	050150	12.	3.17	1.	1.	1.	0.01
2 COMBINED AT	050150	1751.	3.27	214.	130.	130.	1.53
ROUTED TO	050160	1745.	3.27	214.	130.	130.	1.53
HYDROGRAPH AT	051510	21.	3.13	2.	1.	1.	0.01
ROUTED TO	051520	21.	3.17	2.	1.	1.	0.01
HYDROGRAPH AT	051610	39.	3.17	3.	2.	2.	0.02
ROUTED TO	051520	39.	3.17	3.	2.	2.	0.02
HYDROGRAPH AT	051520	43.	3.17	4.	2.	2.	0.02
3 COMBINED AT	051520	102.	3.17	9.	5.	5.	0.05
HYDROGRAPH AT	051710	8.	3.17	1.	0.	0.	0.00
ROUTED TO	051520	8.	3.17	1.	0.	0.	0.00
2 COMBINED AT	051520	110.	3.17	9.	6.	6.	0.06
ROUTED TO	051530	108.	3.17	9.	6.	6.	0.06
HYDROGRAPH AT	051530	92.	3.17	7.	4.	4.	0.04
2 COMBINED AT	051530	199.	3.17	17.	10.	10.	0.10
ROUTED TO	051540	198.	3.17	17.	10.	10.	0.10
HYDROGRAPH AT	051540	9.	3.13	1.	0.	0.	0.00
2 COMBINED AT	051540	206.	3.17	17.	10.	10.	0.10

2 COMBINED AT	050640	433.	3.23	44.	26.	26.	0.32		
ROUTED TO	050650	430.	3.23	44.	26.	26.	0.32		
HYDROGRAPH AT	050650	42.	3.13	3.	2.	2.	0.02		
2 COMBINED AT	050650	463.	3.23	47.	28.	28.	0.34		
HYDROGRAPH AT	050910	23.	3.13	2.	1.	1.	0.01		
ROUTED TO	050650	22.	3.17	2.	1.	1.	0.01		
2 COMBINED AT	050650	481.	3.23	49.	30.	30.	0.35		
ROUTED TO	050660	477.	3.23	49.	30.	30.	0.35		
HYDROGRAPH AT	050660	40.	3.17	3.	2.	2.	0.02		
2 COMBINED AT	050660	509.	3.23	52.	31.	31.	0.37		
ROUTED TO	050110	505.	3.23	52.	31.	31.	0.37		
2 COMBINED AT	050110	1050.	3.23	139.	84.	84.	1.06		
ROUTED TO	050120	1049.	3.23	139.	84.	84.	1.06		
HYDROGRAPH AT	050120	86.	3.17	7.	4.	4.	0.04		
2 COMBINED AT	050120	1121.	3.23	145.	88.	88.	1.10		
HYDROGRAPH AT	051010	42.	3.13	4.	2.	2.	0.02		
ROUTED TO	051010	3.	4.23	1.	0.	0.	0.02	61.01	4.23
ROUTED TO	051020	3.	4.43	1.	0.	0.	0.02		
HYDROGRAPH AT	051110	58.	3.13	5.	3.	3.	0.03		
ROUTED TO	051020	57.	3.17	5.	3.	3.	0.03		
HYDROGRAPH AT	051020	49.	3.20	4.	3.	3.	0.03		
3 COMBINED AT	051020	106.	3.17	10.	6.	6.	0.08		
ROUTED TO	051030	105.	3.20	10.	6.	6.	0.08		
HYDROGRAPH AT	051030	57.	3.20	5.	3.	3.	0.03		
2 COMBINED AT	051030	162.	3.20	15.	9.	9.	0.11		
HYDROGRAPH AT	051210	19.	3.10	1.	1.	1.	0.01		
ROUTED TO	051030	19.	3.13	1.	1.	1.	0.01		
2 COMBINED AT	051030	177.	3.20	16.	10.	10.	0.11		
HYDROGRAPH AT	051310	7.	3.13	1.	0.	0.	0.00		
ROUTED TO	051320	7.	3.17	1.	0.	0.	0.00		
HYDROGRAPH AT	051320	22.	3.13	2.	1.	1.	0.01		
2 COMBINED AT	051320	29.	3.13	2.	1.	1.	0.01		
ROUTED TO	051030	29.	3.20	2.	1.	1.	0.01		

HYDROGRAPH AT	051810	12.	3.13	1.	1.	1.	0.00
ROUTED TO	051540	12.	3.13	1.	1.	1.	0.00
2 COMBINED AT	051540	217.	3.17	18.	11.	11.	0.11
ROUTED TO	051550	215.	3.17	18.	11.	11.	0.11
ROUTED TO	051560	213.	3.17	18.	11.	11.	0.11
HYDROGRAPH AT	051560	10.	3.17	1.	1.	1.	0.01
2 COMBINED AT	051560	223.	3.17	19.	12.	12.	0.12
ROUTED TO	051570	220.	3.17	19.	12.	12.	0.12
HYDROGRAPH AT	051910	24.	3.13	2.	1.	1.	0.01
ROUTED TO	051920	23.	3.20	2.	1.	1.	0.01
HYDROGRAPH AT	051920	74.	3.13	7.	4.	4.	0.06
2 COMBINED AT	051920	93.	3.13	9.	5.	5.	0.07
ROUTED TO	051930	92.	3.13	9.	5.	5.	0.07
HYDROGRAPH AT	052010	53.	3.13	5.	3.	3.	0.05
ROUTED TO	052020	52.	3.13	5.	3.	3.	0.05

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
050005	MANE	1.25	20.70	210.86	0.83	2.00	20.62	212.00	0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1706E+01 OUTFLOW=0.1674E+01 BASIN STORAGE=0.2220E-01 PERCENT ERROR= 0.5

050010	MANE	1.56	20.57	213.75	0.82	2.00	20.55	214.00	0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1674E+01 EXCESS=0.0000E+00 OUTFLOW=0.1669E+01 BASIN STORAGE=0.4186E-02 PERCENT ERROR= 0.0

050010	MANE	1.33	96.72	187.31	1.20	2.00	95.85	188.00	1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4245E+01 OUTFLOW=0.4215E+01 BASIN STORAGE=0.2301E-01 PERCENT ERROR= 0.2

050020	MANE	1.39	93.71	190.07	1.06	2.00	93.44	190.00	1.06

ONTINUITY SUMMARY (AC-FT) - INFLOW=0.5887E+01 EXCESS=0.0000E+00 OUTFLOW=0.5875E+01 BASIN STORAGE=0.1056E-01 PERCENT ERROR= 0.0

050210	MANE	0.98	99.92	188.76	1.46	2.00	99.54	188.00	1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4226E+01 OUTFLOW=0.4205E+01 BASIN STORAGE=0.1724E-01 PERCENT ERROR= 0.1

050020	MANE	2.00	0.01	599.05	0.00	2.00	0.01	598.00	0.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2856E-02 EXCESS=0.0000E+00 OUTFLOW=0.2431E-02 BASIN STORAGE=0.4309E-03 PERCENT ERROR= -0.2

050020	MANE	2.00	12.86	189.95	1.32	2.00	12.85	190.00	1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6373E+00 OUTFLOW=0.6317E+00 BASIN STORAGE=0.4033E-02 PERCENT ERROR= 0.2

050030	MANE	0.37	105.87	191.02	0.73	2.00	104.88	192.00	0.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6504E+01 EXCESS=0.0000E+00 OUTFLOW=0.6503E+01 BASIN STORAGE=0.3037E-02 PERCENT ERROR= 0.0

050030	MANE	1.39	54.49	185.60	1.63	2.00	53.61	186.00	1.63

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1742E+01 OUTFLOW=0.1739E+01 BASIN STORAGE=0.2044E-02 PERCENT ERROR= 0.0

050040	MANE	1.95	113.58	199.59	0.77	2.00	112.79	200.00	0.77

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7636E+01 EXCESS=0.0000E+00 OUTFLOW=0.7667E+01 BASIN STORAGE=0.2596E-01 PERCENT ERROR=  -0.7

          050040  MANE        2.00    132.25    191.90      1.08      2.00    131.79    192.00        1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7205E+01 OUTFLOW=0.7116E+01 BASIN STORAGE=0.6079E-01 PERCENT ERROR=   0.4

          050050  MANE        0.23    210.89    196.50      0.89      2.00    208.60    198.00        0.89

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1478E+02 EXCESS=0.0000E+00 OUTFLOW=0.1478E+02 BASIN STORAGE=0.6265E-03 PERCENT ERROR=   0.0

          050310  MANE        0.92     75.75    188.93      1.46      2.00     75.20    188.00        1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3209E+01 OUTFLOW=0.3190E+01 BASIN STORAGE=0.1452E-01 PERCENT ERROR=   0.1

          050065  MANE        1.29     50.76    186.14      1.63      2.00     50.43    186.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1742E+01 OUTFLOW=0.1738E+01 BASIN STORAGE=0.2734E-02 PERCENT ERROR=   0.1

          050060  MANE        1.05    324.01    200.00      0.87      2.00    323.94    200.00        0.87

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1722E+02 EXCESS=0.0000E+00 OUTFLOW=0.1719E+02 BASIN STORAGE=0.1840E-01 PERCENT ERROR=   0.0

          050060  MANE        2.00     52.72    191.87      1.56      2.00     52.58    190.00        1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2427E+01 OUTFLOW=0.2408E+01 BASIN STORAGE=0.1081E-01 PERCENT ERROR=   0.3

          050070  MANE        0.99    334.31    202.34      0.92      2.00    331.22    202.00        0.92

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1962E+02 EXCESS=0.0000E+00 OUTFLOW=0.1966E+02 BASIN STORAGE=0.2110E-01 PERCENT ERROR=  -0.3

          050410  MANE        1.19     86.35    188.28      1.50      2.00     85.86    188.00        1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3292E+01 OUTFLOW=0.3282E+01 BASIN STORAGE=0.8189E-02 PERCENT ERROR=   0.1

          050070  MANE        0.23     85.55    188.55      1.50      2.00     84.16    188.00        1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3283E+01 EXCESS=0.0000E+00 OUTFLOW=0.3283E+01 BASIN STORAGE=0.6196E-03 PERCENT ERROR=   0.0

          050070  MANE        1.93    179.57    191.46      1.71      2.00    178.68    190.00        1.71

:UITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7713E+01 OUTFLOW=0.7660E+01 BASIN STORAGE=0.2368E-01 PERCENT ERROR=   0.4

          050080  MANE        0.54    451.45    202.69      1.09      2.00    442.06    202.00        1.09
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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3057E+02 EXCESS=0.0000E+00 OUTFLOW=0.3057E+02 BASIN STORAGE=0.6014E-02 PERCENT ERROR= 0.0

050080	MANE	2.00	23.10	188.63	1.05	2.00	22.80	188.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1188E+01 OUTFLOW=0.1178E+01 BASIN STORAGE=0.6871E-02 PERCENT ERROR= 0.3

050090	MANE	0.17	452.35	202.16	1.09	2.00	452.01	202.00	1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3175E+02 EXCESS=0.0000E+00 OUTFLOW=0.3175E+02 BASIN STORAGE=0.1805E-02 PERCENT ERROR= 0.0

050510	MANE	1.50	79.77	189.39	1.20	2.00	78.01	190.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3494E+01 OUTFLOW=0.3470E+01 BASIN STORAGE=0.1608E-01 PERCENT ERROR= 0.2

050090	MANE	0.36	77.94	190.15	1.21	2.00	77.93	190.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3472E+01 EXCESS=0.0000E+00 OUTFLOW=0.3472E+01 BASIN STORAGE=0.2389E-03 PERCENT ERROR= 0.0

050090	MANE	1.25	77.07	188.97	1.53	2.00	75.95	190.00	1.52

NTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3021E+01 OUTFLOW=0.3011E+01 BASIN STORAGE=0.7900E-02 PERCENT ERROR= 0.1

050100	MANE	0.33	522.23	202.26	1.13	2.00	521.69	202.00	1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3823E+02 EXCESS=0.0000E+00 OUTFLOW=0.3823E+02 BASIN STORAGE=0.3552E-02 PERCENT ERROR= 0.0

050100	MANE	1.41	108.52	189.10	1.73	2.00	106.25	188.00	1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4163E+01 OUTFLOW=0.4146E+01 BASIN STORAGE=0.1006E-01 PERCENT ERROR= 0.2

050110	MANE	0.22	566.73	202.45	1.17	2.00	564.29	202.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4239E+02 EXCESS=0.0000E+00 OUTFLOW=0.4238E+02 BASIN STORAGE=0.3176E-02 PERCENT ERROR= 0.0

050110	MANE	0.83	22.36	189.40	1.63	2.00	22.20	190.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8709E+00 OUTFLOW=0.8674E+00 BASIN STORAGE=0.2426E-02 PERCENT ERROR= 0.1

050610	MANE	1.46	101.00	189.46	1.10	2.00	99.04	190.00	1.10

JUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4801E+01 OUTFLOW=0.4760E+01 BASIN STORAGE=0.2964E-01 PERCENT ERROR= 0.2

050620	MANE	1.25	98.83	190.80	1.10	2.00	98.36	192.00	1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4761E+01 EXCESS=0.0000E+00 OUTFLOW=0.4751E+01 BASIN STORAGE=0.8034E-02 PERCENT ERROR= 0.0

050620	MANE	2.00	111.40	190.17	1.10	2.00	110.58	190.00	1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5867E+01 OUTFLOW=0.5804E+01 BASIN STORAGE=0.4209E-01 PERCENT ERROR= 0.4

050630	MANE	1.24	204.55	193.74	1.10	2.00	203.56	194.00	1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1055E+02 EXCESS=0.0000E+00 OUTFLOW=0.1052E+02 BASIN STORAGE=0.1994E-01 PERCENT ERROR= 0.1

050630	MANE	1.37	120.14	187.99	1.40	2.00	120.11	188.00	1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4642E+01 OUTFLOW=0.4618E+01 BASIN STORAGE=0.1773E-01 PERCENT ERROR= 0.1

050640	MANE	0.94	290.11	194.25	1.17	2.00	288.97	194.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1513E+02 EXCESS=0.0000E+00 OUTFLOW=0.1510E+02 BASIN STORAGE=0.2283E-01 PERCENT ERROR= 0.1

050640	MANE	1.50	65.19	191.21	1.62	2.00	64.77	192.00	1.62

ONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2787E+01 OUTFLOW=0.2769E+01 BASIN STORAGE=0.9847E-02 PERCENT ERROR= 0.3

050710	MANE	1.41	11.04	187.86	1.63	2.00	11.03	188.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4355E+00 OUTFLOW=0.4336E+00 BASIN STORAGE=0.1041E-02 PERCENT ERROR= 0.2

050720	MANE	0.26	11.00	188.46	1.63	2.00	10.77	190.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4340E+00 EXCESS=0.0000E+00 OUTFLOW=0.4340E+00 BASIN STORAGE=0.1446E-04 PERCENT ERROR= 0.0

050720	MANE	2.00	54.40	190.79	1.60	2.00	53.82	192.00	1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2400E+01 OUTFLOW=0.2385E+01 BASIN STORAGE=0.8781E-02 PERCENT ERROR= 0.3

050640	MANE	0.31	63.52	192.28	1.60	2.00	63.46	192.00	1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2816E+01 EXCESS=0.0000E+00 OUTFLOW=0.2816E+01 BASIN STORAGE=0.1211E-03 PERCENT ERROR= 0.0

050810	MANE	1.74	25.55	189.14	1.56	2.00	25.37	190.00	1.56

INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1088E+01 OUTFLOW=0.1080E+01 BASIN STORAGE=0.3609E-02 PERCENT ERROR= 0.4

050640	MANE	0.59	25.29	191.22	1.56	2.00	24.71	192.00	1.56

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1079E+01 EXCESS=0.0000E+00 OUTFLOW=0.1080E+01 BASIN STORAGE=0.1186E-03 PERCENT ERROR=  -0.1

          050650  MANE        0.33    431.88    194.34      1.28      2.00    430.45    194.00        1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2177E+02 EXCESS=0.0000E+00 OUTFLOW=0.2177E+02 BASIN STORAGE=0.1654E-02 PERCENT ERROR=   0.0

          050650  MANE        1.08     42.51    189.15      1.61      2.00     42.09    188.00        1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1642E+01 OUTFLOW=0.1635E+01 BASIN STORAGE=0.4128E-02 PERCENT ERROR=   0.1

          050910  MANE        1.31     23.03    188.42      1.48      2.00     22.96    188.00        1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9556E+00 OUTFLOW=0.9500E+00 BASIN STORAGE=0.3772E-02 PERCENT ERROR=   0.2

          050650  MANE        0.59     22.75    189.42      1.49      2.00     22.40    190.00        1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9505E+00 EXCESS=0.0000E+00 OUTFLOW=0.9510E+00 BASIN STORAGE=0.1686E-03 PERCENT ERROR=  -0.1

          050660  MANE        0.26    480.22    194.44      1.30      2.00    476.91    194.00        1.30

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2436E+02 EXCESS=0.0000E+00 OUTFLOW=0.2436E+02 BASIN STORAGE=0.2029E-02 PERCENT ERROR=   0.0

          050660  MANE        1.09     40.63    189.41      1.63      2.00     40.15    190.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1568E+01 OUTFLOW=0.1561E+01 BASIN STORAGE=0.4593E-02 PERCENT ERROR=   0.1

          050110  MANE        0.21    508.05    194.38      1.32      2.00    505.04    194.00        1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2593E+02 EXCESS=0.0000E+00 OUTFLOW=0.2593E+02 BASIN STORAGE=0.1483E-02 PERCENT ERROR=   0.0

          050120  MANE        0.41   1049.09    193.95      1.22      2.00   1049.02    194.00        1.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6919E+02 EXCESS=0.0000E+00 OUTFLOW=0.6919E+02 BASIN STORAGE=0.7090E-02 PERCENT ERROR=   0.0

          050120  MANE        1.54     86.49    189.92      1.64      2.00     86.34    190.00        1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3423E+01 OUTFLOW=0.3405E+01 BASIN STORAGE=0.1024E-01 PERCENT ERROR=   0.2

          051010  MANE        0.97     42.42    188.52      1.46      2.00     42.04    188.00        1.46

 NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1800E+01 OUTFLOW=0.1791E+01 BASIN STORAGE=0.7795E-02 PERCENT ERROR=   0.1

          051020  MANE        0.67      3.11    265.08      0.26      2.00      2.99    266.00        0.26
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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3015E+00 EXCESS=0.0000E+00 OUTFLOW=0.3157E+00 BASIN STORAGE=0.5736E-02 PERCENT ERROR= -6.6

051110	MANE	1.37	58.08	189.39	1.69	2.00	57.87	188.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2262E+01 OUTFLOW=0.2252E+01 BASIN STORAGE=0.4880E-02 PERCENT ERROR= 0.2

051020	MANE	0.61	57.59	189.70	1.69	2.00	57.44	190.00	1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2251E+01 EXCESS=0.0000E+00 OUTFLOW=0.2253E+01 BASIN STORAGE=0.9481E-03 PERCENT ERROR= -0.1

051020	MANE	2.00	49.67	190.64	1.53	2.00	48.95	192.00	1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2223E+01 OUTFLOW=0.2207E+01 BASIN STORAGE=0.7967E-02 PERCENT ERROR= 0.4

051030	MANE	0.81	104.97	192.11	1.19	2.00	104.89	192.00	1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4771E+01 EXCESS=0.0000E+00 OUTFLOW=0.4769E+01 BASIN STORAGE=0.5335E-02 PERCENT ERROR= -0.1

051030	MANE	2.00	57.28	191.92	1.65	2.00	57.27	192.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2742E+01 OUTFLOW=0.2721E+01 BASIN STORAGE=0.1172E-01 PERCENT ERROR= 0.3

051210	MANE	0.80	18.89	187.30	1.63	2.00	18.53	186.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6967E+00 OUTFLOW=0.6948E+00 BASIN STORAGE=0.1161E-02 PERCENT ERROR= 0.1

051030	MANE	0.56	18.53	187.14	1.63	2.00	18.52	188.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6952E+00 EXCESS=0.0000E+00 OUTFLOW=0.6956E+00 BASIN STORAGE=0.2385E-03 PERCENT ERROR= -0.1

051310	MANE	1.04	7.34	186.96	1.74	2.00	7.31	188.00	1.74

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2796E+00 OUTFLOW=0.2789E+00 BASIN STORAGE=0.5135E-03 PERCENT ERROR= 0.1

051320	MANE	0.97	7.27	190.02	1.74	2.00	7.27	190.00	1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2788E+00 EXCESS=0.0000E+00 OUTFLOW=0.2788E+00 BASIN STORAGE=0.2282E-03 PERCENT ERROR= -0.1

051320	MANE	0.83	22.31	187.99	1.73	2.00	22.31	188.00	1.73

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8327E+00 OUTFLOW=0.8298E+00 BASIN STORAGE=0.1460E-02 PERCENT ERROR= 0.2

051030	MANE	1.59	28.76	191.91	1.73	2.00	28.67	192.00	1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1109E+01 EXCESS=0.0000E+00 OUTFLOW=0.1108E+01 BASIN STORAGE=0.1690E-02 PERCENT ERROR= 0.0

051040 MANE 1.27 203.72 195.03 1.38 2.00 202.74 194.00 1.38

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9295E+01 EXCESS=0.0000E+00 OUTFLOW=0.9273E+01 BASIN STORAGE=0.1724E-01 PERCENT ERROR= 0.0

051040 MANE 2.00 54.49 191.52 1.32 2.00 53.60 192.00 1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2549E+01 OUTFLOW=0.2529E+01 BASIN STORAGE=0.1339E-01 PERCENT ERROR= 0.3

050120 MANE 1.12 251.15 196.47 1.36 2.00 249.76 196.00 1.36

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1180E+02 EXCESS=0.0000E+00 OUTFLOW=0.1176E+02 BASIN STORAGE=0.2255E-01 PERCENT ERROR= 0.1

050130 MANE 0.41 1356.29 194.81 1.25 2.00 1335.70 196.00 1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8437E+02 EXCESS=0.0000E+00 OUTFLOW=0.8438E+02 BASIN STORAGE=0.1756E-01 PERCENT ERROR= 0.0

050130 MANE 1.18 201.77 190.75 1.62 2.00 198.78 190.00 1.62

ONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8359E+01 OUTFLOW=0.8308E+01 BASIN STORAGE=0.2944E-01 PERCENT ERROR= 0.3

050140 MANE 0.49 1502.99 195.35 1.28 2.00 1498.88 196.00 1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9268E+02 EXCESS=0.0000E+00 OUTFLOW=0.9268E+02 BASIN STORAGE=0.1927E-01 PERCENT ERROR= 0.0

051410 MANE 1.05 179.25 188.68 1.70 2.00 178.08 188.00 1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6562E+01 OUTFLOW=0.6544E+01 BASIN STORAGE=0.1382E-01 PERCENT ERROR= 0.1

050140 MANE 1.23 175.37 190.24 1.70 2.00 173.00 190.00 1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6542E+01 EXCESS=0.0000E+00 OUTFLOW=0.6529E+01 BASIN STORAGE=0.7829E-02 PERCENT ERROR= 0.1

050140 MANE 1.29 176.46 189.02 1.50 2.00 174.88 188.00 1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6905E+01 OUTFLOW=0.6874E+01 BASIN STORAGE=0.1865E-01 PERCENT ERROR= 0.2

050150 MANE 0.65 1744.05 195.30 1.31 2.00 1742.71 196.00 1.31

NUITY SUMMARY (AC-FT) - INFLOW=0.1061E+03 EXCESS=0.0000E+00 OUTFLOW=0.1061E+03 BASIN STORAGE=0.3448E-01 PERCENT ERROR= -0.1

050150 MANE 2.00 11.57 190.40 1.09 2.00 11.50 190.00 1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6446E+00 OUTFLOW=0.6376E+00 BASIN STORAGE=0.4975E-02 PERCENT ERROR= 0.3

050160	MANE	0.15	1749.06	196.28	1.31	2.00	1745.38	196.00	1.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1067E+03 EXCESS=0.0000E+00 OUTFLOW=0.1067E+03 BASIN STORAGE=0.4345E-02 PERCENT ERROR= 0.0

051510	MANE	1.18	21.27	188.57	1.59	2.00	21.15	188.00	1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8506E+00 OUTFLOW=0.8466E+00 BASIN STORAGE=0.2308E-02 PERCENT ERROR= 0.2

051520	MANE	0.49	21.03	189.28	1.59	2.00	20.77	190.00	1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8469E+00 EXCESS=0.0000E+00 OUTFLOW=0.8472E+00 BASIN STORAGE=0.6202E-04 PERCENT ERROR= 0.0

051610	MANE	1.22	39.29	190.01	1.50	2.00	39.29	190.00	1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1686E+01 OUTFLOW=0.1676E+01 BASIN STORAGE=0.7637E-02 PERCENT ERROR= 0.2

051520	MANE	0.40	39.05	190.64	1.50	2.00	38.52	190.00	1.50

ONTINUITY SUMMARY (AC-FT) - INFLOW=0.1676E+01 EXCESS=0.0000E+00 OUTFLOW=0.1676E+01 BASIN STORAGE=0.1288E-03 PERCENT ERROR= 0.0

051520	MANE	1.21	43.16	189.81	1.48	2.00	42.92	190.00	1.48

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1831E+01 OUTFLOW=0.1819E+01 BASIN STORAGE=0.8303E-02 PERCENT ERROR= 0.2

051710	MANE	0.65	7.88	188.76	1.51	2.00	7.77	190.00	1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3240E+00 OUTFLOW=0.3224E+00 BASIN STORAGE=0.1233E-02 PERCENT ERROR= 0.1

051520	MANE	0.60	7.76	190.34	1.51	2.00	7.75	190.00	1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3226E+00 EXCESS=0.0000E+00 OUTFLOW=0.3227E+00 BASIN STORAGE=0.3447E-04 PERCENT ERROR= 0.0

051530	MANE	0.51	109.15	191.07	1.51	2.00	107.59	190.00	1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4665E+01 EXCESS=0.0000E+00 OUTFLOW=0.4666E+01 BASIN STORAGE=0.4193E-03 PERCENT ERROR= 0.0

051530	MANE	0.97	92.52	188.84	1.63	2.00	91.53	190.00	1.63

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3570E+01 OUTFLOW=0.3558E+01 BASIN STORAGE=0.8718E-02 PERCENT ERROR= 0.1

051540	MANE	0.21	198.44	190.30	1.56	2.00	197.51	190.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8224E+01 EXCESS=0.0000E+00 OUTFLOW=0.8223E+01 BASIN STORAGE=0.2026E-03 PERCENT ERROR= 0.0

051540	MANE	0.78	9.52	187.16	1.62	2.00	9.38	188.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3457E+00 OUTFLOW=0.3447E+00 BASIN STORAGE=0.6075E-03 PERCENT ERROR= 0.1

051810	MANE	0.51	11.76	187.31	1.62	2.00	11.63	188.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4321E+00 OUTFLOW=0.4306E+00 BASIN STORAGE=0.7745E-03 PERCENT ERROR= 0.2

051540	MANE	0.23	11.60	188.25	1.61	2.00	11.57	188.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4304E+00 EXCESS=0.0000E+00 OUTFLOW=0.4304E+00 BASIN STORAGE=0.8082E-05 PERCENT ERROR= 0.0

051550	MANE	0.21	215.96	190.41	1.56	2.00	214.74	190.00	1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9001E+01 EXCESS=0.0000E+00 OUTFLOW=0.9001E+01 BASIN STORAGE=0.3842E-03 PERCENT ERROR= 0.0

051560	MANE	0.26	214.02	190.31	1.56	2.00	212.71	190.00	1.56

ONTINUITY SUMMARY (AC-FT) - INFLOW=0.9005E+01 EXCESS=0.0000E+00 OUTFLOW=0.9004E+01 BASIN STORAGE=0.1903E-03 PERCENT ERROR= 0.0

051560	MANE	2.00	10.16	189.32	1.22	2.00	10.12	190.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5231E+00 OUTFLOW=0.5186E+00 BASIN STORAGE=0.3077E-02 PERCENT ERROR= 0.3

051570	MANE	0.28	222.13	190.34	1.54	2.00	220.14	190.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9525E+01 EXCESS=0.0000E+00 OUTFLOW=0.9524E+01 BASIN STORAGE=0.2309E-03 PERCENT ERROR= 0.0

051910	MANE	1.06	24.07	187.93	1.55	2.00	24.05	188.00	1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9132E+00 OUTFLOW=0.9101E+00 BASIN STORAGE=0.1824E-02 PERCENT ERROR= 0.1

051920	MANE	1.54	23.52	191.63	1.55	2.00	23.23	192.00	1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9101E+00 EXCESS=0.0000E+00 OUTFLOW=0.9110E+00 BASIN STORAGE=0.1894E-03 PERCENT ERROR= -0.1

051920	MANE	0.94	74.54	187.32	1.05	2.00	73.53	188.00	1.05

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3393E+01 OUTFLOW=0.3370E+01 BASIN STORAGE=0.1964E-01 PERCENT ERROR= 0.1

051930	MANE	0.24	92.45	188.21	1.13	2.00	91.74	188.00	1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4277E+01 EXCESS=0.0000E+00 OUTFLOW=0.4277E+01 BASIN STORAGE=0.1005E-03 PERCENT ERROR= 0.0

052010	MANE	1.19	53.74	187.19	1.01	2.00	53.17	188.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2563E+01 OUTFLOW=0.2542E+01 BASIN STORAGE=0.1622E-01 PERCENT ERROR= 0.2

052020	MANE	0.49	52.72	188.46	1.01	2.00	52.25	188.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2542E+01 EXCESS=0.0000E+00 OUTFLOW=0.2543E+01 BASIN STORAGE=0.5898E-03 PERCENT ERROR= 0.0

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 050210
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	0.00	1.00	1.00
STORAGE	0.	8.	8.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	0.55	0.00	4.	0.	0.00	9.97	0.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 050030
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	65.00	68.00	68.00
STORAGE	0.	1.	1.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	68.40	0.40	1.	114.	6.93	3.27	0.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 050065
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	54.00	57.50	57.50
STORAGE	0.	2.	2.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	58.59	1.09	3.	342.	6.83	3.30	0.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 051010
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	58.00	61.00	61.00
STORAGE	0.	1.	1.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	61.01	0.01	1.	3.	5.80	4.23	0.00

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

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 06610e.HC1

```
*************************************
                                    *
  FLOOD HYDROGRAPH PACKAGE  (HEC-1) *
            MAY   1991              *
*         VERSION 4.0.1E            *
*                                   *
* RUN DATE  07/17/1997  TIME  08:02:14 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*      DAVIS, CALIFORNIA 95616      *
*          (916) 756-1104           *
*                                   *
*************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

```
::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
:::                                  :::
:::  Full Microcomputer Implementation :::
:::                by                :::
:::       Haestad Methods, Inc.      :::
:::                                  :::
::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              *
              *
              *
  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    1/97
              *
              *
              *DIAGRAM
 11           IT       2                     300
 12           IO       5
              * Revised area for basin 060010 per topography, new basin: 060015

 13           KK  060010   BASIN
 14           BA   0.007
 15           PH    0.00    0.00    0.50    0.97    1.61    1.76    1.86    2.05
 16           LS       0      79       0       0      98       0
 17           UK      53  0.0100    0.38      17
 18           UK     197  0.0100    0.10      83
 19           RK     214  0.0050    0.02            TRAP      38     1.0
 20           RK     774  0.0049    0.02            TRAP      60     1.0

 21           KK  060020    FROM  060010
 22           RK     806  0.0016   0.013            CIRC     3.0

 23           KK  060020   BASIN
 24           BA   0.026
 25           LS       0      79       0       0      98       0
 26           UK      62  0.0100    0.37      16
 27           UK     169  0.0100    0.10      84
 28           RK     757  0.0050    0.02            TRAP      60     1.0
 29           RK    1252  0.0049    0.02            TRAP      68     1.0

 30           KK  060020 COMBINE
 31           HC       2

 32           KK  060030    FROM  060020
 33           RK     567  0.0053   0.013            CIRC     4.0

 34           KK  060030   BASIN
 35           BA   0.011
 36           LS       0      79       0       0      98       0
 37           UK      20  0.0100    0.40      15
 38           UK     200  0.0100    0.10      85
 39           RK     558  0.0049    0.02            TRAP      30     1.0
 40           RK     567  0.0050    0.02            TRAP      47     1.0
```

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

  41          KK  060030 COMBINE
  42          HC       2

  43          KK  060040    FROM  060030
  44          RK     689  0.0032   0.013            CIRC     4.5
              * Basin Area Increased

  45          KK  060210   BASIN
  46          BA   0.026
  47          LS       0      79       0       0      98       0
  48          UK     140  0.0100    0.31      15
  49          UK      60  0.0100    0.10      85
  50          RK     375  0.0049    0.02            TRAP      40       1
  51          RK    1200  0.0050    0.02            TRAP      45       1

  52          KK  060040    FROM  060210
  53          RK     696  0.0060   0.013            CIRC     3.5

  54          KK  060040   BASIN
  55          BA   0.019
  56          LS       0      79       0       0      98       0
  57          UK      32  0.0100    0.39      15
  58          UK     187  0.0100    0.10      85
  59          RK     558  0.0049    0.02            TRAP      38     1.0
  60          RK     689  0.0050    0.02            TRAP      47     1.0

  61          KK  060040 COMBINE
  62          HC       3

  63          KK  060050    FROM  060040
  64          RK     653  0.0073   0.013            CIRC     6.0

  65          KK  060050   BASIN
  66          BA   0.030
  67          LS       0      79       0       0      98       0
  68          UK      67  0.0100    0.36      15
  69          UK     145  0.0100    0.10      85
  70          RK     568  0.0049    0.02            TRAP      53     1.0
  71          RK    1166  0.0050    0.02            TRAP      49     1.0

  72          KK  060050 COMBINE
  73          HC       2

  74          KK  060060    FROM  060050
  75          RK     672  0.0083   0.013            CIRC     6.0

  76          KK  060060   BASIN
  77          BA   0.009
  78          LS       0      79       0       0      98       0
  79          UK      20  0.0100    0.40      15
  80          UK     200  0.0100    0.10      85
  81          RK     282  0.0049    0.02            TRAP      25     1.0
  82          RK     671  0.0050    0.02            TRAP      47     1.0
```

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

  83          KK  060060 COMBINE
  84          HC       2
              * Split Basin 060010 to 060010 and 060015:  (Note: 060010 above)

  85          KK  060015   BASIN
  86          BA   0.004
  87          LS       0      79       0       0      98       0
  88          UK      50    0.01    0.40      17
  89          UK     200    0.01    0.10      83
  90          RK     200   0.005    0.02            TRAP      38       1
  91          RK     775   0.005    0.02            TRAP      60       1

  92          KK  060320    FROM  060015
  93          RK    1900  0.0053   0.013            TRAP      30       1

  94          KK  060310   BASIN
  95          BA   0.023
  96          LS       0      79       0       0      98       0
  97          UK      36  0.0100    0.39      16
  98          UK     200  0.0100    0.10      84
  99          RK     565  0.0049    0.02            TRAP      53     1.0
 100          RK     646  0.0050    0.02            TRAP      71     1.0

 101          KK  060320    FROM  060310
 102          RK    1232  0.0045   0.013            CIRC     3.0

 103          KK  060320   BASIN
 104          BA   0.055
 105          LS       0      79       0       0      98       0
 106          UK      33  0.0100    0.39      15
 107          UK     184  0.0100    0.10      85
 108          RK    1018  0.0050    0.02            TRAP      52     1.0
 109          RK    1287  0.0049    0.02            TRAP      75     1.0

 110          KK  060320 COMBINE
 111          HC       2

 112          KK  060330    FROM  060320
 113          RK     578  0.0045   0.013            CIRC     4.5

 114          KK  060330   BASIN
 115          BA   0.016
 116          LS       0      79       0       0      98       0
 117          UK      20  0.0100    0.40      15
 118          UK     200  0.0100    0.10      85
 119          RK     604  0.0049    0.02            TRAP      50     1.0
 120          RK     578  0.0050    0.02            TRAP      55     1.0

 121          KK  060330 COMBINE
 122          HC       2
```

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

  123         KK  060340    FROM  060330
  124         RK     363  0.0045   0.013            CIRC     5.0

  125         KK  060340   BASIN
  126         BA   0.009
  127         LS       0      79       0       0      98       0
  128         UK      20  0.0100    0.40      15
  129         UK     200  0.0100    0.10      85
  130         RK     639  0.0049    0.02            TRAP      13     1.0
  131         RK     363  0.0050    0.02            TRAP      55     1.0

  132         KK  060340 COMBINE
  133         HC       2

  134         KK  060060    FROM  060340
  135         RK     289  0.0045   0.013            CIRC     5.0

  136         KK  060060 COMBINE
  137         HC       3

  138         KK  060070    FROM  060060
  139         RK     717  0.0030   0.013            CIRC     7.5

  140         KK  060070   BASIN
  141         BA   0.030
  142         LS       0      79       0       0      98       0
  143         UK      25  0.0100    0.40      15
  144         UK     197  0.0100    0.10      85
  145         RK    1248  0.0050    0.02            TRAP      59     1.0
  146         RK     675  0.0049    0.02            TRAP      55     1.0

  147         KK  060070 COMBINE
  148         HC       2

  149         KK  060080    FROM  060070
  150         RK     514  0.0106   0.013            CIRC     8.0

  151         KK  060080   BASIN
  152         BA   0.010
  153         LS       0      79       0       0      98       0
  154         UK      23  0.0100    0.40      15
  155         UK     200  0.0100    0.10      85
  156         RK     646  0.0050    0.02            TRAP      19     1.0
  157         RK     514  0.0049    0.02            TRAP      60     1.0

  158         KK  060080 COMBINE
  159         HC       2

  160         KK  060090    FROM  060080
  161         RK     417  0.0010   0.015            DEEP     7.0
```

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

 162          KK  060090   BASIN
 163          BA   0.011
 164          LS       0       79        0        0       98        0
 165          UK      20   0.0100     0.40       15
 166          UK     200   0.0100     0.10       85
 167          RK     676   0.0050     0.02             TRAP       45      1.0
 168          RK     417   0.0049     0.02             TRAP       44      1.0

 169          KK  060090 COMBINE
 170          HC       2

 171          KK  060410   BASIN
 172          BA   0.015
 173          LS       0       79        0        0       98        0
 174          UK     106   0.0100     0.33       15
 175          UK     100   0.0100     0.10       85
 176          RK     522   0.0049     0.02             TRAP       23      1.0
 177          RK     715   0.0050     0.02             TRAP       23      1.0

 178          KK  060420    FROM  060410
 179          RK     572   0.0024    0.013             CIRC      4.0

 180          KK  060090    FROM  060420
 181          RK     132   0.0045    0.013             CIRC      4.0

 182          KK  060090 COMBINE
 183          HC       2

 184          KK  060100    FROM  060090
 185          RK     305   0.0010    0.013             CIRC      8.0

 186          KK  060100   BASIN
 187          BA   0.026
 188          LS       0       79        0        0       98        0
 189          UK      20   0.0100     0.40       15
 190          UK     200   0.0100     0.10       85
 191          RK     512   0.0049     0.02             TRAP       53      1.0
 192          RK    1183   0.0050     0.02             TRAP       46      1.0

 193          KK  060100 COMBINE
 194          HC       2

 195          KK  060110    FROM  060100
 196          RK     681   0.0010    0.013             CIRC      8.0

 197          KK  060110   BASIN
 198          BA   0.030
 199          LS       0       79        0        0       98        0
 200          UK      20   0.0100     0.40       15
 201          UK     200   0.0100     0.10       85
 202          RK     573   0.0049     0.02             TRAP       41      1.0
 203          RK    1228   0.0050     0.02             TRAP       29      1.0
```

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

 204          KK  060110 COMBINE
 205          HC       2

 206          KK  060120    FROM  060110
 207          RK     859  0.0010   0.013            CIRC     8.0

 208          KK  060120   BASIN
 209          BA   0.018
 210          LS       0      79       0       0      98       0
 211          UK      20  0.0100    0.40       6
 212          UK     200  0.0100    0.10      94
 213          RK     562  0.0050    0.02            TRAP      12     1.0
 214          RK    1238  0.0049    0.02            TRAP      23     1.0

 215          KK  060120 COMBINE
 216          HC       2

 217          KK  060130    FROM  060120
 218          RK     438  0.0010   0.013            CIRC     8.0

 219          KK  060510   BASIN
 220          BA   0.025
 221          LS       0      79       0       0      98       0
 222          UK      26  0.0100    0.40      15
 223          UK     200  0.0100    0.10      85
 224          RK     424  0.0050    0.02            TRAP      38     1.0
 225          RK     930  0.0049    0.02            TRAP      53     1.0

 226          KK  060520    FROM  060510
 227          RK     587  0.0021   0.013            CIRC     3.0

 228          KK  060520   BASIN
 229          BA   0.020
 230          LS       0      79       0       0      98       0
 231          UK      20  0.0100    0.40      15
 232          UK     200  0.0100    0.10      85
 233          RK     399  0.0049    0.02            TRAP      60     1.0
 234          RK     587  0.0050    0.02            TRAP      60     1.0

 235          KK  060520 COMBINE
 236          HC       2

 237          KK  060530    FROM  060520
 238          RK     459  0.0101   0.013            CIRC     4.0

 239          KK  060530   BASIN
 240          BA   0.013
 241          LS       0      79       0       0      98       0
 242          UK      20  0.0100    0.40      15
 243          UK     200  0.0100    0.10      85
 244          RK    1261  0.0050    0.02            TRAP      60     1.0
```

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

 245          KK  060530 COMBINE
 246          HC       2

 247          KK  060540    FROM  060530
 248          RK     400  0.0101   0.013            CIRC     4.0

 249          KK  060540   BASIN
 250          BA   0.034
 251          LS       0      79       0       0      98       0
 252          UK      20  0.0100    0.40      15
 253          UK     200  0.0100    0.10      85
 254          RK    1236  0.0050    0.02            TRAP      23     1.0
 255          RK     693  0.0049    0.02            TRAP      45     1.0

 256          KK  060540 COMBINE
 257          HC       2

 258          KK  060710   BASIN
 259          BA   0.010
 260          LS       0      79       0       0      98       0
 261          UK      20  0.0100    0.40      15
 262          UK     200  0.0100    0.10      85
 263          RK     891  0.0050    0.02            TRAP      60     1.0

 264          KK  060540    FROM  060710
 265          RK     354  0.0057   0.013            CIRC     3.0

 266          KK  060540 COMBINE
 267          HC       2

 268          KK  060810   BASIN
 269          BA   0.008
 270          LS       0      79       0       0      98       0
 271          UK      32  0.0100    0.39      16
 272          UK     187  0.0100    0.10      84
 273          RK    2130  0.0050    0.02            TRAP      60     1.0

 274          KK  060540    FROM  060810
 275          RK     756  0.0020   0.013            CIRC     3.0

 276          KK  060540 COMBINE
 277          HC       2

 278          KK  060550    FROM  060540
 279          RK    1480  0.0048   0.013            CIRC     5.0

 280          KK  060550   BASIN
 281          BA   0.041
 282          LS       0      79       0       0      98       0
 283          UK      20  0.0100    0.40      15
 284          UK     200  0.0100    0.10      85
 285          RK     589  0.0049    0.02            TRAP      25     1.0
 286          RK    1438  0.0050    0.02            TRAP      46     1.0
```

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

 287          KK  060550 COMBINE
 288          HC       2

 289          KK  060910   BASIN
 290          BA   0.011
 291          LS       0      79       0       0      98       0
 292          UK      25  0.0100    0.40      15
 293          UK     200  0.0100    0.10      85
 294          RK    1459  0.0050    0.02            TRAP      75     1.0

 295          KK  060920    FROM  060910
 296          RK    1572  0.0045   0.013            CIRC     4.0

 297          KK  060920   BASIN
 298          BA   0.059
 299          LS       0      79       0       0      98       0
 300          UK      23  0.0100    0.40      15
 301          UK     196  0.0100    0.10      85
 302          RK    1397  0.0050    0.02            TRAP      60     1.0
 303          RK    1189  0.0049    0.02            TRAP      71     1.0

 304          KK  060920 COMBINE
 305          HC       2

 306          KK  060550    FROM  060920
 307          RK     650  0.0048   0.013            CIRC     6.0

 308          KK  060550 COMBINE
 309          HC       2

 310          KK  060560    FROM  060550
 311          RK     674  0.0050   0.013            CIRC     7.0
              * Basin area decreased

 312          KK  060560   BASIN
 313          BA   0.034
 314          LS       0      79       0       0      98       0
 315          UK      23  0.0100    0.40      16
 316          UK     196  0.0100    0.10      84
 317          RK     583  0.0049    0.02            TRAP      30     1.0
 318          RK    1260  0.0050    0.02            TRAP      60     1.0

 319          KK  060560 COMBINE
 320          HC       2

 321          KK  060570    FROM  060560
 322          RK     662  0.0080   0.013            CIRC     8.0
              * Basin area modified
```

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

 323          KK  060570   BASIN
 324          BA   0.059
 325          LS       0      79       0       0      98       0
 326          UK      74  0.0100    0.36      24
 327          UK     137  0.0100    0.10      76
 328          RK     563  0.0049    0.02            TRAP      38     1.0
 329          RK    2539  0.0050    0.02            TRAP      45     1.0

 330          KK  060570 COMBINE
 331          HC       2

 332          KK  060580    FROM  060570
 333          RK     650  0.0077   0.013            CIRC     8.0
              * Basin area increased per topography

 334          KK  060580   BASIN
 335          BA   0.062
 336          LS       0      79       0       0      98       0
 337          UK      29  0.0100    0.39       7
 338          UK     190  0.0100    0.10      93
 339          RK     604  0.0049    0.02            TRAP      38     1.0
 340          RK    2533  0.0050    0.02            TRAP      45     1.0

 341          KK  060580 COMBINE
 342          HC       2

 343          KK  060590    FROM  060580
 344          RK     347  0.0077   0.013            CIRC     8.0

 345          KK  060590   BASIN
 346          BA   0.022
 347          LS       0      79       0       0      98       0
 348          UK     151  0.0100    0.30      46
 349          UK      50  0.0100    0.10      54
 350          RK    2046  0.0050    0.02            TRAP      13     1.0

 351          KK  060590 COMBINE
 352          HC       2

 353          KK  060600    FROM  060590
 354          RK     255  0.0077   0.013            CIRC     8.0

 355          KK  061010   BASIN
 356          BA   0.052
 357          LS       0      79       0       0      98       0
 358          UK      56  0.0100    0.37      17
 359          UK     162  0.0100    0.10      83
 360          RK    2009  0.0050    0.02            TRAP      38     1.0
```

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


 361          KK  061020    FROM  061010
 362          RK     216  0.0049   0.017            TRAP    37.5       1

 363          KK  061110   BASIN
 364          BA   0.053
 365          LS       0      79       0       0      98       0
 366          UK      65  0.0100    0.37      15
 367          UK     148  0.0100    0.10      85
 368          RK     597  0.0050    0.02            TRAP      45     1.0
 369          RK    1273  0.0049    0.02            TRAP      53     1.0

 370          KK  061120    FROM  061110
 371          RK     269  0.0044   0.013            CIRC     1.5
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
 372          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

         (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

13       060010
              V
              V
21       060020
              .
              .
23            .      060020
              .           .
              .           .
30       060020............
              V
              V
32       060030
              .
              .
34            .      060030
              .           .
              .           .
41       060030............
              V
              V
43       060040
              .
              .
 5            .      060210
              .           V
              .           V
 .            .      060040
              .           .
              .           .
54            .           .      060040
              .           .            .
              .           .            .
61       060040........................
              V
              V
63       060050
              .
              .
65            .      060050
              .           .
              .           .
72       060050............
              V
              V
74       060060
              .
              .
76            .      060060
              .           .
              .           .
83       060060............
              .
              .
              .      060015
              .           V
              .           V
92            .      060320
              .           .
```

```
                .           .
 94             .           .      060310
                .           .          V
                .           .          V
  1             .           .      060320
                .           .          .
                .           .          .
103             .           .          .      060320
                .           .          .          .
                .           .          .          .
110             .           .      060320............
                .           .          V
                .           .          V
112             .           .      060330
                .           .          .          .
                .           .          .
114             .           .          .      060330
                .           .          .          .
                .           .          .          .
121             .           .      060330............
                .           .          V
                .           .          V
123             .           .      060340
                .           .          .
                .           .          .
125             .           .          .      060340
                .           .          .          .
                .           .          .          .
132             .           .      060340............
                .           .          V
                .           .          V
 4              .           .      060060
                .           .          .
                .           .          .
 3          060060........................
                V
                V
138         060070
                .
                .
140             .      060070
                .           .
                .           .
147         060070............
                V
                V
149         060080
                .
                .
151             .      060080
                .           .
                .           .
158         060080............
                V
                V
160         060090
                .
                .
162             .      060090
                .           .
                .           .
            060090............
                .
                .
171             .      060410
                .           V
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                .           V
178             .      060420
                .           V
                .           V
 0              .      060090
                .           .
                .           .
182       060090............
              V
              V
184       060100
              .
              .
186             .      060100
                .           .
                .           .
193       060100............
              V
              V
195       060110
              .
              .
197             .      060110
                .           .
                .           .
204       060110............
              V
              V
206       060120
              .
              .
 8              .      060120
                .           .
                .           .
 5        060120............
              V
              V
217       060130
              .
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219             .      060510
                .           V
                .           V
226             .      060520
                .           .
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228             .           .      060520
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                .           .           .
235             .      060520............
                .           V
                .           V
237             .      060530
                .           .
                .           .
239             .           .      060530
                .           .           .
                .           .           .
245             .      060530............
                .           V
                .           V
 7              .      060540
                .           .
                .           .
249             .           .      060540
                .           .           .
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256             .     060540............
                .          .
                .          .
 8              .          .     060710
                .          .          V
                .          .          V
264             .          .     060540
                .          .          .
                .          .          .
266             .     060540............
                .          .
                .          .
268             .          .     060810
                .          .          V
                .          .          V
274             .          .     060540
                .          .          .
                .          .          .
276             .     060540............
                .          V
                .          V
278             .     060550
                .          .
                .          .
280             .          .     060550
                .          .          .
                .          .          .
287             .     060550............
                .          .
                .          .
 9              .          .     060910
                .          .          V
                .          .          V
 5              .          .     060920
                .          .          .
                .          .          .
297             .          .          .     060920
                .          .          .          .
                .          .          .          .
304             .          .     060920............
                .          .          V
                .          .          V
306             .          .     060550
                .          .          .
                .          .          .
308             .     060550............
                .          V
                .          V
310             .     060560
                .          .
                .          .
312             .          .     060560
                .          .          .
                .          .          .
319             .     060560............
                .          V
                .          V
321             .     060570
                .          .
                .          .
                .          .     060570
                .          .          .
                .          .          .
330             .     060570............
                .          V
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                .          V
332             .     060580
                .          .
                .          .
 4              .          .     060580
                .          .          .
                .          .          .
341             .     060580............
                .          V
                .          V
343             .     060590
                .          .
                .          .
345             .          .     060590
                .          .          .
                .          .          .
351             .     060590............
                .          V
                .          V
353             .     060600
                .          .
                .          .
355             .          .     061010
                .          .          V
                .          .          V
361             .          .     061020
                .          .          .
                .          .          .
363             .          .          .     061110
                .          .          .          V
                .          .          .          V
 0              .          .          .     061120
```

RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 06610e.HC1

```
*************************************
                                    *
    LOOD HYDROGRAPH PACKAGE  (HEC-1)*
*             MAY   1991            *
*          VERSION 4.0.1E           *
*                                   *
*  RUN DATE  07/17/1997  TIME  08:02:14 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*    U.S. ARMY CORPS OF ENGINEERS   *
*    HYDROLOGIC ENGINEERING CENTER  *
*          609 SECOND STREET        *
*       DAVIS, CALIFORNIA 95616     *
*           (916) 756-1104          *
*                                   *
*************************************
```

```
*****************************************************************
STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
SCOTTSDALE - TEMPE - PHOENIX
*****************************************************************

Kimley-Horn and Associates, Inc.
KVL Consultants, Inc.

10-Year, 6-Hour Storm Event
1/97

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

   IT        HYDROGRAPH TIME DATA
                  NMIN          2  MINUTES IN COMPUTATION INTERVAL
                 IDATE      1   0  STARTING DATE
                 ITIME       0000  STARTING TIME
                    NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                NDDATE      1   0  ENDING DATE
                NDTIME       0958  ENDING TIME
                 ICENT         19  CENTURY MARK

            COMPUTATION INTERVAL    0.03 HOURS
                 TOTAL TIME BASE    9.97 HOURS

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


     *** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  2


     *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


     *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT
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*** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT

*** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  1

*** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT

*** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT

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*** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT

*** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  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	060010	14.	3.17	1.	1.	1.	0.01		
ROUTED TO	060020	14.	3.20	1.	1.	1.	0.01		
HYDROGRAPH AT	060020	55.	3.17	4.	3.	3.	0.03		
2 COMBINED AT	060020	69.	3.17	6.	3.	3.	0.03		
ROUTED TO	060030	68.	3.20	6.	3.	3.	0.03		
HYDROGRAPH AT	060030	25.	3.13	2.	1.	1.	0.01		
2 COMBINED AT	060030	91.	3.17	8.	5.	5.	0.04		
ROUTED TO	060040	90.	3.20	8.	5.	5.	0.04		
HYDROGRAPH AT	060210	68.	3.10	5.	3.	3.	0.03		
ROUTED TO	060040	65.	3.10	5.	3.	3.	0.03		
HYDROGRAPH AT	060040	44.	3.13	3.	2.	2.	0.02		
3 COMBINED AT	060040	185.	3.17	15.	9.	9.	0.09		
ROUTED TO	060050	184.	3.17	15.	9.	9.	0.09		
HYDROGRAPH AT	060050	71.	3.13	5.	3.	3.	0.03		
2 COMBINED AT	060050	251.	3.17	21.	13.	13.	0.12		
ROUTED TO	060060	250.	3.17	21.	13.	13.	0.12		
HYDROGRAPH AT	060060	20.	3.13	2.	1.	1.	0.01		
2 COMBINED AT	060060	270.	3.17	22.	13.	13.	0.13		
HYDROGRAPH AT	060015	8.	3.17	1.	0.	0.	0.00		
ROUTED TO	060320	8.	3.30	1.	0.	0.	0.00		
HYDROGRAPH AT	060310	50.	3.13	4.	2.	2.	0.02		
ROUTED TO	060320	50.	3.17	4.	2.	2.	0.02		
HYDROGRAPH AT	060320	121.	3.17	10.	6.	6.	0.05		
2 COMBINED AT	060320	171.	3.17	14.	8.	8.	0.08		
ROUTED TO	060330	169.	3.17	14.	8.	8.	0.08		
HYDROGRAPH AT	060330	36.	3.13	3.	2.	2.	0.02		
2 COMBINED AT	060330	204.	3.17	16.	10.	10.	0.09		
ROUTED TO	060340	202.	3.17	16.	10.	10.	0.09		
HYDROGRAPH AT	060340	21.	3.13	2.	1.	1.	0.01		

2 COMBINED AT	060340	222.	3.17	18.	11.	11.	0.10
ROUTED TO	060060	220.	3.17	18.	11.	11.	0.10
3 COMBINED AT	060060	491.	3.17	41.	25.	25.	0.24
ROUTED TO	060070	482.	3.17	41.	25.	25.	0.24
HYDROGRAPH AT	060070	65.	3.17	5.	3.	3.	0.03
2 COMBINED AT	060070	547.	3.17	46.	28.	28.	0.27
ROUTED TO	060080	541.	3.17	46.	28.	28.	0.27
HYDROGRAPH AT	060080	23.	3.13	2.	1.	1.	0.01
2 COMBINED AT	060080	564.	3.17	48.	29.	29.	0.28
ROUTED TO	060090	560.	3.20	48.	29.	29.	0.28
HYDROGRAPH AT	060090	24.	3.13	2.	1.	1.	0.01
2 COMBINED AT	060090	582.	3.20	50.	30.	30.	0.29
HYDROGRAPH AT	060410	40.	3.10	3.	2.	2.	0.01
ROUTED TO	060420	38.	3.13	3.	2.	2.	0.01
ROUTED TO	060090	38.	3.13	3.	2.	2.	0.01
2 COMBINED AT	060090	609.	3.20	52.	32.	32.	0.30
ROUTED TO	060100	609.	3.20	52.	32.	32.	0.30
HYDROGRAPH AT	060100	58.	3.17	5.	3.	3.	0.03
2 COMBINED AT	060100	662.	3.20	57.	34.	34.	0.33
ROUTED TO	060110	658.	3.20	57.	34.	34.	0.33
HYDROGRAPH AT	060110	66.	3.17	5.	3.	3.	0.03
2 COMBINED AT	060110	718.	3.20	62.	38.	38.	0.36
ROUTED TO	060120	704.	3.20	62.	38.	38.	0.36
HYDROGRAPH AT	060120	43.	3.13	3.	2.	2.	0.02
2 COMBINED AT	060120	742.	3.20	66.	40.	40.	0.38
ROUTED TO	060130	736.	3.23	66.	40.	40.	0.38
HYDROGRAPH AT	060510	56.	3.13	4.	3.	3.	0.03
ROUTED TO	060520	56.	3.17	4.	3.	3.	0.03
HYDROGRAPH AT	060520	47.	3.13	3.	2.	2.	0.02
2 COMBINED AT	060520	100.	3.13	8.	5.	5.	0.05
ROUTED TO	060530	100.	3.17	8.	5.	5.	0.05
HYDROGRAPH AT	060530	27.	3.17	2.	1.	1.	0.01
2 COMBINED AT	060530	127.	3.17	10.	6.	6.	0.06

ROUTED TO	060540	126.	3.17	10.	6.	6.	0.06
HYDROGRAPH AT	060540	77.	3.13	6.	4.	4.	0.03
2 COMBINED AT	060540	202.	3.17	16.	10.	10.	0.09
HYDROGRAPH AT	060710	22.	3.13	2.	1.	1.	0.01
ROUTED TO	060540	21.	3.17	2.	1.	1.	0.01
2 COMBINED AT	060540	224.	3.17	18.	11.	11.	0.10
HYDROGRAPH AT	060810	12.	3.27	1.	1.	1.	0.01
ROUTED TO	060540	12.	3.30	1.	1.	1.	0.01
2 COMBINED AT	060540	232.	3.17	19.	12.	12.	0.11
ROUTED TO	060550	228.	3.17	19.	12.	12.	0.11
HYDROGRAPH AT	060550	90.	3.17	7.	4.	4.	0.04
2 COMBINED AT	060550	318.	3.17	26.	16.	16.	0.15
HYDROGRAPH AT	060910	21.	3.20	2.	1.	1.	0.01
ROUTED TO	060920	21.	3.23	2.	1.	1.	0.01
HYDROGRAPH AT	060920	127.	3.17	10.	6.	6.	0.06
2 COMBINED AT	060920	144.	3.17	12.	7.	7.	0.07
ROUTED TO	060550	143.	3.20	12.	7.	7.	0.07
2 COMBINED AT	060550	457.	3.17	38.	23.	23.	0.22
ROUTED TO	060560	452.	3.20	38.	23.	23.	0.22
HYDROGRAPH AT	060560	74.	3.17	6.	4.	4.	0.03
2 COMBINED AT	060560	521.	3.17	44.	27.	27.	0.26
ROUTED TO	060570	521.	3.20	44.	27.	27.	0.26
HYDROGRAPH AT	060570	113.	3.17	10.	6.	6.	0.06
2 COMBINED AT	060570	628.	3.20	54.	33.	33.	0.31
ROUTED TO	060580	627.	3.20	54.	33.	33.	0.31
HYDROGRAPH AT	060580	136.	3.17	11.	7.	7.	0.06
2 COMBINED AT	060580	761.	3.20	65.	40.	40.	0.38
ROUTED TO	060590	759.	3.20	65.	40.	40.	0.38
HYDROGRAPH AT	060590	35.	3.10	3.	2.	2.	0.02
2 COMBINED AT	060590	783.	3.20	68.	41.	41.	0.40
ROUTED TO	060600	782.	3.20	68.	41.	41.	0.40
HYDROGRAPH AT	061010	112.	3.13	9.	5.	5.	0.05
ROUTED TO	061020	110.	3.13	9.	5.	5.	0.05

HYDROGRAPH AT	061110	125.	3.13	9.	6.	6.	0.05
ROUTED TO	061120	123.	3.13	9.	6.	6.	0.05

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
060010	MANE	1.64	14.60	189.15	1.60	2.00	14.44	190.00	1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6002E+00 OUTFLOW=0.5968E+00 BASIN STORAGE=0.1603E-02 PERCENT ERROR= 0.3

060020	MANE	0.96	14.29	191.41	1.60	2.00	14.21	192.00	1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5961E+00 EXCESS=0.0000E+00 OUTFLOW=0.5964E+00 BASIN STORAGE=0.9498E-04 PERCENT ERROR= -0.1

060020	MANE	1.64	55.45	190.34	1.61	2.00	54.88	190.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2247E+01 OUTFLOW=0.2233E+01 BASIN STORAGE=0.7726E-02 PERCENT ERROR= 0.3

060030	MANE	0.43	68.32	190.73	1.61	2.00	67.65	192.00	1.61

INUITY SUMMARY (AC-FT) - INFLOW=0.2830E+01 EXCESS=0.0000E+00 OUTFLOW=0.2830E+01 BASIN STORAGE=0.1509E-03 PERCENT ERROR= 0.0

060030	MANE	0.88	25.09	189.27	1.63	2.00	24.65	188.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9580E+00 OUTFLOW=0.9551E+00 BASIN STORAGE=0.2350E-02 PERCENT ERROR= 0.1

060040	MANE	0.41	90.76	191.15	1.61	2.00	90.20	192.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3786E+01 EXCESS=0.0000E+00 OUTFLOW=0.3788E+01 BASIN STORAGE=0.2673E-03 PERCENT ERROR= 0.0

060210	MANE	1.21	68.51	185.81	1.63	2.00	68.29	186.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2264E+01 OUTFLOW=0.2260E+01 BASIN STORAGE=0.3768E-02 PERCENT ERROR= 0.0

060040	MANE	0.34	67.82	186.82	1.63	2.00	65.37	186.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2259E+01 EXCESS=0.0000E+00 OUTFLOW=0.2260E+01 BASIN STORAGE=0.8306E-04 PERCENT ERROR= 0.0

060040	MANE	0.93	44.19	188.40	1.63	2.00	43.95	188.00	1.63

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1655E+01 OUTFLOW=0.1649E+01 BASIN STORAGE=0.3660E-02 PERCENT ERROR= 0.1

060050	MANE	0.26	184.58	190.15	1.62	2.00	184.40	190.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7697E+01 EXCESS=0.0000E+00 OUTFLOW=0.7698E+01 BASIN STORAGE=0.2596E-03 PERCENT ERROR= 0.0

060050	MANE	1.28	71.07	188.08	1.63	2.00	70.87	188.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2613E+01 OUTFLOW=0.2604E+01 BASIN STORAGE=0.5768E-02 PERCENT ERROR= 0.1

060060	MANE	0.35	250.41	190.21	1.62	2.00	250.35	190.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1031E+02 EXCESS=0.0000E+00 OUTFLOW=0.1030E+02 BASIN STORAGE=0.3185E-03 PERCENT ERROR= 0.0

060060	MANE	1.18	20.43	188.71	1.63	2.00	20.19	188.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7838E+00 OUTFLOW=0.7807E+00 BASIN STORAGE=0.1863E-02 PERCENT ERROR= 0.2

060015	MANE	1.93	7.97	189.84	1.60	2.00	7.96	190.00	1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3429E+00 OUTFLOW=0.3408E+00 BASIN STORAGE=0.1102E-02 PERCENT ERROR= 0.3

060320	MANE	2.00	7.91	197.22	1.62	2.00	7.80	198.00	1.61

INUITY SUMMARY (AC-FT) - INFLOW=0.3409E+00 EXCESS=0.0000E+00 OUTFLOW=0.3448E+00 BASIN STORAGE=0.1579E-02 PERCENT ERROR= -1.6

060310	MANE	0.93	50.72	188.23	1.61	2.00	50.35	188.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1987E+01 OUTFLOW=0.1981E+01 BASIN STORAGE=0.5135E-02 PERCENT ERROR= 0.1

060320	MANE	0.79	50.08	189.92	1.62	2.00	50.03	190.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1981E+01 EXCESS=0.0000E+00 OUTFLOW=0.1982E+01 BASIN STORAGE=0.2221E-03 PERCENT ERROR= -0.1

060320	MANE	1.27	121.90	189.48	1.63	2.00	121.10	190.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4789E+01 OUTFLOW=0.4769E+01 BASIN STORAGE=0.1289E-01 PERCENT ERROR= 0.2

060330	MANE	0.28	170.28	190.38	1.62	2.00	168.64	190.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6744E+01 EXCESS=0.0000E+00 OUTFLOW=0.6745E+01 BASIN STORAGE=0.2830E-03 PERCENT ERROR= 0.0

060330	MANE	0.79	36.64	188.88	1.63	2.00	36.29	188.00	1.63

INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1393E+01 OUTFLOW=0.1390E+01 BASIN STORAGE=0.3605E-02 PERCENT ERROR= 0.0

060340	MANE	0.15	204.09	190.26	1.62	2.00	202.13	190.00	1.62

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8137E+01 EXCESS=0.0000E+00 OUTFLOW=0.8138E+01 BASIN STORAGE=0.2019E-03 PERCENT ERROR=   0.0

          060340  MANE        0.73     20.67    188.66      1.63      2.00     20.65    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7838E+00 OUTFLOW=0.7818E+00 BASIN STORAGE=0.1667E-02 PERCENT ERROR=   0.0

          060060  MANE        0.19    221.41    190.38      1.62      2.00    219.87    190.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8922E+01 EXCESS=0.0000E+00 OUTFLOW=0.8922E+01 BASIN STORAGE=0.1717E-03 PERCENT ERROR=   0.0

          060070  MANE        0.39    487.55    190.51      1.62      2.00    481.95    190.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2036E+02 EXCESS=0.0000E+00 OUTFLOW=0.2036E+02 BASIN STORAGE=0.9150E-03 PERCENT ERROR=   0.0

          060070  MANE        0.79     65.46    189.70      1.62      2.00     65.33    190.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2613E+01 OUTFLOW=0.2598E+01 BASIN STORAGE=0.7872E-02 PERCENT ERROR=   0.3

          060080  MANE        0.27    545.83    190.54      1.62      2.00    541.46    190.00        1.63

 INUITY SUMMARY (AC-FT) - INFLOW=0.2296E+02 EXCESS=0.0000E+00 OUTFLOW=0.2296E+02 BASIN STORAGE=0.4414E-03 PERCENT ERROR=   0.0

          060080  MANE        0.94     22.88    188.60      1.63      2.00     22.61    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8709E+00 OUTFLOW=0.8682E+00 BASIN STORAGE=0.2171E-02 PERCENT ERROR=   0.1

          060090  MANE        0.40    562.44    191.05      1.63      2.00    559.85    192.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2384E+02 EXCESS=0.0000E+00 OUTFLOW=0.2384E+02 BASIN STORAGE=0.1724E-02 PERCENT ERROR=   0.0

          060090  MANE        0.62     24.80    189.03      1.63      2.00     24.43    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9580E+00 OUTFLOW=0.9549E+00 BASIN STORAGE=0.2371E-02 PERCENT ERROR=   0.1

          060410  MANE        0.72     39.77    186.02      1.63      2.00     39.74    186.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1306E+01 OUTFLOW=0.1305E+01 BASIN STORAGE=0.1807E-02 PERCENT ERROR=  -0.1

          060420  MANE        0.50     39.42    187.04      1.63      2.00     37.91    188.00        1.63

 NUITY SUMMARY (AC-FT) - INFLOW=0.1305E+01 EXCESS=0.0000E+00 OUTFLOW=0.1306E+01 BASIN STORAGE=0.5844E-04 PERCENT ERROR=   0.0

          060090  MANE        0.24     37.85    187.91      1.63      2.00     37.80    188.00        1.63
```

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1306E+01 EXCESS=0.0000E+00 OUTFLOW=0.1306E+01 BASIN STORAGE=0.1068E-04 PERCENT ERROR= 0.0

060100	MANE	0.30	608.60	192.00	1.63	2.00	608.60	192.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2611E+02 EXCESS=0.0000E+00 OUTFLOW=0.2611E+02 BASIN STORAGE=0.7485E-03 PERCENT ERROR= 0.0

060100	MANE	1.26	58.13	189.78	1.63	2.00	57.74	190.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2264E+01 OUTFLOW=0.2255E+01 BASIN STORAGE=0.6041E-02 PERCENT ERROR= 0.1

060110	MANE	0.41	659.86	192.76	1.63	2.00	657.67	192.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2837E+02 EXCESS=0.0000E+00 OUTFLOW=0.2838E+02 BASIN STORAGE=0.1805E-02 PERCENT ERROR= 0.0

060110	MANE	1.16	67.60	189.10	1.63	2.00	66.44	190.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2613E+01 OUTFLOW=0.2603E+01 BASIN STORAGE=0.6171E-02 PERCENT ERROR= 0.1

060120	MANE	0.46	716.73	192.99	1.63	2.00	703.77	192.00	1.63

INUITY SUMMARY (AC-FT) - INFLOW=0.3098E+02 EXCESS=0.0000E+00 OUTFLOW=0.3099E+02 BASIN STORAGE=0.2494E-02 PERCENT ERROR= 0.0

060120	MANE	1.25	44.02	188.68	1.74	2.00	43.25	188.00	1.74

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1678E+01 OUTFLOW=0.1672E+01 BASIN STORAGE=0.3884E-02 PERCENT ERROR= 0.1

060130	MANE	0.33	740.64	192.89	1.63	2.00	736.23	194.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3266E+02 EXCESS=0.0000E+00 OUTFLOW=0.3266E+02 BASIN STORAGE=0.1341E-02 PERCENT ERROR= 0.0

060510	MANE	1.12	56.45	189.10	1.63	2.00	56.40	188.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2177E+01 OUTFLOW=0.2168E+01 BASIN STORAGE=0.5564E-02 PERCENT ERROR= 0.2

060520	MANE	0.50	56.08	189.31	1.63	2.00	55.56	190.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2168E+01 EXCESS=0.0000E+00 OUTFLOW=0.2169E+01 BASIN STORAGE=0.1464E-03 PERCENT ERROR= 0.0

060520	MANE	0.83	46.63	188.03	1.63	2.00	46.61	188.00	1.63

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1742E+01 OUTFLOW=0.1737E+01 BASIN STORAGE=0.3986E-02 PERCENT ERROR= 0.1

060530	MANE	0.22	99.99	188.56	1.63	2.00	99.61	190.00	1.63

```
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3906E+01 EXCESS=0.0000E+00 OUTFLOW=0.3906E+01 BASIN STORAGE=0.9087E-04 PERCENT ERROR=   0.0

          060530  MANE        2.00     27.26    189.90      1.62      2.00     27.19    190.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1132E+01 OUTFLOW=0.1125E+01 BASIN STORAGE=0.3369E-02 PERCENT ERROR=   0.3

          060540  MANE        0.22    126.45    190.10      1.63      2.00    126.34    190.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5034E+01 EXCESS=0.0000E+00 OUTFLOW=0.5034E+01 BASIN STORAGE=0.1028E-03 PERCENT ERROR=   0.0

          060540  MANE        0.76     77.91    188.93      1.63      2.00     76.74    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2961E+01 OUTFLOW=0.2950E+01 BASIN STORAGE=0.7255E-02 PERCENT ERROR=   0.1

          060710  MANE        1.53     21.74    189.65      1.63      2.00     21.60    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8709E+00 OUTFLOW=0.8668E+00 BASIN STORAGE=0.2140E-02 PERCENT ERROR=   0.2

          060540  MANE        0.32     21.58    188.68      1.63      2.00     21.48    190.00        1.63

 INUITY SUMMARY (AC-FT) - INFLOW=0.8667E+00 EXCESS=0.0000E+00 OUTFLOW=0.8667E+00 BASIN STORAGE=0.2879E-04 PERCENT ERROR=   0.0

          060810  MANE        2.00     12.39    196.08      1.60      2.00     12.36    196.00        1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6913E+00 OUTFLOW=0.6838E+00 BASIN STORAGE=0.4545E-02 PERCENT ERROR=   0.4

          060540  MANE        0.98     12.28    198.63      1.60      2.00     12.28    198.00        1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6837E+00 EXCESS=0.0000E+00 OUTFLOW=0.6837E+00 BASIN STORAGE=0.1631E-03 PERCENT ERROR=   0.0

          060550  MANE        0.62    230.58    191.11      1.63      2.00    227.63    190.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9538E+01 EXCESS=0.0000E+00 OUTFLOW=0.9544E+01 BASIN STORAGE=0.9064E-03 PERCENT ERROR=  -0.1

          060550  MANE        1.33     91.12    189.17      1.63      2.00     89.90    190.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3570E+01 OUTFLOW=0.3555E+01 BASIN STORAGE=0.9416E-02 PERCENT ERROR=   0.2

          060910  MANE        2.00     21.03    191.50      1.62      2.00     20.89    192.00        1.62

 INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9580E+00 OUTFLOW=0.9510E+00 BASIN STORAGE=0.3668E-02 PERCENT ERROR=   0.3

          060920  MANE        1.13     20.74    194.43      1.62      2.00     20.64    194.00        1.62
```

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9503E+00 EXCESS=0.0000E+00 OUTFLOW=0.9506E+00 BASIN STORAGE=0.2184E-03 PERCENT ERROR= -0.1

060920	MANE	1.16	127.44	189.93	1.62	2.00	127.43	190.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5138E+01 OUTFLOW=0.5105E+01 BASIN STORAGE=0.1703E-01 PERCENT ERROR= 0.3

060550	MANE	0.41	143.78	191.02	1.62	2.00	143.19	192.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6053E+01 EXCESS=0.0000E+00 OUTFLOW=0.6053E+01 BASIN STORAGE=0.3184E-03 PERCENT ERROR= 0.0

060560	MANE	0.36	455.86	190.69	1.62	2.00	452.07	192.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1915E+02 EXCESS=0.0000E+00 OUTFLOW=0.1915E+02 BASIN STORAGE=0.7245E-03 PERCENT ERROR= 0.0

060560	MANE	1.37	75.03	189.43	1.61	2.00	74.14	190.00	1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2938E+01 OUTFLOW=0.2923E+01 BASIN STORAGE=0.7873E-02 PERCENT ERROR= 0.2

060570	MANE	0.32	521.02	190.75	1.62	2.00	520.69	192.00	1.62

'INUITY SUMMARY (AC-FT) - INFLOW=0.2208E+02 EXCESS=0.0000E+00 OUTFLOW=0.2208E+02 BASIN STORAGE=0.6447E-03 PERCENT ERROR= 0.0

060570	MANE	2.00	113.26	189.93	1.51	2.00	113.04	190.00	1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4778E+01 OUTFLOW=0.4756E+01 BASIN STORAGE=0.1443E-01 PERCENT ERROR= 0.1

060580	MANE	0.23	626.90	191.97	1.60	2.00	626.89	192.00	1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2684E+02 EXCESS=0.0000E+00 OUTFLOW=0.2684E+02 BASIN STORAGE=0.7655E-03 PERCENT ERROR= 0.0

060580	MANE	2.00	137.72	191.18	1.72	2.00	135.95	190.00	1.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5735E+01 OUTFLOW=0.5700E+01 BASIN STORAGE=0.1882E-01 PERCENT ERROR= 0.3

060590	MANE	0.11	759.84	192.07	1.62	2.00	759.47	192.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3255E+02 EXCESS=0.0000E+00 OUTFLOW=0.3255E+02 BASIN STORAGE=0.4806E-03 PERCENT ERROR= 0.0

060590	MANE	2.00	35.36	186.17	1.23	2.00	35.00	186.00	1.23

'NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1453E+01 OUTFLOW=0.1445E+01 BASIN STORAGE=0.5441E-02 PERCENT ERROR= 0.2

060600	MANE	0.08	782.54	192.06	1.60	2.00	782.20	192.00	1.60

```
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3400E+02 EXCESS=0.0000E+00 OUTFLOW=0.3400E+02 BASIN STORAGE=0.3689E-03 PERCENT ERROR=   0.0

          061010  MANE        1.72    112.30    188.99      1.60      2.00    112.11    188.00        1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4458E+01 OUTFLOW=0.4436E+01 BASIN STORAGE=0.9608E-02 PERCENT ERROR=   0.3

          061020  MANE        0.17    112.00    188.40      1.60      2.00    110.34    188.00        1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4428E+01 EXCESS=0.0000E+00 OUTFLOW=0.4428E+01 BASIN STORAGE=0.5821E-03 PERCENT ERROR=   0.0

          061110  MANE        1.17    124.88    187.33      1.63      2.00    124.66    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4615E+01 OUTFLOW=0.4600E+01 BASIN STORAGE=0.9776E-02 PERCENT ERROR=   0.1

          061120  MANE        0.27    123.97    188.33      1.63      2.00    123.43    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4601E+01 EXCESS=0.0000E+00 OUTFLOW=0.4601E+01 BASIN STORAGE=0.9014E-04 PERCENT ERROR=   0.0


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

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 07610E.HC1

```
*************************************
*                                   *
  FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
             MAY   1991             *
*          VERSION 4.0.1E           *
*                                   *
*  RUN DATE  02/18/1997  TIME  09:28:59 *
*                                   *
*************************************
```

```
*************************************
*                                   *
*   U.S. ARMY CORPS OF ENGINEERS    *
*   HYDROLOGIC ENGINEERING CENTER   *
*         609 SECOND STREET         *
*      DAVIS, CALIFORNIA 95616      *
*          (916) 756-1104           *
*                                   *
*************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

```
:::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::
:::                                   :::
:::  Full Microcomputer Implementation :::
:::                by                 :::
:::        Haestad Methods, Inc.      :::
:::                                   :::
:::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              *
              * Combination of KVL basins 07 and 21 with the addition of routing reaches
              * across Thomas Road from north to south.
              *
              * I.E. BASIN 07 and 21 ARE COMBINED!!!!!!
              *
  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    1/97
              *
              *
              *
              *
              *DIAGRAM
 11           IT       2                     300
 12           IO       5
              *
              * Changed 070010 basin parameters to reflect new subbasin delineations
              *

 13           KK  070010   BASIN
 14           BA   0.009
 15           PH    0.00     0.00      0.5    0.97    1.61    1.76    1.86    2.05
 16           LS       0       88        0       0      98       0
 17           UK     300   0.0100     0.20      99
 18           UK     100   0.0100     0.10       1
 19           RK    1200    0.042     0.03            TRAP       2     3.5

 20           KK  070020    FROM  070010
 21           RK     178   0.0131    0.013            CIRC     1.0

 22           KK  070030    FROM  070020
 23           RK     520   0.0146    0.025            TRAP     9.0       1

 24           KK  070030   BASIN
 25           BA   0.004
 26           LS       0       85        0       0      98       0
 27           UK     150   0.0100     0.30      65
 28           UK      50   0.0100     0.10      35
 29           RK     522   0.0146     0.03            TRAP       2     3.5

 30           KK  070030 COMBINE
 31           HC       2
```

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

 32           KK  070040    FROM  070030
 33           RK     177  0.0146   0.017            TRAP    54.8       1
              *
              * Add basin 070209
              *

 34           KK  070209   BASIN
 35           BA   0.018
 36           LS       0      87       0       0      98       0
 37           UK     300  0.0100    0.20      99
 38           UK     100  0.0100    0.10       1
 39           RK    1200   0.252    0.03            TRAP       2     3.5

 40           KK  070210    FROM  070209
 41           RK     750   0.252   0.013            TRAP      10       1
              *
              * Changed basin 070210 parameters to reflect new subbasin delineations
              *

 42           KK  070210   BASIN
 43           BA   0.008
 44           LS       0      87       0       0      98       0
 45           UK     300  0.0100    0.20      99
 46           UK     100  0.0100    0.10       1
 47           RK     600   0.043    0.03            TRAP       2     3.5

 48           KK  070210 COMBINE
 49           HC       2

 50           KK  070220    FROM  070210
 51           RK     164  0.0131   0.013            CIRC     1.0

 52           KK  070040    FROM  070220
 53           RK     723  0.0146   0.017            TRAP    54.8       1

 54           KK  070040   BASIN
 55           BA   0.006
 56           LS       0      86       0       0      98       0
 57           UK     181  0.0100    0.28      72
 58           UK      60  0.0100    0.10      28
 59           RK    1946  0.0146    0.02            TRAP      30     1.0

 60           KK  070040 COMBINE
 61           HC       3

 62           KK  070050    FROM  070040
 63           RK     878  0.0146   0.025            TRAP    20.0     1.0

 64           KK  070050   BASIN
 65           BA   0.018
 66           LS       0      86       0       0      98       0
 67           UK     150  0.0100    0.30      65
 68           UK      50  0.0100    0.10      35
 69           RK     290  0.0058    0.02            TRAP      11     1.0
```

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

  70          RK     981  0.0146    0.02            TRAP      11     1.0

  71          KK  070050 COMBINE
  72          HC       2

  73          KK  070060    FROM  070050
  74          RK     872  0.0058   0.025            TRAP     1.0     1.0

  75          KK  070310   BASIN
  76          BA   0.023
  77          LS       0      86       0       0      98       0
  78          UK     150  0.0100    0.30      65
  79          UK      50  0.0100    0.10      35
  80          RK     278  0.0058    0.02            TRAP      11     1.0
  81          RK     986  0.0146    0.02            TRAP      11     1.0

  82          KK  070060    FROM  070310
  83          RK     745  0.0058   0.025            TRAP     1.0     1.0

  84          KK  070060   BASIN
  85          BA   0.020
  86          LS       0      86       0       0      98       0
  87          UK     150  0.0100    0.30      65
  88          UK      50  0.0100    0.10      35
  89          RK    1096  0.0058    0.03            TRAP       2     1.0

  90          KK  070060 COMBINE
  91          HC       3

  92          KK  070070    FROM  070060
  93          RK     726  0.0146   0.025            TRAP    30.0     1.0

  94          KK  070070   BASIN
  95          BA   0.032
  96          LS       0      86       0       0      98       0
  97          UK     150  0.0100    0.30      65
  98          UK      50  0.0100    0.10      35
  99          RK    1209  0.0146    0.03            TRAP       2     1.0

 100          KK  070070 COMBINE
 101          HC       2
              *
              * Moved concentration point 80 from NW corner of subbasin 070080 to the culvert
              * crossing location - changed routing parameters accordingly
              *

 102          KK  070080    FROM  070070
 103          RK     450  0.0133   0.017            TRAP    60.0       1

 104          KK  070080   BASIN
 105          BA   0.021
 106          LS       0      83       0       0      98       0
 107          UK      29  0.0100    0.39       9
 108          UK     189  0.0100    0.10      91
 109          RK    1257  0.0058    0.02            TRAP      30     1.0
```

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

 110          KK  070080 COMBINE
 111          HC       2

 112          KK  210110    FROM  070080
 113          RK     800   0.001   0.017            TRAP    30.0       1

 114          KK  210110   BASIN
 115          BA   0.010
 116          LS       0      80       0       0      98       0
 117          UK      69  0.0100    0.36      14
 118          UK     143  0.0100    0.10      86
 119          RK    1449  0.0020    0.02            TRAP      38     1.0

 120          KK  210110 COMBINE
 121          HC       2

 122          KK  210120    FROM  210110
 123          RK     502  0.0020   0.017            TRAP    49.5       1
              *
              * Add basin 070508
              *

 124          KK  070508   BASIN
 125          BA   0.008
 126          LS       0      85       0       0      98       0
 127          UK     300  0.0100    0.20      99
 128          UK     100  0.0100    0.10       1
 129          RK     600   0.048    0.03            TRAP       9     1.0

 130          KK  070509    FROM  070508
 131          RK      83  0.0146   0.017            TRAP    60.0       1

 132          KK  070510    FROM  070509
 133          RK    2200   0.016    0.02            TRAP       9     1.0

 134          KK  070510   BASIN
 135          BA   0.059
 136          LS       0      85       0       0      98       0
 137          UK     151  0.0100    0.30      65
 138          UK      50  0.0100    0.10      35
 139          RK    2139  0.0146    0.03            TRAP       2     3.0

 140          KK  070510 COMBINE
 141          HC       2

 142          KK  070090    FROM  070510
 143          RK     725  0.0146   0.025            TRAP     9.0       1

 144          KK  070090   BASIN
 145          BA   0.014
 146          LS       0      86       0       0      98       0
 147          UK     136  0.0100    0.31      42
 148          UK      66  0.0100    0.10      58
 149          RK     667  0.0058    0.02            TRAP      30     1.0
```

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


 150          KK  070090 COMBINE
 151          HC       2
              *
              * Route flow across Thomas Rd from 070090 to 210120
              * BEGIN BASIN 21 SUB-BASINS:
              *

 152          KK  210120    FROM  070090
 153          RK     942   0.003   0.017            TRAP    60.0       1

 154          KK  210120   BASIN
 155          BA   0.032
 156          LS       0      84       0       0      98       0
 157          UK      63  0.0100    0.37      20
 158          UK     150  0.0100    0.10      80
 159          RK    1408  0.0032    0.02            TRAP      60     1.0

 160          KK  210120 COMBINE
 161          HC       3

 162          KK  210030    FROM  210120
 163          RK    1181  0.0020   0.017            TRAP    49.5       1

 164          KK  210210   BASIN
 165          BA   0.037
 166          LS       0      79       0       0      98       0
 167          UK     143  0.0100    0.31      62
 168          UK      58  0.0100    0.10      38
 169          RK     469  0.0020    0.02            TRAP      38     1.0
 170          RK    1954  0.0032    0.02            TRAP      38     1.0

 171          KK  210220    FROM  210210
 172          RK     723  0.0032   0.017            TRAP    56.3       1

 173          KK  210220   BASIN
 174          BA   0.012
 175          LS       0      79       0       0      98       0
 176          UK     149  0.0100    0.30      65
 177          UK      51  0.0100    0.10      35
 178          RK     728  0.0032    0.02            TRAP      45     1.0

 179          KK  210220 COMBINE
 180          HC       2

 181          KK  210030    FROM  210220
 182          RK     719  0.0020   0.017            TRAP    49.5       1

 183          KK  070410   BASIN
 184          BA   0.011
 185          LS       0      84       0       0      98       0
 186          UK     144  0.0100    0.32      44
 187          UK     121  0.0100    0.10      56
 188          RK    1816  0.0146    0.02            TRAP      23     1.0
```

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

 189          KK  070420    FROM  070410
 190          RK     183  0.0058   0.017            TRAP    52.5       1

 191          KK  070420   BASIN
 192          BA   0.003
 193          LS       0      79       0       0      98       0
 194          UK     177  0.0100    0.31      25
 195          UK     200  0.0100    0.10      75
 196          RK    1046  0.0058    0.02            TRAP      49     1.0

 197          KK  070420 COMBINE
 198          HC       2
              *
              * Route flow from 070420 across Thomas Rd to 210010
              *

 199          KK  210010    FROM  070420
 200          RK    1350  0.0037   0.017            TRAP    30.0       1

 201          KK  210010   BASIN
 202          BA   0.026
 203          LS       0      79       0       0      98       0
 204          UK      94  0.0100    0.34      26
 205          UK     116  0.0100    0.10      74
 206          RK    1046  0.0032    0.02            TRAP      38     1.0
 207          RK    2498  0.0020    0.02            TRAP      45     1.0

 208          KK  210010 COMBINE
 209          HC       2

 210          KK  210020    FROM  210010
 211          RK     852  0.0020   0.017            TRAP    45.0       1

 212          KK  210020   BASIN
 213          BA   0.032
 214          LS       0      79       0       0      98       0
 215          UK     150  0.0100    0.30      65
 216          UK      50  0.0100    0.10      35
 217          RK     298  0.0020    0.02            TRAP      34     1.0
 218          RK    1213  0.0032    0.02            TRAP      45     1.0

 219          KK  210020 COMBINE
 220          HC       2

 221          KK  210030    FROM  210020
 222          RK     711  0.0032   0.017            TRAP      45       1

 223          KK  210030   BASIN
 224          BA   0.064
 225          LS       0      79       0       0      98       0
 226          UK     149  0.0100    0.30      62
 227          UK      51  0.0100    0.10      38
 228          RK    1865  0.0020    0.02            TRAP      38     1.0
```

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

 229          KK  210030 COMBINE
 230          HC       4

 231          KK  210040    FROM  210030
 232          RK     368  0.0032   0.017            TRAP    45.0       1

 233          KK  210310   BASIN
 234          BA   0.058
 235          LS       0      79       0       0      98       0
 236          UK     122  0.0100    0.32      49
 237          UK      83  0.0100    0.10      51
 238          RK    2187  0.0020    0.02            TRAP      45     1.0

 239          KK  210320    FROM  210310
 240          RK     191  0.0032   0.025            TRAP     1.0     1.0
              *
              * Changed 070610 basin parameters to reflect new subbasin delineations
              *

 241          KK  070610   BASIN
 242          BA   0.007
 243          LS       0      88       0       0      98       0
 244          UK     300  0.0100    0.20      99
 245          UK     100  0.0100    0.10       1
 246          RK     500   0.054    0.03            TRAP       2     3.5

 247          KK  070620    FROM  070610
 248          RK      83  0.0146   0.017            TRAP    60.0       1

 249          KK  070100    FROM  070620
 250          RK    2833  0.0146   0.025            TRAP     9.0       1

 251          KK  070100   BASIN
 252          BA   0.046
 253          LS       0      85       0       0      98       0
 254          UK     149  0.0100    0.30      57
 255          UK      53  0.0100    0.10      43
 256          RK     942  0.0058    0.02            TRAP      60     1.0
 257          RK    2830  0.0146    0.03            TRAP       2     3.0

 258          KK  070100 COMBINE
 259          HC       2

 260          KK  070110    FROM  070100
 261          RK     492  0.0058   0.017            TRAP    60.0       1

 262          KK  070110   BASIN
 263          BA   0.008
 264          LS       0      85       0       0      98       0
 265          UK     150   0.010    0.30      48
 266          UK      50  0.0100    0.10      52
 267          RK     784   0.013    0.03            TRAP       2     3.0
 268          RK     492  0.0058    0.02            TRAP      60     1.0
```

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

 269          KK  070110 COMBINE
 270          HC       2

 271          KK  070120    FROM  070110
 272          RK     713  0.0058   0.017            TRAP    60.0       1
              *
              * Changed basin 070710 to basin 070808 and parameters to reflect new subbasin
              * delineations
              *

 273          KK  070808   BASIN
 274          BA   0.017
 275          LS       0      88       0       0      98       0
 276          UK     300  0.0100    0.20      99
 277          UK     100  0.0100    0.10       1
 278          RK    1600   0.214    0.03            TRAP       2     3.5

 279          KK  070809 FROM  070808
 280          RK      89  0.0146   0.017            TRAP    60.0       1

 281          KK  070810    FROM  070809
 282          RK    3005  0.0146   0.025            TRAP     9.0       1
              *
              * Changed 070810 basin parameters to reflect new subbasin delineations
              *

 283          KK  070810   BASIN
 284          BA   0.041
 285          LS       0      85       0       0      98       0
 286          UK     150  0.0100    0.30      65
 287          UK      50  0.0100    0.10      35
 288          RK    2400   0.020    0.03            TRAP       2     3.0

 289          KK  070810
 290          HC       2

 291          KK  070820    FROM  070810
 292          RK     106  0.0058   0.017            TRAP    60.0       1

 293          KK  070730   BASIN
 294          BA   0.032
 295          LS       0      85       0       0      98       0
 296          UK     152  0.0100    0.30      63
 297          UK      51  0.0100    0.10      37
 298          RK     499   0.012    0.02            TRAP      19     1.0
 299          RK    1550   0.012    0.03            TRAP       2     3.0

 300          KK  070740    FROM  070730
 301          RK     133  0.0058   0.017            TRAP    60.0       1
              *
              * Added basin 070908
              *
```

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

 302          KK  070908   BASIN
 303          BA   0.004
 304          LS       0      85       0       0      98       0
 305          UK     300  0.0100    0.20      99
 306          UK     100  0.0100    0.10       1
 307          RK     300   0.048    0.03            TRAP       5     3.0

 308          KK  070909    FROM  070908
 309          RK      83  0.0146   0.017            TRAP      60       1

 310          KK  070910    FROM  070909
 311          RK    1600  0.0275    0.02            TRAP    30.0       1

 312          KK  070910   BASIN
 313          BA   0.040
 314          LS       0      85       0       0      98       0
 315          UK     155  0.0100    0.30      66
 316          UK      52  0.0100    0.10      34
 317          RK    1500   0.022    0.03            TRAP       2     3.0
 318          RK    1091   0.022    0.03            TRAP       2     3.0

 319          KK  070910
 320          HC       2

 321          KK  070920    FROM  070910
 322          RK     113  0.0058   0.017            TRAP    60.0       1
              *
              * Changed 0701010 parameters to reflect new subbasin delineations
              *

 323          KK  071010   BASIN
 324          BA   0.004
 325          LS       0      87       0       0      98       0
 326          UK     300  0.0100    0.20      99
 327          UK     100  0.0100    0.10       1
 328          RK     550   0.034    0.03            TRAP       2     3.5

 329          KK  071020    FROM  071010
 330          RK     134  0.0146   0.017            TRAP    60.0       1

 331          KK  071030    FROM  071020
 332          RK     476  0.0146   0.025            TRAP     9.0       1

 333          KK  071030   BASIN
 334          BA   0.007
 335          LS       0      85       0       0      98       0
 336          UK     175  0.0100    0.28      71
 337          UK      58  0.0100    0.10      29
 338          RK     477   0.018    0.03            TRAP       2     3.0
```

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

 339          KK  071030 COMBINE
 340          HC       2

 341          KK  071040    FROM  071030
 342          RK     104  0.0058   0.017            TRAP    60.0       1
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
 343          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

 .      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

13      070010
             V
             V
20      070020
             V
             V
22      070030
             .
             .
24           .      070030
             .           .
             .           .
30      070030............
             V
             V
32      070040
             .
             .
34           .      070209
             .           V
             .           V
40           .      070210
             .           .
             .           .
 2           .           .      070210
             .           .           .
             .           .           .
 3           .      070210............
             .           V
             .           V
50           .      070220
             .           V
             .           V
52           .      070040
             .           .
             .           .
54           .           .      070040
             .           .           .
             .           .           .
60      070040........................
             V
             V
62      070050
             .
             .
64           .      070050
             .           .
             .           .
71      070050............
             V
             V
73      070060
             .
             .
             .      070310
             .           V
             .           V
82           .      070060
             .           .
```

```
                .           .
 84             .           .      070060
                .           .           .
                .           .           .
  0       070060.......................
                V
                V
 92       070070
                .
                .
 94             .      070070
                .           .
                .           .
100       070070............
                V
                V
102       070080
                .
                .
104             .      070080
                .           .
                .           .
110       070080............
                V
                V
112       210110
                .
                .
114             .      210110
                .           .
                .           .
  0       210110............
                V
                V
  2       210120
                .
                .
124             .      070508
                .           V
                .           V
130             .      070509
                .           V
                .           V
132             .      070510
                .           .
                .           .
134             .           .      070510
                .           .           .
                .           .           .
140             .      070510............
                .           V
                .           V
142             .      070090
                .           .
                .           .
144             .           .      070090
                .           .           .
                .           .           .
150             .      070090............
                .           V
                .           V
  0             .      210120
                .           .
                .           .
154             .           .      210120
                .           .           .
```

```
                .          .          .
160       210120.......................
              V
              V
  2       210030
              .
              .
164           .      210210
              .           V
              .           V
171           .      210220
              .           .
              .           .
173           .           .      210220
              .           .           .
              .           .           .
179           .      210220............
              .           V
              .           V
181           .      210030
              .           .
              .           .
183           .           .      070410
              .           .           V
              .           .           V
189           .           .      070420
              .           .           .
              .           .           .
191           .           .           .      070420
              .           .           .           .
              .           .           .           .
  7           .           .      070420............
              .           .           V
              .           .           V
-99           .           .      210010
              .           .           .
              .           .           .
201           .           .           .      210010
              .           .           .           .
              .           .           .           .
208           .           .      210010............
              .           .           V
              .           .           V
210           .           .      210020
              .           .           .
              .           .           .
212           .           .           .      210020
              .           .           .           .
              .           .           .           .
219           .           .      210020............
              .           .           V
              .           .           V
221           .           .      210030
              .           .           .
              .           .           .
223           .           .           .      210030
              .           .           .           .
              .           .           .           .
229       210030.......................................
              V
              V
          210040
              .
              .
233           .      210310
              .           V
```

```
                 .          V
239              .     210320
                 .          .
                 .          .
1                .          .     070610
                 .          .          V
                 .          .          V
247              .          .     070620
                 .          .          V
                 .          .          V
249              .          .     070100
                 .          .          .
                 .          .          .
251              .          .          .     070100
                 .          .          .          ..
                 .          .          .          .
258              .          .     070100............
                 .          .          V
                 .          .          V
260              .          .     070110
                 .          .          .
                 .          .          .
262              .          .          .     070110
                 .          .          .          .
                 .          .          .          .
269              .          .     070110............
                 .          .          V
                 .          .          V
271              .          .     070120
                 .          .          .
                 .          .          .
.3               .          .          .     070808
                 .          .          .          V
                 .          .          .          V
.9               .          .          .     070809
                 .          .          .          V
                 .          .          .          V
281              .          .          .     070810
                 .          .          .          .
                 .          .          .          .
283              .          .          .          .     070810
                 .          .          .          .          .
                 .          .          .          .          .
289              .          .          .     070810............
                 .          .          .          V
                 .          .          .          V
291              .          .          .     070820
                 .          .          .          .
                 .          .          .          .
293              .          .          .          .     070730
                 .          .          .          .          V
                 .          .          .          .          V
300              .          .          .          .     070740
                 .          .          .          .          .
                 .          .          .          .          .
302              .          .          .          .          .     070908
                 .          .          .          .          .          V
                 .          .          .          .          .          V
308              .          .          .          .          .     070909
                 .          .          .          .          .          V
                 .          .          .          .          .          V
1                .          .          .          .          .     070910
                 .          .          .          .          .          .
                 .          .          .          .          .          .
312              .          .          .          .          .          .     070910
                 .          .          .          .          .          .          .
```

```
                .         .         .         .         .         .         .
319             .         .         .         .         .   070910............
                .         .         .         .         .         V
                .         .         .         .         .         V
  1             .         .         .         .         .   070920
                .         .         .         .         .         .
                .         .         .         .         .         .
323             .         .         .         .         .         .   071010
                .         .         .         .         .         .         V
                .         .         .         .         .         .         V
329             .         .         .         .         .         .   071020
                .         .         .         .         .         .         V
                .         .         .         .         .         .         V
331             .         .         .         .         .         .   071030
                .         .         .         .         .         .         .
                .         .         .         .         .         .         .
333             .         .         .         .         .         .         .         071030
                .         .         .         .         .         .         .             .
                .         .         .         .         .         .         .             .
339             .         .         .         .         .         .   071030............
                .         .         .         .         .         .         V
                .         .         .         .         .         .         V
341             .         .         .         .         .         .   071040
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: 07610E.HC1

```
*************************************                    *************************************
                                    *                    *                                   *
  FLOOD HYDROGRAPH PACKAGE  (HEC-1) *                    *   U.S. ARMY CORPS OF ENGINEERS    *
*             MAY   1991            *                    *   HYDROLOGIC ENGINEERING CENTER   *
*          VERSION 4.0.1E           *                    *         609 SECOND STREET         *
*                                   *                    *      DAVIS, CALIFORNIA 95616      *
* RUN DATE  02/18/1997  TIME  09:28:59 *                 *          (916) 756-1104           *
*                                   *                    *                                   *
*****************************************                *************************************
```

```
                    ***************************************************************************
                    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
                    SCOTTSDALE - TEMPE - PHOENIX
                    ***************************************************************************

                    Kimley-Horn and Associates, Inc.
                    KVL Consultants, Inc.

                    10-Year, 6-Hour Storm Event
                    1/97

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

   IT           HYDROGRAPH TIME DATA
                       NMIN           2  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        0958  ENDING TIME
                     ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL    0.03 HOURS
                      TOTAL TIME BASE    9.97 HOURS

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

        *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


        *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


        *** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  1
```

```
*** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  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	070010	7.	3.43	1.	1.	1.	0.01		
ROUTED TO	070020	6.	3.47	1.	1.	1.	0.01		
ROUTED TO	070030	6.	3.47	1.	1.	1.	0.01		
HYDROGRAPH AT	070030	5.	3.07	1.	0.	0.	0.00		
2 COMBINED AT	070030	9.	3.43	1.	1.	1.	0.01		
ROUTED TO	070040	9.	3.43	1.	1.	1.	0.01		
HYDROGRAPH AT	070209	12.	3.47	2.	1.	1.	0.02		
ROUTED TO	070210	12.	3.47	2.	1.	1.	0.02		
HYDROGRAPH AT	070210	5.	3.47	1.	0.	0.	0.01		
2 COMBINED AT	070210	17.	3.47	3.	2.	2.	0.03		
ROUTED TO	070220	17.	3.47	3.	2.	2.	0.03		
ROUTED TO	070040	17.	3.50	3.	2.	2.	0.03		
HYDROGRAPH AT	070040	5.	3.20	1.	0.	0.	0.01		
3 COMBINED AT	070040	29.	3.47	5.	3.	3.	0.05		
ROUTED TO	070050	29.	3.50	5.	3.	3.	0.05		
HYDROGRAPH AT	070050	24.	3.07	2.	1.	1.	0.02		
2 COMBINED AT	070050	40.	3.43	7.	4.	4.	0.06		
ROUTED TO	070060	40.	3.47	7.	4.	4.	0.06		
HYDROGRAPH AT	070310	30.	3.07	3.	2.	2.	0.02		
ROUTED TO	070060	30.	3.10	3.	2.	2.	0.02		
HYDROGRAPH AT	070060	25.	3.10	3.	2.	2.	0.02		
3 COMBINED AT	070060	84.	3.10	13.	8.	8.	0.11		
ROUTED TO	070070	83.	3.13	13.	8.	8.	0.11		
HYDROGRAPH AT	070070	42.	3.07	4.	3.	3.	0.03		
2 COMBINED AT	070070	118.	3.13	17.	10.	10.	0.14		
ROUTED TO	070080	118.	3.13	17.	10.	10.	0.14		
HYDROGRAPH AT	070080	52.	3.13	4.	2.	2.	0.02		
2 COMBINED AT	070080	170.	3.13	21.	13.	13.	0.16		
ROUTED TO	210110	168.	3.17	21.	12.	12.	0.16		

HYDROGRAPH AT	210110	19.	3.20	2.	1.	1.	0.01
2 COMBINED AT	210110	187.	3.17	22.	14.	14.	0.17
ROUTED TO	210120	183.	3.17	22.	14.	14.	0.17
HYDROGRAPH AT	070508	4.	3.50	1.	0.	0.	0.01
ROUTED TO	070509	4.	3.50	1.	0.	0.	0.01
ROUTED TO	070510	4.	3.60	1.	0.	0.	0.01
HYDROGRAPH AT	070510	73.	3.10	7.	4.	4.	0.06
2 COMBINED AT	070510	73.	3.10	8.	5.	5.	0.07
ROUTED TO	070090	71.	3.10	8.	5.	5.	0.07
HYDROGRAPH AT	070090	28.	3.07	2.	1.	1.	0.01
2 COMBINED AT	070090	98.	3.10	10.	6.	6.	0.08
ROUTED TO	210120	96.	3.13	10.	6.	6.	0.08
HYDROGRAPH AT	210120	68.	3.13	6.	3.	3.	0.03
3 COMBINED AT	210120	342.	3.17	38.	23.	23.	0.28
ROUTED TO	210030	337.	3.20	38.	23.	23.	0.28
HYDROGRAPH AT	210210	35.	3.17	4.	2.	2.	0.04
ROUTED TO	210220	34.	3.23	4.	2.	2.	0.04
HYDROGRAPH AT	210220	13.	3.10	1.	1.	1.	0.01
2 COMBINED AT	210220	43.	3.20	5.	3.	3.	0.05
ROUTED TO	210030	42.	3.23	5.	3.	3.	0.05
HYDROGRAPH AT	070410	17.	3.13	2.	1.	1.	0.01
ROUTED TO	070420	17.	3.13	2.	1.	1.	0.01
HYDROGRAPH AT	070420	5.	3.20	0.	0.	0.	0.00
2 COMBINED AT	070420	21.	3.17	2.	1.	1.	0.01
ROUTED TO	210010	21.	3.23	2.	1.	1.	0.01
HYDROGRAPH AT	210010	36.	3.30	4.	2.	2.	0.03
2 COMBINED AT	210010	55.	3.27	6.	4.	4.	0.04
ROUTED TO	210020	55.	3.30	6.	4.	4.	0.04
HYDROGRAPH AT	210020	33.	3.13	3.	2.	2.	0.03
2 COMBINED AT	210020	72.	3.30	9.	6.	6.	0.07
ROUTED TO	210030	71.	3.33	9.	6.	6.	0.07
HYDROGRAPH AT	210030	66.	3.13	7.	4.	4.	0.06
4 COMBINED AT	210030	481.	3.20	60.	36.	36.	0.47

ROUTED TO	210040	476.	3.20	60.	36.	36.	0.47
HYDROGRAPH AT	210310	73.	3.17	7.	4.	4.	0.06
ROUTED TO	210320	72.	3.17	7.	4.	4.	0.06
HYDROGRAPH AT	070610	5.	3.43	1.	0.	0.	0.01
ROUTED TO	070620	5.	3.43	1.	0.	0.	0.01
ROUTED TO	070100	5.	3.60	1.	0.	0.	0.01
HYDROGRAPH AT	070100	59.	3.17	6.	4.	4.	0.05
2 COMBINED AT	070100	59.	3.17	7.	4.	4.	0.05
ROUTED TO	070110	58.	3.17	7.	4.	4.	0.05
HYDROGRAPH AT	070110	14.	3.10	1.	1.	1.	0.01
2 COMBINED AT	070110	69.	3.17	8.	5.	5.	0.06
ROUTED TO	070120	68.	3.20	8.	5.	5.	0.06
HYDROGRAPH AT	070808	12.	3.43	2.	1.	1.	0.02
ROUTED TO	070809	12.	3.43	2.	1.	1.	0.02
ROUTED TO	070810	12.	3.57	2.	1.	1.	0.02
HYDROGRAPH AT	070810	50.	3.10	5.	3.	3.	0.04
2 COMBINED AT	070810	50.	3.10	7.	4.	4.	0.06
ROUTED TO	070820	50.	3.10	7.	4.	4.	0.06
HYDROGRAPH AT	070730	41.	3.10	4.	2.	2.	0.03
ROUTED TO	070740	41.	3.10	4.	2.	2.	0.03
HYDROGRAPH AT	070908	2.	3.50	0.	0.	0.	0.00
ROUTED TO	070909	2.	3.50	0.	0.	0.	0.00
ROUTED TO	070910	2.	3.63	0.	0.	0.	0.00
HYDROGRAPH AT	070910	49.	3.10	5.	3.	3.	0.04
2 COMBINED AT	070910	49.	3.10	5.	3.	3.	0.04
ROUTED TO	070920	48.	3.10	5.	3.	3.	0.04
HYDROGRAPH AT	071010	3.	3.47	0.	0.	0.	0.00
ROUTED TO	071020	3.	3.47	0.	0.	0.	0.00
ROUTED TO	071030	3.	3.50	0.	0.	0.	0.00
HYDROGRAPH AT	071030	8.	3.07	1.	1.	1.	0.01
2 COMBINED AT	071030	8.	3.07	1.	1.	1.	0.01
ROUTED TO	071040	8.	3.07	1.	1.	1.	0.01

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
070010	MANE	1.09	6.53	206.99	1.00	2.00	6.50	206.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4866E+00 OUTFLOW=0.4794E+00 BASIN STORAGE=0.5001E-02 PERCENT ERROR= 0.4

070020	MANE	0.17	6.50	206.41	1.00	2.00	6.49	208.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4794E+00 EXCESS=0.0000E+00 OUTFLOW=0.4794E+00 BASIN STORAGE=0.2115E-04 PERCENT ERROR= 0.0

070030	MANE	0.78	6.49	208.25	1.00	2.00	6.49	208.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4794E+00 EXCESS=0.0000E+00 OUTFLOW=0.4791E+00 BASIN STORAGE=0.3213E-03 PERCENT ERROR= 0.0

070030	MANE	0.85	5.34	184.06	1.17	2.00	5.33	184.00	1.17

INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2515E+00 OUTFLOW=0.2501E+00 BASIN STORAGE=0.1024E-02 PERCENT ERROR= 0.2

070040	MANE	0.39	8.70	206.59	1.05	2.00	8.67	206.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7290E+00 EXCESS=0.0000E+00 OUTFLOW=0.7288E+00 BASIN STORAGE=0.2922E-03 PERCENT ERROR= 0.0

070209	MANE	0.46	11.88	206.50	0.94	2.00	11.86	208.00	0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9154E+00 OUTFLOW=0.9007E+00 BASIN STORAGE=0.1018E-01 PERCENT ERROR= 0.5

070210	MANE	0.36	11.85	207.78	0.94	2.00	11.85	208.00	0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9005E+00 EXCESS=0.0000E+00 OUTFLOW=0.9004E+00 BASIN STORAGE=0.1804E-03 PERCENT ERROR= 0.0

070210	MANE	0.70	5.27	207.97	0.94	2.00	5.27	208.00	0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4069E+00 OUTFLOW=0.4004E+00 BASIN STORAGE=0.4546E-02 PERCENT ERROR= 0.5

070220	MANE	0.09	17.12	208.18	0.94	2.00	17.11	208.00	0.94

NUITY SUMMARY (AC-FT) - INFLOW=0.1301E+01 EXCESS=0.0000E+00 OUTFLOW=0.1301E+01 BASIN STORAGE=0.4419E-04 PERCENT ERROR= 0.0

070040	MANE	1.06	17.04	208.94	0.94	2.00	17.04	210.00	0.94

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1301E+01 EXCESS=0.0000E+00 OUTFLOW=0.1298E+01 BASIN STORAGE=0.2034E-02 PERCENT ERROR=   0.1

          070040  MANE        2.00      4.95    192.74      1.14      2.00      4.92    192.00        1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3678E+00 OUTFLOW=0.3632E+00 BASIN STORAGE=0.3287E-02 PERCENT ERROR=   0.3

          070050  MANE        1.00     29.28    209.64      0.99      2.00     29.26    210.00        0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2390E+01 EXCESS=0.0000E+00 OUTFLOW=0.2387E+01 BASIN STORAGE=0.2618E-02 PERCENT ERROR=   0.0

          070050  MANE        0.78     24.29    184.85      1.21      2.00     23.78    184.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1166E+01 OUTFLOW=0.1159E+01 BASIN STORAGE=0.5169E-02 PERCENT ERROR=   0.2

          070060  MANE        0.80     39.59    207.33      1.06      2.00     39.55    208.00        1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3546E+01 EXCESS=0.0000E+00 OUTFLOW=0.3545E+01 BASIN STORAGE=0.1444E-02 PERCENT ERROR=   0.0

          070310  MANE        0.76     30.67    184.48      1.21      2.00     30.08    184.00        1.21

  INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1490E+01 OUTFLOW=0.1481E+01 BASIN STORAGE=0.6574E-02 PERCENT ERROR=   0.2

          070060  MANE        0.74     29.98    185.96      1.21      2.00     29.98    186.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1481E+01 EXCESS=0.0000E+00 OUTFLOW=0.1482E+01 BASIN STORAGE=0.3630E-03 PERCENT ERROR=  -0.1

          070060  MANE        1.23     25.91    185.60      1.21      2.00     25.47    186.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1296E+01 OUTFLOW=0.1288E+01 BASIN STORAGE=0.5563E-02 PERCENT ERROR=   0.1

          070070  MANE        0.67     83.61    187.80      1.12      2.00     83.47    188.00        1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6316E+01 EXCESS=0.0000E+00 OUTFLOW=0.6314E+01 BASIN STORAGE=0.3953E-02 PERCENT ERROR=   0.0

          070070  MANE        0.94     42.52    184.23      1.21      2.00     42.12    184.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2073E+01 OUTFLOW=0.2061E+01 BASIN STORAGE=0.8684E-02 PERCENT ERROR=   0.2

          070080  MANE        0.32    117.95    188.07      1.14      2.00    117.95    188.00        1.14

  NUITY SUMMARY (AC-FT) - INFLOW=0.8373E+01 EXCESS=0.0000E+00 OUTFLOW=0.8372E+01 BASIN STORAGE=0.3246E-02 PERCENT ERROR=   0.0

          070080  MANE        1.20     51.89    187.39      1.72      2.00     51.60    188.00        1.72
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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1932E+01 OUTFLOW=0.1925E+01 BASIN STORAGE=0.3459E-02 PERCENT ERROR=   0.2

          210110  MANE        0.85    168.85    189.82      1.21      2.00    167.98    190.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1030E+02 EXCESS=0.0000E+00 OUTFLOW=0.1029E+02 BASIN STORAGE=0.1044E-01 PERCENT ERROR=   0.0

          210110  MANE        2.00     19.31    190.15      1.64      2.00     19.18    192.00        1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8808E+00 OUTFLOW=0.8759E+00 BASIN STORAGE=0.2826E-02 PERCENT ERROR=   0.2

          210120  MANE        0.53    186.28    190.94      1.24      2.00    183.19    190.00        1.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1117E+02 EXCESS=0.0000E+00 OUTFLOW=0.1117E+02 BASIN STORAGE=0.7155E-02 PERCENT ERROR=  -0.1

          070508  MANE        0.71      4.42    210.48      0.83      2.00      4.40    210.00        0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3592E+00 OUTFLOW=0.3530E+00 BASIN STORAGE=0.4247E-02 PERCENT ERROR=   0.5

          070509  MANE        0.34      4.39    210.26      0.83      2.00      4.38    210.00        0.83

 INUITY SUMMARY (AC-FT) - INFLOW=0.3530E+00 EXCESS=0.0000E+00 OUTFLOW=0.3529E+00 BASIN STORAGE=0.1105E-03 PERCENT ERROR=   0.0

          070510  MANE        2.00      4.37    216.33      0.82      2.00      4.35    216.00        0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3530E+00 EXCESS=0.0000E+00 OUTFLOW=0.3517E+00 BASIN STORAGE=0.1322E-02 PERCENT ERROR=   0.0

          070510  MANE        1.57     73.56    185.94      1.17      2.00     73.39    186.00        1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3709E+01 OUTFLOW=0.3686E+01 BASIN STORAGE=0.1580E-01 PERCENT ERROR=   0.2

          070090  MANE        0.45     72.75    186.69      1.13      2.00     70.78    186.00        1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4040E+01 EXCESS=0.0000E+00 OUTFLOW=0.4041E+01 BASIN STORAGE=0.1219E-02 PERCENT ERROR=  -0.1

          070090  MANE        0.98     28.59    184.55      1.42      2.00     27.97    184.00        1.42

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1068E+01 OUTFLOW=0.1064E+01 BASIN STORAGE=0.2675E-02 PERCENT ERROR=   0.1

          210120  MANE        1.20     95.95    188.10      1.18      2.00     95.55    188.00        1.18

 INUITY SUMMARY (AC-FT) - INFLOW=0.5103E+01 EXCESS=0.0000E+00 OUTFLOW=0.5093E+01 BASIN STORAGE=0.6910E-02 PERCENT ERROR=   0.1

          210120  MANE        1.93     68.64    188.08      1.61      2.00     68.34    188.00        1.61
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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2756E+01 OUTFLOW=0.2741E+01 BASIN STORAGE=0.6319E-02 PERCENT ERROR= 0.3

210030	MANE	1.00	338.46	191.61	1.26	2.00	336.81	192.00	1.26

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1900E+02 EXCESS=0.0000E+00 OUTFLOW=0.1897E+02 BASIN STORAGE=0.2304E-01 PERCENT ERROR= 0.0

210210	MANE	2.00	35.56	190.77	1.02	2.00	34.75	190.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2043E+01 OUTFLOW=0.2019E+01 BASIN STORAGE=0.1657E-01 PERCENT ERROR= 0.3

210220	MANE	1.26	34.69	192.76	1.02	2.00	34.39	194.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2017E+01 EXCESS=0.0000E+00 OUTFLOW=0.2011E+01 BASIN STORAGE=0.3762E-02 PERCENT ERROR= 0.1

210220	MANE	1.61	12.97	186.62	0.99	2.00	12.88	186.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6381E+00 OUTFLOW=0.6328E+00 BASIN STORAGE=0.4044E-02 PERCENT ERROR= 0.2

210030	MANE	1.27	42.24	194.22	1.01	2.00	42.07	194.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2643E+01 EXCESS=0.0000E+00 OUTFLOW=0.2635E+01 BASIN STORAGE=0.4966E-02 PERCENT ERROR= 0.1

070410	MANE	1.87	17.40	187.32	1.36	2.00	17.33	188.00	1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8003E+00 OUTFLOW=0.7949E+00 BASIN STORAGE=0.3259E-02 PERCENT ERROR= 0.3

070420	MANE	0.32	17.31	188.65	1.35	2.00	16.89	188.00	1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7944E+00 EXCESS=0.0000E+00 OUTFLOW=0.7946E+00 BASIN STORAGE=0.2700E-03 PERCENT ERROR= -0.1

070420	MANE	2.00	4.86	190.82	1.49	2.00	4.84	192.00	1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2409E+00 OUTFLOW=0.2387E+00 BASIN STORAGE=0.1374E-02 PERCENT ERROR= 0.3

210010	MANE	2.00	21.27	193.69	1.38	2.00	21.12	194.00	1.38

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1033E+01 EXCESS=0.0000E+00 OUTFLOW=0.1030E+01 BASIN STORAGE=0.2453E-02 PERCENT ERROR= 0.0

210010	MANE	2.00	36.36	197.52	1.48	2.00	36.18	198.00	1.48

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2070E+01 OUTFLOW=0.2049E+01 BASIN STORAGE=0.1424E-01 PERCENT ERROR= 0.4

210020	MANE	1.28	54.83	198.30	1.44	2.00	54.60	198.00	1.44

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3078E+01 EXCESS=0.0000E+00 OUTFLOW=0.3066E+01 BASIN STORAGE=0.5819E-02 PERCENT ERROR= 0.2

210020	MANE	1.94	33.04	188.13	0.99	2.00	32.92	188.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1702E+01 OUTFLOW=0.1685E+01 BASIN STORAGE=0.1225E-01 PERCENT ERROR= 0.2

210030	MANE	0.84	71.60	199.23	1.24	2.00	71.31	200.00	1.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4751E+01 EXCESS=0.0000E+00 OUTFLOW=0.4745E+01 BASIN STORAGE=0.5716E-02 PERCENT ERROR= 0.0

210030	MANE	2.00	66.19	188.92	1.03	2.00	65.89	188.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3533E+01 OUTFLOW=0.3500E+01 BASIN STORAGE=0.2413E-01 PERCENT ERROR= 0.3

210040	MANE	0.28	479.49	192.58	1.20	2.00	476.04	192.00	1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2984E+02 EXCESS=0.0000E+00 OUTFLOW=0.2983E+02 BASIN STORAGE=0.8788E-02 PERCENT ERROR= 0.0

210310	MANE	2.00	72.92	190.07	1.19	2.00	72.80	190.00	1.19

INUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3713E+01 OUTFLOW=0.3683E+01 BASIN STORAGE=0.1986E-01 PERCENT ERROR= 0.3

210320	MANE	0.29	72.47	190.38	1.19	2.00	72.11	190.00	1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3682E+01 EXCESS=0.0000E+00 OUTFLOW=0.3682E+01 BASIN STORAGE=0.2759E-03 PERCENT ERROR= 0.0

070610	MANE	0.47	5.12	206.50	1.00	2.00	5.11	206.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3785E+00 OUTFLOW=0.3729E+00 BASIN STORAGE=0.3754E-02 PERCENT ERROR= 0.5

070620	MANE	0.27	5.10	206.18	1.00	2.00	5.10	206.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3729E+00 EXCESS=0.0000E+00 OUTFLOW=0.3728E+00 BASIN STORAGE=0.9843E-04 PERCENT ERROR= 0.0

070100	MANE	1.99	5.05	216.76	0.99	2.00	5.05	216.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3729E+00 EXCESS=0.0000E+00 OUTFLOW=0.3708E+00 BASIN STORAGE=0.2180E-02 PERCENT ERROR= 0.0

070100	MANE	2.00	59.65	188.75	1.25	2.00	58.68	190.00	1.25

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3087E+01 OUTFLOW=0.3064E+01 BASIN STORAGE=0.1545E-01 PERCENT ERROR= 0.2

070110	MANE	0.67	58.23	190.66	1.21	2.00	57.69	190.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3433E+01 EXCESS=0.0000E+00 OUTFLOW=0.3432E+01 BASIN STORAGE=0.2434E-02 PERCENT ERROR= -0.1

070110 MANE 1.05 13.86 186.00 1.34 2.00 13.86 186.00 1.34

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5750E+00 OUTFLOW=0.5722E+00 BASIN STORAGE=0.2164E-02 PERCENT ERROR= 0.1

070120 MANE 0.75 68.60 191.61 1.23 2.00 68.05 192.00 1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4003E+01 EXCESS=0.0000E+00 OUTFLOW=0.4000E+01 BASIN STORAGE=0.4214E-02 PERCENT ERROR= 0.0

070808 MANE 0.73 12.39 206.77 1.00 2.00 12.37 206.00 1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9191E+00 OUTFLOW=0.9057E+00 BASIN STORAGE=0.9232E-02 PERCENT ERROR= 0.5

070809 MANE 0.22 12.36 206.28 1.00 2.00 12.34 206.00 1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9058E+00 EXCESS=0.0000E+00 OUTFLOW=0.9056E+00 BASIN STORAGE=0.1862E-03 PERCENT ERROR= 0.0

070810 MANE 2.00 12.29 214.13 0.99 2.00 12.28 214.00 0.99

INUITY SUMMARY (AC-FT) - INFLOW=0.9059E+00 EXCESS=0.0000E+00 OUTFLOW=0.9010E+00 BASIN STORAGE=0.4057E-02 PERCENT ERROR= 0.1

070810 MANE 1.63 50.48 186.00 1.17 2.00 50.47 186.00 1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2578E+01 OUTFLOW=0.2561E+01 BASIN STORAGE=0.1131E-01 PERCENT ERROR= 0.2

070820 MANE 0.18 50.25 186.33 1.12 2.00 49.75 186.00 1.12

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3465E+01 EXCESS=0.0000E+00 OUTFLOW=0.3465E+01 BASIN STORAGE=0.5646E-03 PERCENT ERROR= 0.0

070730 MANE 1.32 41.93 186.47 1.19 2.00 41.44 186.00 1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2046E+01 OUTFLOW=0.2034E+01 BASIN STORAGE=0.8539E-02 PERCENT ERROR= 0.2

070740 MANE 0.22 41.27 186.40 1.19 2.00 40.62 186.00 1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2035E+01 EXCESS=0.0000E+00 OUTFLOW=0.2034E+01 BASIN STORAGE=0.3858E-03 PERCENT ERROR= 0.0

070908 MANE 0.43 2.21 210.21 0.83 2.00 2.21 210.00 0.83

NUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1796E+00 OUTFLOW=0.1766E+00 BASIN STORAGE=0.2053E-02 PERCENT ERROR= 0.5

070909 MANE 0.32 2.21 210.51 0.83 2.00 2.20 210.00 0.83

```
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1765E+00 EXCESS=0.0000E+00 OUTFLOW=0.1764E+00 BASIN STORAGE=0.7098E-04 PERCENT ERROR=   0.0

          070910  MANE        1.96      2.18    217.18      0.82      2.00      2.17    218.00        0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1765E+00 EXCESS=0.0000E+00 OUTFLOW=0.1753E+00 BASIN STORAGE=0.1194E-02 PERCENT ERROR=   0.0

          070910  MANE        0.84     49.17    185.78      1.16      2.00     49.14    186.00        1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2494E+01 OUTFLOW=0.2478E+01 BASIN STORAGE=0.1157E-01 PERCENT ERROR=   0.2

          070920  MANE        0.16     49.02    186.31      1.13      2.00     48.34    186.00        1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2653E+01 EXCESS=0.0000E+00 OUTFLOW=0.2653E+01 BASIN STORAGE=0.4409E-03 PERCENT ERROR=   0.0

          071010  MANE        0.80      2.63    208.20      0.94      2.00      2.63    208.00        0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2034E+00 OUTFLOW=0.2002E+00 BASIN STORAGE=0.2286E-02 PERCENT ERROR=   0.5

          071020  MANE        0.43      2.63    208.27      0.94      2.00      2.63    208.00        0.94

 INUITY SUMMARY (AC-FT) - INFLOW=0.2002E+00 EXCESS=0.0000E+00 OUTFLOW=0.2001E+00 BASIN STORAGE=0.1176E-03 PERCENT ERROR=   0.0

          071030  MANE        0.93      2.62    209.98      0.94      2.00      2.62    210.00        0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2001E+00 EXCESS=0.0000E+00 OUTFLOW=0.1999E+00 BASIN STORAGE=0.1727E-03 PERCENT ERROR=   0.0

          071030  MANE        0.55      7.92    183.96      1.11      2.00      7.91    184.00        1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4180E+00 OUTFLOW=0.4148E+00 BASIN STORAGE=0.2156E-02 PERCENT ERROR=   0.2

          071040  MANE        0.28      8.00    184.68      1.05      2.00      7.75    184.00        1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6147E+00 EXCESS=0.0000E+00 OUTFLOW=0.6146E+00 BASIN STORAGE=0.1943E-03 PERCENT ERROR=   0.0


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

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: A-610R2.hc1

```
****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              MAY   1991              *
*           VERSION 4.0.1E             *
*                                      *
* RUN DATE  11/10/1997  TIME  16:40:31 *
*                                      *
****************************************
```

```
****************************************
*                                      *
*   U.S. ARMY CORPS OF ENGINEERS       *
*   HYDROLOGIC ENGINEERING CENTER      *
*         609 SECOND STREET            *
*      DAVIS, CALIFORNIA 95616         *
*          (916) 756-1104              *
*                                      *
****************************************
```

```
X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX         XXX
```

```
::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
:::                                  :::
:::  Full Microcomputer Implementation :::
:::                by                :::
:::       Haestad Methods, Inc.      :::
:::                                  :::
::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              * ******************************************************************************
              * This is THE RECOMMENDED PLAN HYDROLOGY - PART A (of Parts A & B)
              *
              * - This model combines the Oak Street and Osborn Road Outfall alternatives
              *     from the Alternative Analysis Report.
              * ******************************************************************************
              * - HEC-1 only allows 9 hanging hydrographs, therefore, the Recommended Plan
              *     hydrology was split into two parts, A and B.
              *
              * -  Part A includes all areas that are dependent on one another due to
              *     diversions, routing, or flow combinations.
              *
              * -  Part B includes all areas that are independent, stand-alone subbasins.
              *     These subbasins can be modeled to their outlet points without affecting
              *     or being effected by any basins from Part A.
              * ******************************************************************************
              *
              * - This file contains updated stage storage information from the Recommended
              *     Plan Design.
              *
              *     The following are changes made in the original HEC-1 study done for
              *     the City of Scottsdale (the Existing Conditions Model).  These changes
              *     were part of the Alternative Analysis Phase of the STP Papago Project
              *
              * - Combined Basins 03 and 04, as well as the following subbasins:
              *     From Basin 05 - 050005
              *     From Basin 07 - 070209, 070210, 070010, 070508, 070610, 070808
              * - Added natural storage in at the Desert Botanical Gardens (DBG)
              * - Basin 07 flow was diverted to Oak Street, and combined w/flow from Basin 05
              *     and Basin 03.
              *     Upstream of CP 030510 Basin 07 10 year flows are diverted into a pipe
              *     along Oak Street.  The 100 year flow from Basins 030809 and 030810 is
              *     diverted into a pipe along 64th St north to Oak St due to a proposed
              *     sound wall to be built by others.  The flow in the pipes is combined at
              *     CP 030510 and routed in the pipe to 030520.  The 100 year flow from the
              *     Auto Park is routed north in a pipe along 66th Street to CP 030520 where
              *     all of the flow is combined and routed east along Oak St. to the IBW.
              * - Diversions along 64th Street and Oak Street allow for 10 yr flow in the
              *     pipes.  The overflows go to the Auto Park basin or the adjacent
              *     neighborhoods.
              * - Flows into the HyView neighborhood were diverted at CP 030530 to
              *     Oak Street (CP 030520)
              * - Stage-Storage at the Auto Park was revised to reflect existing topography,
              *     with the storage augmented by excavating a deeper invert near the outlet
              * - A water surface elevation less than 1268 ft was maintained at the Auto Park
              *     to keep the homes dry on 66th Street
              * - The outflow from the Auto Park Basin was routed to CP 030530 and combined
              *     with the above flows and then routed to Oak Street
              * - Weir Elev. at the Desert Botanical Gardens was set to 1267.8 ft, based on
              *     topo
              * - Basin 05 was combined with subbasins from the eastern part of Basin 07.  A
              *     new subbasin, 210005 was created from part of the existing subbasin 210010
              * - A detention basin was inserted into subbasin 030060 after storage at 050065
              * - The flows from basin 070080 and 070420 were combined at CP 070420 and routed
              *     to CP 210005
              * - A storm drain was added from CP 210005 to 050305 picking up flow from 050030
              * - The flows from CP 050210 were routed to 050020 then to 050030 then to 050305
              * - Subbasin 050065 was split into two such that the area north of Osborn Rd.
              *     drains into the storm drain - the new basin is 050062
              * - A storm drain was added from the outlet of the Paiute Park detention basin
              *     to CP 051570
              * - All subbasins north of Osborn Rd. were re-routed in the Osborn Rd. storm
```

```
*     drain, no flows cross to the south
* - The area for Subbasin 050040 was adjusted based on topo flown for the area
* - Storage was added at CP 050040
*
```

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

  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    10/97
              *
              *DIAGRAM
 11           IT       2                     300
 12           IO       5

 13           KK  070808   BASIN
 14           BA   0.017
 15           PH       0       0    0.50    0.97    1.61    1.76    1.86    2.05
 16           LS       0      88       0       0      98       0
 17           UK     300  0.0100    0.20      99
 18           UK     100  0.0100    0.10       1
 19           RK    1600   0.214    0.03            TRAP       2     3.5
              *
              * The 10 year flows are diverted into a proposed storm drain along Oak Street.
              * In storm events greater than the 10 yr, the remaining flow will follow its
              * natural course across and sheet flow across Oak Street to the north.
              *

 20           KK   808PP  Divert 10-year flows into storm drain
 21           DT  808OUT
 22           DI       0      12      13      15      50     100
 23           DQ       0    0.01       1       3      38      88

 24           KK  070610 FROM  070808
 25           RK     240  0.0066   0.013            CIRC    3.00

 26           KK  070610   BASIN
 27           BA   0.007
 28           LS       0      88       0       0      98       0
 29           UK     300  0.0100    0.20      99
 30           UK     100  0.0100    0.10       1
 31           RK     500   0.054    0.03            TRAP       2     3.5

 32           KK   610PP  Divert 10-year flows into storm drain
 33           DT  610OUT
 34           DI       0       5       6      10      50     100
 35           DQ       0     .01       1       5      45      95

 36           KK  070610 COMBINE
 37           HC       2
```

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

 38           KK  070508    FROM  070610
 39           RK     420  0.0066   0.013            CIRC    3.00

 40           KK  070508   BASIN
 41           BA   0.008
 42           LS       0      85       0       0      98       0
 43           UK     300  0.0100    0.20      99
 44           UK     100  0.0100    0.10       1
 45           RK     600   0.048    0.03            TRAP       9     1.0

 46           KK   508PP  Divert 10-year flows into storm drain
 47           DT  508OUT
 48           DI       0       4       5      15      50     100
 49           DQ       0     .01       1      11      46      96

 50           KK  070508 COMBINE
 51           HC       2

 52           KK  070010    FROM  070508
 53           RK     270  0.0066   0.013            CIRC    3.00

 54           KK  070010   BASIN
 55           BA   0.009
 56           LS       0      88       0       0      98       0
 57           UK     300  0.0100    0.20      99
 58           UK     100  0.0100    0.10       1
 59           RK    1200   0.042    0.03            TRAP       2     3.5

 60           KK   010PP  Divert 10-year flows into storm drain
 61           DT  010OUT
 62           DI       0       7      10      15      50     100
 63           DQ       0     .01       3       8      43      93

 64           KK  070010 COMBINE
 65           HC       2

 66           KK  070210    FROM  070010
 67           RK     120  0.0033   0.013            CIRC    3.00

 68           KK  070209   BASIN
 69           BA   0.018
 70           LS       0      87       0       0      98       0
 71           UK     300  0.0100    0.20      99
 72           UK     100  0.0100    0.10       1
 73           RK    1200   0.252    0.03            TRAP       2     3.5

 74           KK  070210    FROM  070209
 75           RK     750   0.252   0.013            TRAP      10       1
```

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

  76          KK  070210   BASIN
  77          BA   0.008
  78          LS       0      87       0       0      98       0
  79          UK     300  0.0100    0.20      99
  80          UK     100  0.0100    0.10       1
  81          RK     600   0.043    0.03            TRAP       2     3.5

  82          KK  070210 COMBINE
  83          HC       2

  84          KK   210PP  Divert 10-year flows into storm drain
  85          DT  210OUT
  86          DI       0      17      20      30      50     100
  87          DQ       0     .01       3      13      33      83

  88          KK  070210 COMBINE
  89          HC       2

  90          KK  050005   FROM 070210
  91          RK     950   0.008   0.013            CIRC    3.00

  92          KK  050005   BASIN
  93          BA   0.038
  94          LS       0      85       0       0      98       0
  95          UK     300  0.0100    0.20      99
  96          UK     100  0.0100    0.10       1
  97          RK    1650    0.09    0.03            TRAP      30     1.0

  98          KK   005PP  Divert 10-year flows into storm drain
  99          DT  005OUT
 100          DI       0      21      22     100     150     200
 101          DQ       0     .01       1      79     129     179

 102          KK  050005 COMBINE
 103          HC       2
              *
              * Flows are combined with Basin 03 flows at 64th St and Oak St (CP 030510)
              *

 104          KK  030510   FROM 050005
 105          RK    1650   0.008   0.013            CIRC       3

 106          KK  030509   BASIN
 107          BA   0.016
 108          LS       0      86       0
 109          UK     300   0.029    0.20     100
 110          RK    1300   0.014    0.03            TRAP      30     2.0

 111          KK  030510    FROM  030509
 112          RK    1900    .014     .03            TRAP      30       2
```

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

 113          KK  030510   BASIN
 114          BA   0.070
 115          LS       0      85       0       0      98       0
 116          UK     300  0.0140    0.20      75
 117          UK     100  0.0100    0.10      25
 118          RK    1500   0.014    0.03            TRAP      30       2

 119          KK  030510
 120          HC       2
              *
              * At this point flows are routed two ways: in the storm drain and overland
              * For the following diversions, the ID's ending in PP is for storm drain flow
              * and the ID's ending in RD is for overland (roadway) flow
              *

 121          KK   510PP  Divert 10-year flows into storm drain
 122          DT   510RD
 123          DI       0      62      63     100     140     180
 124          DQ       0     .01       1      38      78     118

 125          KK  030809   BASIN
 126          BA   0.012
 127          LS       0      86       0
 128          UK     300   0.029    0.20     100
 129          RK     800   0.024    0.03            TRAP      60     1.0

 130          KK  030810    FROM  030809
 131          RK    1350   0.015    0.03            TRAP    60.0       1

 132          KK  030810   BASIN
 133          BA   0.072
 134          LS       0      85       0       0      98       0
 135          UK     300  0.0100    0.20      99
 136          UK     100  0.0100    0.10       1
 137          RK     539  0.0034    0.02            TRAP      60     1.0
 138          RK    3226  0.0207    0.02            TRAP      60     1.0

 139          KK  030810 COMBINE
 140          HC       2
              *
              * The proposed storm drain in 64th St is designed to carry the 100 yr flow.
              * The flow in the pipe is carried north to CP 030510 where it outfalls into the
              * Oak St storm drain.
              * In events greater than the 100 yr, the overflow will follow its historical
              * flow path and sheet flow down Hubbell St to the Auto Park detention basin.
              *

 141          KK   810PP Divert the 100-year flow into the storm drain
 142          DT   810RD
 143          DI       0     140     141     210
 144          DQ       0     .01       1      70
```

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

 145          KK  030510    FROM  030810
 146          RK    1000  0.0033   0.013            CIRC    5.50

 147          KK  030510 COMBINE
 148          HC       3

 149          KK  030520    FROM  030510
 150          RK    1250   0.014   0.017            CIRC    4.75

 151          KK  030710   BASIN
 152          BA   0.021
 153          LS       0      79       0       0      98       0
 154          UK     150  0.0100    0.30      59
 155          UK      50  0.0100    0.10      41
 156          RK     392  0.0143    0.02            TRAP      38     1.0
 157          RK     695  0.0034    0.02            TRAP      38     1.0

 158          KK  030720    FROM  030710
 159          RK     900  0.0034   0.017            TRAP    37.5       1

 160          KK  030720   BASIN
 161          BA   0.027
 162          LS       0      79       0       0      98       0
 163          UK     150  0.0100    0.30      65
 164          UK      50  0.0100    0.10      35
 165          RK     970  0.0143    0.02            TRAP      38     1.0
 166          RK     890  0.0034    0.02            TRAP      38     1.0

 167          KK  030720 COMBINE
 168          HC       2

 169          KK  030520    FROM  030720
 170          RK     776  0.0034   0.017            TRAP    37.5       1

 171          KK  030520   BASIN
 172          BA   0.041
 173          LS       0      80       0       0      98       0
 174          UK     151  0.0100    0.30      65
 175          UK      50  0.0100    0.10      35
 176          RK    1117  0.0143    0.02            TRAP      38     1.0
 177          RK     776  0.0034    0.02            TRAP      38     1.0

 178          KK  030520 COMBINE
 179          HC       2

 180          KK   520PP  Divert 10 yr flow into storm drain
 181          KM    Pipe carries 10-year flows from CP 030520, 030720, & 030710
 182          DT   520RD
 183          DI       0      90     100     180     200     250
 184          DQ       0     0.1      10      90     110     160
              *
              * Flows left in the roadway from the above diversions are now retrieved and
              * routed along their natural paths to the Auto Park detention basin
              *
              *
              * Retrieve roadway portion of diverted flows at CP 030510
              *
```

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

 185          KK  030510
 186          DR   510RD

 187          KK  030520 From 030510
 188          RK    1250   .0143    .017            TRAP      60       1
              *
              * Retrieve roadway portion of diverted flows at CP 030520
              *

 189          KK  030520
 190          DR   520RD

 191          KK  030520 Combine
 192          HC       2

 193          KK  030540 From 030520
 194          RK    1600  0.0034   0.017            TRAP      40       1
              *
              * Retrieve roadway portion of diverted flows at CP 030810
              *

 195          KK  030810
 196          DR   810RD

 197          KK  030540 From 030810
 198          RK    1250   .0143    .017            TRAP      40       1

 199          KK  030540   BASIN
 200          BA   0.041
 201          LS       0      82       0       0      98       0
 202          UK     156     .01    0.30      65
 203          UK      56  0.0100    0.10      35
 204          RK    2079  0.0143    0.02            TRAP      38     1.0
 205          RK     574  0.0034    0.02            TRAP      38     1.0

 206          KK  030550   Auto Park Basin
 207          BA   0.043
 208          LS       0      80       0       0      98       0
 209          UK      65  0.0100    0.37      16
 210          UK     184  0.0100    0.10      84
 211          RK    1232  0.0034    0.02            TRAP      57     1.0

 212          KK  030550 COMBINE
 213          HC       4
              *   Stage - Discharge is based on hydraulics for 66" RCP @ .002 ft/ft as well
              *    as an analysis of hydrographs - the outflow hydrograph at the Auto Park
              *    and the combination hydrograph at CP 030520
              *   Stage - Storage Based on Minimal Impact to Exist. Auto Park Basin
```

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

 214          KK    AUTO  Detention Basin is located on the north side of the Auto Park
 215          RS       1    STOR
 216          SV       0    0.13    0.51    0.97    1.83    2.88    4.45    7.11
 217          SE      61      62      64      65      66      67      68      69
 218          SQ      84     112     158     166     171     175     178     182
              *
              * Outflow from the Auto Park outlets into a storm drain and is routed to 030530
              *

 219          KK  030530    FROM AUTO Park BASIN
 220          RK     700   0.002   0.013            CIRC    5.50

 221          KK  030530   BASIN
 222          BA   0.044
 223          LS       0      82       0       0      98       0
 224          UK     154  0.0100    0.30      66
 225          UK      51  0.0100    0.10      34
 226          RK    1390  0.0143    0.02            TRAP      38     1.0
 227          RK    1067  0.0034    0.02            TRAP      38     1.0

 228          KK  030530 Combine flows from Auto Park Basin (AUTO) and sub-basin 030530
 229          HC       2

 230          KK  030520 from 030530
 231          RK    1100    .002    .013            CIRC    6.00

 232          KK  030520 Combine pipe flows from 030520 and pipe flows from 030510
 233          HC       3
              *
              * Flows are routed under the Cross Cut Canal to Basin 04 along Oak Street
              *

 234          KK  040120    FROM  030520
 235          RK    2700   0.004   0.013            CIRC    7.50
              *

 236          KK  040110   BASIN
 237          BA   0.054
 238          LS       0      79       0       0      98       0
 239          UK     146  0.0100    0.30      63
 240          UK      55  0.0100    0.10      37
 241          RK    1275  0.0004    0.02            TRAP      38     1.0
 242          RK    1266  0.0072    0.02            TRAP      38     1.0

 243          KK  040120    FROM  040110
 244          RK     351  0.0069   0.013            CIRC     3.0

 245          KK  040120   BASIN
 246          BA   0.112
 247          LS       0      79       0       0      98       0
 248          UK     160   0.010    0.30      57
 249          UK      75   0.010    0.10      43
 250          RK    1600   0.001    0.02            TRAP      40     1.0
 251          RK    2356   0.007    0.02            TRAP      60     1.0
```

Auto Mall

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

 214          KK    AUTO  Detention Basin is located on the north side of the Auto Park
 215          RS       1    STOR
 216          SV       0    0.13    0.51    0.97    1.83    2.88    4.45    7.11
 217          SE      61      62      64      65      66      67      68      69
 218          SQ      84     112     158     166     171     175     178     182
              *
              * Outflow from the Auto Park outlets into a storm drain and is routed to 030530
              *

 219          KK  030530    FROM AUTO Park BASIN
 220          RK     700   0.002   0.013            CIRC    5.50

 221          KK  030530   BASIN
 222          BA   0.044
 223          LS       0      82       0       0      98       0
 224          UK     154  0.0100    0.30      66
 225          UK      51  0.0100    0.10      34
 226          RK    1390  0.0143    0.02            TRAP      38     1.0
 227          RK    1067  0.0034    0.02            TRAP      38     1.0

 228          KK  030530 Combine flows from Auto Park Basin (AUTO) and sub-basin 030530
 229          HC       2

 230          KK  030520 from 030530
 231          RK    1100    .002    .013            CIRC    6.00

 232          KK  030520 Combine pipe flows from 030520 and pipe flows from 030510
 233          HC       3
              *
              * Flows are routed under the Cross Cut Canal to Basin 04 along Oak Street
              *

 234          KK  040120    FROM  030520
 235          RK    2700   0.004   0.013            CIRC    7.50
              *

 236          KK  040110   BASIN
 237          BA   0.054
 238          LS       0      79       0       0      98       0
 239          UK     146  0.0100    0.30      63
 240          UK      55  0.0100    0.10      37
 241          RK    1275  0.0004    0.02            TRAP      38     1.0
 242          RK    1266  0.0072    0.02            TRAP      38     1.0

 243          KK  040120    FROM  040110
 244          RK     351  0.0069   0.013            CIRC     3.0

 245          KK  040120   BASIN
 246          BA   0.112
 247          LS       0      79       0       0      98       0
 248          UK     160   0.010    0.30      57
 249          UK      75   0.010    0.10      43
 250          RK    1600   0.001    0.02            TRAP      40     1.0
 251          RK    2356   0.007    0.02            TRAP      60     1.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 252          KK  040120 COMBINE
 253          HC       3

 254          KK  040130    FROM  040120
 255          RK     730   0.004   0.013            CIRC    7.50

 256          KK  040130   BASIN
 257          BA   0.023
 258          LS       0      79       0       0      98       0
 259          UK     122  0.0100    0.32      52
 260          UK      82  0.0100    0.10      48
 261          RK     642  0.0072    0.02            TRAP      41     1.0

 262          KK  040130 COMBINE
 263          HC       2

 264          KK  040040    FROM  040130
 265          RK     625   0.004   0.013            CIRC    7.50

 266          KK  040010   BASIN
 267          BA   0.038
 268          LS       0      79       0       0      98       0
 269          UK     148  0.0100    0.30      64
 270          UK      53  0.0100    0.10      36
 271          RK    1275  0.0072    0.02            TRAP      38     1.0
 272          RK     877  0.0072    0.02            TRAP      64     1.0

 273          KK  040020    FROM  040010
 274          RK    1136  0.0072   0.017            TRAP    37.5       1

 275          KK  040020   BASIN
 276          BA   0.041
 277          LS       0      79       0       0      98       0
 278          UK     150  0.0100    0.30      62
 279          UK      50  0.0100    0.10      38
 280          RK    1251  0.0004    0.03            TRAP      38     1.0

 281          KK  040020 COMBINE
 282          HC       2

 283          KK  040030    FROM  040020
 284          RK    1137  0.0072   0.017            TRAP    37.5       1

 285          KK  040030   BASIN
 286          BA   0.061
 287          LS       0      79       0       0      98       0
 288          UK     123  0.0100    0.32      53
 289          UK      81  0.0100    0.10      47
 290          RK    1760  0.0004    0.02            TRAP      41     1.0
```

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

 291          KK  040030 COMBINE
 292          HC       2

 293          KK  040040    FROM  040030
 294          RK    1636  0.0003   0.013            CIRC     1.0

 295          KK  040210   BASIN
 296          BA   0.011
 297          LS       0      79       0       0      98       0
 298          UK      97  0.0100    0.34      45
 299          UK     111  0.0100    0.10      55
 300          RK     696  0.0072    0.02            TRAP       6     1.0

 301          KK  040040    FROM  040210
 302          RK     990  0.0004   0.017            TRAP      80       1

 303          KK  040040   BASIN
 304          BA   0.044
 305          LS       0      79       0       0      98       0
 306          UK      22   0.010    0.40      16
 307          UK     197   0.010    0.10      84
 308          RK    2600   0.004    0.02            TRAP      50       1

 309          KK  040040 COMBINE
 310          HC       4

 311          KK  040050    FROM  040040
 312          RK    1869   0.006   0.013            TRAP      14

 313          KK  040310   BASIN
 314          BA   0.062
 315          LS       0      79       0       0      98       0
 316          UK     125   0.010    0.32      52
 317          UK      87   0.010    0.10      48
 318          RK    1761  0.0072    0.02            TRAP      38       1

 319          KK  040050    FROM  040310
 320          RK    1912   0.004   0.017            TRAP      45       1

 321          KK  040050   BASIN
 322          BA   0.113
 323          LS       0      79       0       0      98       0
 324          UK     158   0.010    0.30      49
 325          UK      99   0.010    0.10      51
 326          RK    1202  0.0004    0.02            TRAP      45     1.0
 327          RK    1869  0.0072    0.02            TRAP      60     1.0

 328          KK  040050 COMBINE
 329          HC       3
```

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

 330          KK  040060    FROM  040050
 331          RK     633   0.004   0.013            TRAP      19

 332          KK  040060   BASIN
 333          BA   0.022
 334          LS       0      79       0       0      98       0
 335          UK     206  0.0100    0.29      22
 336          UK     190  0.0100    0.10      78
 337          RK     633  0.0072    0.02            TRAP      60     1.0

 338          KK  040060 COMBINE
 339          HC       2
              *
              * Oak St Outfall to Indian Bend Wash
              *

 340          KK  040070    FROM  040060
 341          RK     619  0.0033   0.013            TRAP      19
              *
              * The start of the Osborn Road outfall hydrology
              *

 342          KK  070010
 343          KM    Retrieve overland flows at CP 070010
 344          DR  010OUT

 345          KK  070020    FROM  070010
 346          RK     178  0.0131   0.013            CIRC     1.0

 347          KK  070030    FROM  070020
 348          RK     520  0.0146   0.025            TRAP     9.0       1

 349          KK  070030   BASIN
 350          BA   0.004
 351          LS       0      85       0       0      98       0
 352          UK     150  0.0100    0.30      65
 353          UK      50  0.0100    0.10      35
 354          RK     522  0.0146    0.03            TRAP       2     3.5

 355          KK  070030 COMBINE
 356          HC       2

 357          KK  070040    FROM  070030
 358          RK     177  0.0146   0.017            TRAP    54.8       1

 359          KK  070210
 360          KM    Retrieve overland flows at CP 070210
 361          DR  210OUT
```

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

 362          KK  070220    FROM  070210
 363          RK     164  0.0131   0.013            CIRC     1.0

 364          KK  070040    FROM  070220
 365          RK     723  0.0146   0.017            TRAP    54.8       1

 366          KK  070040   BASIN
 367          BA   0.006
 368          LS       0      86       0       0      98       0
 369          UK     181  0.0100    0.28      72
 370          UK      60  0.0100    0.10      28
 371          RK    1946  0.0146    0.02            TRAP      30     1.0

 372          KK  070040 COMBINE
 373          HC       3

 374          KK  070050    FROM  070040
 375          RK     878  0.0146   0.025            TRAP    20.0     1.0

 376          KK  070050   BASIN
 377          BA   0.018
 378          LS       0      86       0       0      98       0
 379          UK     150  0.0100    0.30      65
 380          UK      50  0.0100    0.10      35
 381          RK     290  0.0058    0.02            TRAP      11     1.0
 382          RK     981  0.0146    0.02            TRAP      11     1.0

 383          KK  070050 COMBINE
 384          HC       2

 385          KK  070060    FROM  070050
 386          RK     872  0.0058   0.025            TRAP     1.0     1.0

 387          KK  070310   BASIN
 388          BA   0.023
 389          LS       0      86       0       0      98       0
 390          UK     150  0.0100    0.30      65
 391          UK      50  0.0100    0.10      35
 392          RK     278  0.0058    0.02            TRAP      11     1.0
 393          RK     986  0.0146    0.02            TRAP      11     1.0

 394          KK  070060    FROM  070310
 395          RK     745  0.0058   0.025            TRAP     1.0     1.0

 396          KK  070060   BASIN
 397          BA   0.020
 398          LS       0      86       0       0      98       0
 399          UK     150  0.0100    0.30      65
 400          UK      50  0.0100    0.10      35
 401          RK    1096  0.0058    0.03            TRAP       2     1.0
```

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

 402          KK  070060 COMBINE
 403          HC       3

 404          KK  070070    FROM  070060
 405          RK     726  0.0146   0.025            TRAP    30.0     1.0

 406          KK  070070   BASIN
 407          BA   0.032
 408          LS       0      86       0       0      98       0
 409          UK     150  0.0100    0.30      65
 410          UK      50  0.0100    0.10      35
 411          RK    1209  0.0146    0.03            TRAP       2     1.0

 412          KK  070080   BASIN
 413          BA   0.021
 414          LS       0      83       0       0      98       0
 415          UK      29  0.0100    0.39       9
 416          UK     189  0.0100    0.10      91
 417          RK    1257  0.0058    0.02            TRAP      30     1.0

 418          KK  070080 COMBINE
 419          HC       3

 420          KK   07Det   Detention basin at Marriott's Brighton Gardens
 421          RS       1    STOR
 422          SV       0    0.78    1.64    2.65    3.84    5.21    6.77    6.77
 423          SE      66      67      68      69      70      71      72      73
 424          SQ       0      12      36      42      46      48      52     355
              *
              * Marriott's Brighton Gardens outfall - 07Qpip is the outflow in the storm drain
              * 07Qspl is the flow overtopping the basin
              *

 425          KK  07Qpip
 426          DT  07Qspl
 427          DI       0      71     112     172     245     329     420     518     623
 428          DQ       0     0.1      26      72     132     204     285     374     471

 429          KK  070420   FROM 07Qpip
 430          RK    1000   0.005   0.013            CIRC     3.0

 431          KK  070410   BASIN
 432          BA   0.011
 433          LS       0      84       0       0      98       0
 434          UK     144  0.0100    0.32      44
 435          UK     121  0.0100    0.10      56
 436          RK    1816  0.0146    0.02            TRAP      23     1.0

 437          KK  070420    FROM  070410
 438          RK     183  0.0058   0.017            TRAP    52.5       1
```

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

 439          KK  070420   BASIN
 440          BA   0.003
 441          LS       0      79       0       0      98       0
 442          UK     177  0.0100    0.31      25
 443          UK     200  0.0100    0.10      75
 444          RK    1046  0.0058    0.02            TRAP      49     1.0

 445          KK  070420 COMBINE
 446          HC       3

 447          KK  210005  FROM 070420
 448          RK     450   0.005   0.013            CIRC     3.5

 449          KK  210005   BASIN
 450          BA   0.008
 451          LS       0      79       0       0      98       0
 452          UK      94  0.0100    0.34      26
 453          UK     116  0.0100    0.10      74
 454          RK     523  0.0032    0.02            TRAP      38     1.0
 455          RK    1250  0.0020    0.02            TRAP      45     1.0

 456          KK  210005 COMBINE
 457          HC       2

 458          KK  050030   FROM 210005
 459          RK    1600   0.005   0.013            CIRC       4

 460          KK  050005
 461          KM    Retrieve overland flows at CP 050005
 462          DR  005OUT

 463          KK  050010   FROM 050005
 464          RK    1300   0.015    0.02            TRAP      35       1

 465          KK  050010   BASIN
 466          BA   0.066
 467          LS       0      81       0       0      98       0
 468          UK     144  0.0100    0.30      52
 469          UK      57  0.0100    0.10      48
 470          RK    1189  0.0033    0.02            TRAP      30     1.0
 471          RK    1197  0.0038    0.02            TRAP      60     1.0

 472          KK  050010   COMBINE
 473          HC       2

 474          KK  050020    FROM  050010
 475          RK    1370  0.0038   0.017            TRAP    37.5       1

 476          KK  050210   BASIN
 477          BA   0.054
 478          LS       0      79       0       0      98       0
 479          UK     200  0.0100    0.30      28
 480          UK     200  0.0100    0.10      72
 481          RK     564  0.0038    0.02            TRAP      23     1.0
```

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

 482          RK    1199  0.0033    0.02            TRAP      23     1.0

 483          KK   210ST STORAGE
 484          RS       1    STOR
 485          SV    0.00    7.72    7.72
 486          SE    0.00    1.00    2.00
 487          SQ    0.00    0.01    0.01
 488          ST     1.0     500     3.0     1.5

 489          KK  050020    FROM  050210
 490          RK     278  0.0033   0.017            TRAP    60.0       1

 491          KK  050020   BASIN
 492          BA   0.009
 493          LS       0      79       0       0      98       0
 494          UK     166  0.0100    0.30      39
 495          UK      98  0.0100    0.10      61
 496          RK    1304  0.0038    0.02            TRAP      60     1.0

 497          KK  050020 COMBINE
 498          HC       3

 499          KK  050030    FROM  050020
 500          RK     347  0.0038   0.017            TRAP    37.5       1

 501          KK  050030   BASIN
 502          BA   0.020
 503          LS       0      79       0       0      98       0
 504          UK     150  0.0100    0.30      15
 505          UK      50  0.0100    0.10      85
 506          RK     278  0.0038    0.02            TRAP       9     1.0
 507          RK    1468  0.0033    0.02            TRAP       9     1.0
              *
              * Scottsdale Executive Villas natural storage in parking lot
              *

 508          KK   030ST STORAGE
 509          RS       1    STOR
 510          SV       0    0.01    0.06    0.62    2.72    2.72
 511          SE      65      66      67      68      69      70
 512          SQ    0.00    0.01    0.01    0.01    0.01    0.01
 513          ST      68     150     3.0     1.5

 514          KK  050030 COMBINE
 515          HC       3

 516          KK  050305   FROM 050030
 517          RK     150   0.002   0.013            CIRC     5.5

 518          KK  050050   FROM 050305
 519          RK    1500   0.001   0.013            TRAP       9     1.0
```

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

 520          KK  050040   BASIN
 521          BA   0.102
 522          LS       0      79       0       0      98       0
 523          UK     150  0.0100    0.30      57
 524          UK      50  0.0100    0.10      43
 525          RK    2230  0.0038    0.02            TRAP      38     1.0
 526          RK    2654  0.0038    0.02            TRAP      38     1.0

 527          KK  40STOR  Storage on west side of cross-cut canal
 528          RS       1
 529          SV       0       0       0       0     2.6    13.5    13.5
 530          SE      58      59      60      61      62      63      64
 531          SQ       0      10      22      32      40      50      55

 532          KK  050050    FROM  050040
 533          RK     491  0.0334   0.013            CIRC     2.5

 534          KK  050310   BASIN
 535          BA   0.041
 536          LS       0      79       0       0      98       0
 537          UK     200  0.0100    0.30      28
 538          UK     200  0.0100    0.10      72
 539          RK     816  0.0033    0.02            TRAP      30     1.0
 540          RK     848  0.0038    0.02            TRAP      30     1.0

 541          KK  050065   BASIN
 542          BA   0.014
 543          LS       0      79       0       0      98       0
 544          UK     100    0.01     0.3      15
 545          UK     100    0.01     0.1      85
 546          RK     500   0.005   0.012            TRAP      60       1

 547          KK  050060   BASIN
 548          BA   0.029
 549          LS       0      79       0       0      98       0
 550          UK     105    0.01     0.3      20
 551          UK     160    0.01     0.1      80
 552          RK    1300  0.0038    0.03            TRAP     100     1.0
              *
              * Flows combined from 050040, 050305, 050310, 050060 and 050065 into Paiute
              * Park detention basin
              *

 553          KK  050050 COMBINE
 554          HC       5

 555          KK   05Det  Storage
 556          RS       1    STOR
 557          SV       0    0.64    2.37    5.14    8.40    11.7    15.1    18.5    22.1    22.1
 558          SE      49      50      51      52      53      54      55      56      57      58
 559          SQ     4.5      22      37      47      56      65      73      81      88     156
              *
              * Paiute Park outfall - 05Qpip is the outflow in the storm drain
              * 05Qspl is the flow overtopping the basin
              *
              *
              * Overflows to CP 050060
              *
```

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

 560          KK  05Qpip
 561          DT  05Qspl
 562          DI       0     160     382     780    1292    1897
 563          DQ       0    0.01     212     600    1102    1697
              *
              * Begin storm drain system in Osborn Road
              *

 564          KK  050062   BASIN
 565          BA   0.006
 566          BA   0.014
 567          LS       0      79       0       0      98       0
 568          UK     100    0.01     0.3      15
 569          UK      50    0.01     0.1      85
 570          RK     900   0.005   0.012            TRAP      60       1

 571          KK  050610   FROM 050062
 572          RK    1500   0.003   0.013            TRAP      60       1

 573          KK  050610   BASIN
 574          BA   0.081
 575          LS       0      79       0       0      98       0
 576          UK     130  0.0100    0.32      56
 577          UK      70  0.0100    0.10      44
 578          RK    1450  0.0038    0.02            TRAP      45     1.0
 579          RK    1240  0.0033    0.02            TRAP      60     1.0

 580          KK  050610    COMBINE
 581          HC       3

 582          KK  050620    FROM  050610
 583          RK    1050  0.0037   0.013            CIRC       6

 584          KK  050620   BASIN
 585          BA   0.099
 586          LS       0      79       0       0      98       0
 587          UK     147  0.0100    0.30      56
 588          UK      53  0.0100    0.10      44
 589          RK     940  0.0033    0.02            TRAP      41     1.0
 590          RK    2545  0.0038    0.02            TRAP      60     1.0

 591          KK  050620 COMBINE
 592          HC       2

 593          KK  050630    FROM  050620
 594          RK    1440  0.0028   0.013            CIRC       7

 595          KK  050630   BASIN
 596          BA   0.062
 597          LS       0      79       0       0      98       0
 598          UK     138  0.0100    0.31      33
 599          UK      64  0.0100    0.10      67
 600          RK    1205  0.0038    0.02            TRAP      41     1.0
 601          RK    1348  0.0033    0.02            TRAP      60     1.0
```

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

 602          KK  050630 COMBINE
 603          HC       2

 604          KK  050640    FROM  050630
 605          RK    1150  0.0024   0.013            CIRC       8

 606          KK  050710   BASIN
 607          BA   0.005
 608          LS       0      79       0       0      98       0
 609          UK      21  0.0100    0.40      15
 610          UK     200  0.0100    0.10      85
 611          RK     610  0.0038    0.02            TRAP      55     1.0

 612          KK  050720    FROM  050710
 613          RK     316  0.0045   0.013            CIRC     5.5

 614          KK  050720   BASIN
 615          BA   0.028
 616          LS       0      79       0       0      98       0
 617          UK      57  0.0100    0.38      17
 618          UK     188  0.0100    0.10      83
 619          RK     580  0.0038    0.02            TRAP      45     1.0
 620          RK    1594  0.0033    0.02            TRAP      55     1.0

 621          KK  050720   COMBINE
 622          HC       2

 623          KK  050640    FROM  050720
 624          RK     422  0.0045   0.013            CIRC     5.5

 625          KK  050640   BASIN
 626          BA   0.032
 627          LS       0      79       0       0      98       0
 628          UK      64  0.0100    0.37      15
 629          UK     149  0.0100    0.10      85
 630          RK    1605  0.0038    0.02            TRAP      41     1.0
 631          RK    1168  0.0033    0.02            TRAP      60     1.0

 632          KK  050640 COMBINE
 633          HC       3

 634          KK  051510   FROM 050640
 635          RK     700  0.0044   0.013            CIRC     9.5

 636          KK  050810   BASIN
 637          BA   0.013
 638          LS       0      79       0       0      98       0
 639          UK      88  0.0100    0.36      20
 640          UK     200  0.0100    0.10      80
 641          RK     164  0.0033    0.02            TRAP      28     1.0
 642          RK    1031  0.0038    0.02            TRAP      55     1.0
```

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

 643          KK  051510    FROM  050810
 644          RK     705  0.0025   0.013            CIRC     4.0

 645          KK  051510   BASIN
 646          BA   0.010
 647          LS       0      79       0       0      98       0
 648          UK      59  0.0100    0.38      18
 649          UK     200  0.0100    0.10      82
 650          RK     139  0.0038    0.02            TRAP      41     1.0
 651          RK     521  0.0033    0.02            TRAP      71     1.0

 652          KK  051510    COMBINE
 653          HC       3

 654          KK  051520    FROM  051510
 655          RK     680  0.0028   0.013            CIRC     9.5

 656          KK  051610   BASIN
 657          BA   0.021
 658          LS       0      79       0       0      98       0
 659          UK     165  0.0100    0.32      25
 660          UK     200  0.0100    0.10      75
 661          RK     624  0.0038    0.02            TRAP      41     1.0
 662          RK     792  0.0033    0.02            TRAP      60     1.0

 663          KK  051520    FROM  051610
 664          RK     601  0.0047   0.013            CIRC     5.0

 665          KK  051710   BASIN
 666          BA   0.004
 667          LS       0      79       0       0      98       0
 668          UK     146  0.0100    0.33      24
 669          UK     200  0.0100    0.10      76
 670          RK     515  0.0038    0.02            TRAP      30     1.0
 671          RK     287  0.0033    0.02            TRAP      30     1.0

 672          KK  051520    FROM  051710
 673          RK     567  0.0032   0.013            CIRC     4.0

 674          KK  051520   BASIN
 675          BA   0.023
 676          LS       0      79       0       0      98       0
 677          UK     179  0.0100    0.31      26
 678          UK     198  0.0100    0.10      74
 679          RK     473  0.0038    0.02            TRAP      60     1.0
 680          RK     704  0.0033    0.02            TRAP      71     1.0

 681          KK  051520 COMBINE
 682          HC       4
```

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

 683          KK  051530    FROM  051520
 684          RK     926   0.001   0.013            CIRC     9.5

 685          KK  051530   BASIN
 686          BA   0.041
 687          LS       0      79       0       0      98       0
 688          UK      26  0.0100    0.40      15
 689          UK     193  0.0100    0.10      85
 690          RK     889  0.0038    0.02            TRAP      38     1.0
 691          RK     860  0.0033    0.02            TRAP      60     1.0

 692          KK  051530 COMBINE
 693          HC       2

 694          KK  051540    FROM  051530
 695          RK     360   0.001   0.013            CIRC     9.5

 696          KK  051810   BASIN
 697          BA   0.005
 698          LS       0      79       0       0      98       0
 699          UK      23  0.0100    0.40      16
 700          UK     196  0.0100    0.10      84
 701          RK     272  0.0033    0.02            TRAP      19     1.0
 702          RK     272  0.0038    0.02            TRAP      30     1.0

 703          KK  051540    FROM  051810
 704          RK     218  0.0045   0.013            CIRC     4.5

 705          KK  051540   BASIN
 706          BA   0.004
 707          LS       0      79       0       0      98       0
 708          UK      44  0.0100    0.38      16
 709          UK     172  0.0100    0.10      84
 710          RK     233  0.0038    0.02            TRAP      12     1.0
 711          RK     265  0.0033    0.02            TRAP      60     1.0

 712          KK  051540 COMBINE
 713          HC       3

 714          KK  051550    FROM  051540
 715          RK     273   0.001   0.013            CIRC     9.5

 716          KK  051560    FROM  051550
 717          RK     800  0.0038   0.013            CIRC     6.0

 718          KK  051560   BASIN
 719          BA   0.008
 720          LS       0      79       0       0      98       0
 721          UK     116  0.0100    0.33      47
 722          UK      89  0.0100    0.10      53
 723          RK    1126  0.0033    0.02            TRAP      60     1.0
```

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

 724          KK  051560 COMBINE
 725          HC       2
              *
              * Osborn Rd outfall to Indian Bend Wash
              *

 726          KK  051570    FROM  051560
 727          RK     228   0.003   0.013            CIRC     7.0
              *
              * Begin Thomas Rd outfall
              *

 728          KK  05Qspl  Retrieve spill from Paiute Park detention basin
 729          DR  05Qspl

 730          KK  050060    Qspl FROM  05Det
 731          RK     500   0.002   0.027            TRAP       5       1

 732          KK  050070    FROM  050060
 733          RK    1429  0.0033   0.030            TRAP     5.0     1.0

 734          KK  050410   BASIN
 735          BA   0.041
 736          LS       0      79       0       0      98       0
 737          UK      77  0.0100    0.36      25
 738          UK     137  0.0100    0.10      75
 739          RK     694  0.0038    0.02            TRAP      38     1.0
 740          RK    1177  0.0033    0.02            TRAP      38     1.0

 741          KK  050070    FROM  050410
 742          RK     187  0.0038   0.017            TRAP    60.0       1

 743          KK  050070   BASIN
 744          BA   0.084
 745          LS       0      79       0       0      98       0
 746          UK      22  0.0100    0.40       8
 747          UK     198  0.0100    0.10      92
 748          RK    3223  0.0038    0.02            TRAP      38     1.0

 749          KK  050070 COMBINE
 750          HC       3

 751          KK  050080    FROM  050070
 752          RK    1112  0.0027   0.013            CIRC     4.5

 753          KK  050080   BASIN
 754          BA   0.021
 755          LS       0      79       0       0      98       0
 756          UK     132  0.0100    0.31      60
 757          UK      71  0.0100    0.10      40
 758          RK    1365  0.0033    0.02            TRAP      38     1.0
```

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

 759          KK  050080 COMBINE
 760          HC       2

 761          KK  050090    FROM  050080
 762          RK     416  0.0052   0.013            CIRC     4.0

 763          KK  050510   BASIN
 764          BA   0.054
 765          LS       0      79       0       0      98       0
 766          UK     109  0.0100    0.33      48
 767          UK      97  0.0100    0.10      52
 768          RK    1096  0.0038    0.02            TRAP      41     1.0
 769          RK    1304  0.0033    0.02            TRAP      41     1.0

 770          KK  050090    FROM  050510
 771          RK     626  0.0052   0.013            CIRC     4.0

 772          KK  050090   BASIN
 773          BA   0.037
 774          LS       0      79       0       0      98       0
 775          UK      44  0.0100    0.38      23
 776          UK     172  0.0100    0.10      77
 777          RK     965  0.0038    0.02            TRAP      23     1.0
 778          RK    1064  0.0033    0.02            TRAP      45     1.0

 779          KK  050090 COMBINE
 780          HC       3

 781          KK  050100    FROM  050090
 782          RK     609  0.0028   0.013            CIRC     4.5

 783          KK  050100   BASIN
 784          BA   0.045
 785          LS       0      79       0       0      98       0
 786          UK      20  0.0100    0.40       7
 787          UK     200  0.0100    0.10      93
 788          RK     505  0.0033    0.02            TRAP      30     1.0
 789          RK    1727  0.0038    0.02            TRAP      23     1.0

 790          KK  050100 COMBINE
 791          HC       2

 792          KK  050110    FROM  050100
 793          RK     692  0.0058   0.013            CIRC     4.0

 794          KK  050910   BASIN
 795          BA   0.012
 796          LS       0      79       0       0      98       0
 797          UK     170  0.0100    0.32      26
 798          UK     200  0.0100    0.10      74
 799          RK     837  0.0038    0.02            TRAP      38     1.0
```

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

 800          KK  050650    FROM  050910
 801          RK     751  0.0045   0.013            DEEP     5.0

 802          KK  050650   BASIN
 803          BA   0.019
 804          LS       0      79       0       0      98       0
 805          UK      29  0.0100    0.40      16
 806          UK     200  0.0100    0.10      84
 807          RK     598  0.0033    0.02            TRAP      23     1.0
 808          RK     566  0.0038    0.02            TRAP      90     1.0

 809          KK  050650 COMBINE
 810          HC       2

 811          KK  050660    FROM  050650
 812          RK     648  0.0027   0.013            CIRC     7.5

 813          KK  050660   BASIN
 814          BA   0.018
 815          LS       0      79       0       0      98       0
 816          UK      20  0.0100    0.40      15
 817          UK     200  0.0100    0.10      85
 818          RK     578  0.0033    0.02            TRAP      49     1.0
 819          RK     582  0.0038    0.02            TRAP      90     1.0

 820          KK  050660 COMBINE
 821          HC       2

 822          KK  050110    FROM  050660
 823          RK     458  0.0027   0.013            CIRC     7.5

 824          KK  050110   BASIN
 825          BA   0.010
 826          LS       0      79       0       0      98       0
 827          UK      20  0.0100    0.40      15
 828          UK     200  0.0100    0.10      85
 829          RK     587  0.0033    0.02            TRAP      46     1.0
 830          RK     406  0.0038    0.02            TRAP      77     1.0

 831          KK  050110 COMBINE
 832          HC       3

 833          KK  050120    FROM  050110
 834          RK     888  0.0027   0.013            CIRC     7.5

 835          KK  051010   BASIN
 836          BA   0.023
 837          LS       0      79       0       0      98       0
 838          UK     200  0.0100    0.30      28
 839          UK     200  0.0100    0.10      72
 840          RK     517  0.0033    0.02            TRAP      30     1.0
 841          RK     822  0.0038    0.02            TRAP      30     1.0
```

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

 842          KK  1010ST STORAGE
 843          RS       1    STOR
 844          SV       0    0.20    0.70    1.49    1.49
 845          SE      58      59      60      61      62
 846          SQ       0    0.01    0.01    0.01    0.01
 847          ST      61     800     3.0     1.5

 848          KK  051020    FROM  051010
 849          RK     948  0.0033   0.017            TRAP    60.0       1

 850          KK  051110   BASIN
 851          BA   0.025
 852          LS       0      79       0       0      98       0
 853          UK      20  0.0100    0.40      10
 854          UK     200  0.0100    0.10      90
 855          RK     326  0.0038    0.02            TRAP       9     1.0
 856          RK    1382  0.0033    0.02            TRAP      19     1.0

 857          KK  051020    FROM  051110
 858          RK     541  0.0038   0.017            TRAP    33.0       1

 859          KK  051020   BASIN
 860          BA   0.027
 861          LS       0      79       0       0      98       0
 862          UK      64  0.0100    0.37      22
 863          UK     174  0.0100    0.10      78
 864          RK     409  0.0038    0.02            TRAP      26     1.0
 865          RK    1595  0.0033    0.02            TRAP      60     1.0

 866          KK  051020 COMBINE
 867          HC       3

 868          KK  051030    FROM  051020
 869          RK     694  0.0033   0.017            TRAP    60.0       1

 870          KK  051210   BASIN
 871          BA   0.008
 872          LS       0      79       0       0      98       0
 873          UK      20  0.0100    0.40      15
 874          UK     200  0.0100    0.10      85
 875          RK     682  0.0038    0.02            TRAP       9     1.0

 876          KK  051030    FROM  051210
 877          RK     241  0.0038   0.017            TRAP    60.0       1

 878          KK  051310   BASIN
 879          BA   0.003
 880          LS       0      79       0       0      98       0
 881          UK      20  0.0100    0.40       6
 882          UK     200  0.0100    0.10      94
 883          RK     544  0.0033    0.02            TRAP      18     1.0
```

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

 884          KK  051320    FROM  051310
 885          RK     333  0.0038   0.017            TRAP    60.0       1

 886          KK  051320   BASIN
 887          BA   0.009
 888          LS       0      79       0       0      98       0
 889          UK      20  0.0100    0.40       7
 890          UK     200  0.0100    0.10      93
 891          RK     254  0.0038    0.02            TRAP       9     1.0
 892          RK     543  0.0033    0.02            TRAP      18     1.0

 893          KK  051320 COMBINE
 894          HC       2

 895          KK  051030    FROM  051320
 896          RK     960  0.0038   0.017            TRAP    60.0       1

 897          KK  051030   BASIN
 898          BA   0.031
 899          LS       0      79       0       0      98       0
 900          UK      28  0.0100    0.39      13
 901          UK     190  0.0100    0.10      87
 902          RK    2532  0.0033    0.02            TRAP      49     1.0

 903          KK  051030 COMBINE
 904          HC       4

 905          KK  051040    FROM  051030
 906          RK    1501  0.0033   0.017            TRAP    60.0       1

 907          KK  051040   BASIN
 908          BA   0.036
 909          LS       0      79       0       0      98       0
 910          UK     105  0.0100    0.34      39
 911          UK     102  0.0100    0.10      61
 912          RK    1159  0.0038    0.02            TRAP      45     1.0
 913          RK    1501  0.0033    0.02            TRAP      65     1.0

 914          KK  051040 COMBINE
 915          HC       2

 916          KK  050120    FROM  051040
 917          RK    1222   0.003   0.013            TRAP       8

 918          KK  050120   BASIN
 919          BA   0.039
 920          LS       0      79       0       0      98       0
 921          UK      24  0.0100    0.40      14
 922          UK     195  0.0100    0.10      86
 923          RK     763  0.0038    0.02            TRAP      23     1.0
 924          RK    1114  0.0033    0.02            TRAP      90     1.0
```

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

 925          KK  050120 COMBINE
 926          HC       3

 927          KK  050130    FROM  050120
 928          RK    1265  0.0027   0.013            DEEP     7.0

 929          KK  050130   BASIN
 930          BA   0.096
 931          LS       0      79       0       0      98       0
 932          UK      45  0.0100    0.38      15
 933          UK     171  0.0100    0.10      85
 934          RK    1905  0.0038    0.02            TRAP      71     1.0
 935          RK    1212  0.0033    0.02            TRAP      71     1.0

 936          KK  050130 COMBINE
 937          HC       2

 938          KK  050140    FROM  050130
 939          RK    1319  0.0027   0.013            DEEP     7.0

 940          KK  051410   BASIN
 941          BA   0.072
 942          LS       0      79       0       0      98       0
 943          UK      64  0.0100    0.37       9
 944          UK     150  0.0100    0.10      91
 945          RK    1170  0.0033    0.02            TRAP      38     1.0
 946          RK    1180  0.0038    0.02            TRAP      55     1.0

 947          KK  050140    FROM  051410
 948          RK    1367  0.0038   0.017            TRAP    60.0       1

 949          KK  050140   BASIN
 950          BA   0.086
 951          LS       0      79       0       0      98       0
 952          UK      94  0.0100    0.35      25
 953          UK     154  0.0100    0.10      75
 954          RK    1224  0.0038    0.02            TRAP       9     1.0
 955          RK    1267  0.0033    0.02            TRAP      79     1.0

 956          KK  050140 COMBINE
 957          HC       3

 958          KK  050150    FROM  050140
 959          RK    1252  0.0006   0.013            DEEP     5.0

 960          KK  050150   BASIN
 961          BA   0.011
 962          LS       0      79       0       0      98       0
 963          UK     159  0.0100    0.30      57
 964          UK      57  0.0100    0.10      43
 965          RK    1202  0.0033    0.02            TRAP      60     1.0
```

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

 966          KK  050150 COMBINE
 967          HC       2
              *
              * Thomas Rd Outfall to Indian Bend Wash
              *

 968          KK  050160    FROM  050150
 969          RK     332  0.0048   0.013            DEEP     6.0
              *
              * Begin flow in vicinity of Smitty's (61st St and Thomas)
              *

 970          KK  070080
 971          KM   Retrieve overland flow spilled out of 07Det
 972          DR  07Qspl

 973          KK  210110    FROM  070080
 974          RK     800   0.001   0.017            TRAP    30.0       1

 975          KK  210110   BASIN
 976          BA   0.010
 977          LS       0      80       0       0      98       0
 978          UK      69  0.0100    0.36      14
 979          UK     143  0.0100    0.10      86
 980          RK    1449  0.0020    0.02            TRAP      38     1.0

 981          KK  210110 COMBINE
 982          HC       2

 983          KK  210120    FROM  210110
 984          RK     502  0.0020   0.017            TRAP    49.5       1

 985          KK  070508
 986          KM   Retrieve overland flow from CP 070508
 987          DR  508OUT

 988          KK  070509    FROM  070508
 989          RK      83  0.0146   0.017            TRAP    60.0       1

 990          KK  070510    FROM  070509
 991          RK    2200   0.016    0.02            TRAP       9     1.0

 992          KK  070510   BASIN
 993          BA   0.059
 994          LS       0      85       0       0      98       0
 995          UK     151  0.0100    0.30      65
 996          UK      50  0.0100    0.10      35
 997          RK    2139  0.0146    0.03            TRAP       2     3.0
```

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

 998          KK  070510 COMBINE
 999          HC       2

1000          KK  070090    FROM  070510
1001          RK     725  0.0146   0.025            TRAP     9.0       1

1002          KK  070090   BASIN
1003          BA   0.014
1004          LS       0      86       0       0      98       0
1005          UK     136  0.0100    0.31      42
1006          UK      66  0.0100    0.10      58
1007          RK     667  0.0058    0.02            TRAP      30     1.0

1008          KK  070090 COMBINE
1009          HC       2
              *
              * Route flow across Thomas Rd from 070090 to 210120.  There is an existing
              * storm drain in Thomas Rd running west, but it is not big enough to handle
              * the existing flows, therefore these flows will cross Thomas Rd.
              *

1010          KK  210120    FROM  070090
1011          RK     942   0.003   0.017            TRAP    60.0       1

1012          KK  210120   BASIN
1013          BA   0.032
1014          LS       0      84       0       0      98       0
1015          UK      63  0.0100    0.37      20
1016          UK     150  0.0100    0.10      80
1017          RK    1408  0.0032    0.02            TRAP      60     1.0

1018          KK  210120 COMBINE
1019          HC       3

1020          KK  210030    FROM  210120
1021          RK    1181  0.0020   0.017            TRAP    49.5       1

1022          KK  210210   BASIN
1023          BA   0.037
1024          LS       0      79       0       0      98       0
1025          UK     143  0.0100    0.31      62
1026          UK      58  0.0100    0.10      38
1027          RK     469  0.0020    0.02            TRAP      38     1.0
1028          RK    1954  0.0032    0.02            TRAP      38     1.0

1029          KK  210220    FROM  210210
1030          RK     723  0.0032   0.017            TRAP    56.3       1

1031          KK  210220   BASIN
1032          BA   0.012
1033          LS       0      79       0       0      98       0
1034          UK     149  0.0100    0.30      65
1035          UK      51  0.0100    0.10      35
1036          RK     728  0.0032    0.02            TRAP      45     1.0
```

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

1037          KK  210220 COMBINE
1038          HC       2

1039          KK  210030    FROM  210220
1040          RK     719  0.0020   0.017            TRAP    49.5       1

1041          KK  210010   BASIN
1042          BA   0.018
1043          LS       0      79       0       0      98       0
1044          UK      94  0.0100    0.34      26
1045          UK     116  0.0100    0.10      74
1046          RK    1046  0.0032    0.02            TRAP      38     1.0
1047          RK    2498  0.0020    0.02            TRAP      45     1.0

1048          KK  210020    FROM  210010
1049          RK     852  0.0020   0.017            TRAP    45.0       1

1050          KK  210020   BASIN
1051          BA   0.032
1052          LS       0      79       0       0      98       0
1053          UK     150  0.0100    0.30      65
1054          UK      50  0.0100    0.10      35
1055          RK     298  0.0020    0.02            TRAP      34     1.0
1056          RK    1213  0.0032    0.02            TRAP      45     1.0

1057          KK  210020 COMBINE
1058          HC       2

1059          KK  210030    FROM  210020
1060          RK     711  0.0032   0.017            TRAP      45       1

1061          KK  210030   BASIN
1062          BA   0.064
1063          LS       0      79       0       0      98       0
1064          UK     149  0.0100    0.30      62
1065          UK      51  0.0100    0.10      38
1066          RK    1865  0.0020    0.02            TRAP      38     1.0

1067          KK  210030 COMBINE
1068          HC       4
              *
              * AZ Country Club outfall
              *

1069          KK  210040    FROM  210030
1070          RK     368  0.0032   0.017            TRAP    45.0       1
              *

1071          KK  070610
1072          KM   Retrieve overland flows from CP 070610
1073          DR  610OUT
```

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

1074          KK  070620    FROM  070610
1075          RK      83  0.0146   0.017            TRAP    60.0       1

1076          KK  070100    FROM  070620
1077          RK    2833  0.0146   0.025            TRAP     9.0       1

1078          KK  070100   BASIN
1079          BA   0.046
1080          LS       0      85       0       0      98       0
1081          UK     149  0.0100    0.30      57
1082          UK      53  0.0100    0.10      43
1083          RK     942  0.0058    0.02            TRAP      60     1.0
1084          RK    2830  0.0146    0.03            TRAP       2     3.0

1085          KK  070100 COMBINE
1086          HC       2

1087          KK  070110    FROM  070100
1088          RK     492  0.0058   0.017            TRAP    60.0       1

1089          KK  070110   BASIN
1090          BA   0.008
1091          LS       0      85       0       0      98       0
1092          UK     150   0.010    0.30      48
1093          UK      50  0.0100    0.10      52
1094          RK     784   0.013    0.03            TRAP       2     3.0
1095          RK     492  0.0058    0.02            TRAP      60     1.0

1096          KK  070110 COMBINE
1097          HC       2
              *
              * 56th ST and Thomas Rd outfall
              *

1098          KK  070120    FROM  070110
1099          RK     713  0.0058   0.017            TRAP    60.0       1
              *

1100          KK  070808
1101          KM   Retrieve overland flows from 070808
1102          DR  808OUT

1103          KK  070809 FROM  070808
1104          RK      89  0.0146   0.017            TRAP    60.0       1

1105          KK  070810    FROM  070809
1106          RK    3005  0.0146   0.025            TRAP     9.0       1

1107          KK  070810   BASIN
1108          BA   0.041
1109          LS       0      85       0       0      98       0
1110          UK     150  0.0100    0.30      65
1111          UK      50  0.0100    0.10      35
1112          RK    2400   0.020    0.03            TRAP       2     3.0
```

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


1113          KK  070810
1114          HC       2
              *
              * 56th St just south of E Windsor Ave outfall
              *

1115          KK  070820    FROM  070810
1116          RK     106  0.0058   0.017            TRAP    60.0       1
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
1117          ZZ
```

```
                SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

 13      070808
             .
             .
 21          .-------> 808OUT
 20       808PP
             V
             V
 24      070610
             .
             .
 26          .      070610
             .           .
             .           .
 33          .           .-------> 610OUT
 32          .       610PP
             .           .
             .           .
 36      070610............
             V
             V
 38      070508
             .
             .
 40          .      070508
             .           .
             .           .
 47          .           .-------> 508OUT
 46          .       508PP
             .           .
             .           .
 50      070508............
             V
             V
 52      070010
             .
             .
 54          .      070010
             .           .
             .           .
 61          .           .-------> 010OUT
 60          .       010PP
             .           .
             .           .
 64      070010............
             V
             V
 66      070210
             .
             .
 68          .      070209
             .           V
             .           V
 74          .      070210
             .           .
             .           .
 76          .           .      070210
             .           .           .
             .           .           .
 82          .      070210............
```

```
                .           .
                .           .
 85             .           .-------> 210OUT
 84             .       210PP
                .           .
                .           .
 88        070210............
                V
                V
 90        050005
                .
                .
 92             .      050005
                .           .
                .           .
 99             .           .-------> 005OUT
 98             .       005PP
                .           .
                .           .
102        050005............
                V
                V
104        030510
                .
                .
106             .      030509
                .           V
                .           V
111             .      030510
                .           .
                .           .
113             .           .      030510
                .           .           .
                .           .           .
119             .      030510............
                .           .
                .           .
122             .           .------->   510RD
121             .       510PP
                .           .
                .           .
125             .           .      030809
                .           .           V
                .           .           V
130             .           .      030810
                .           .           .
                .           .           .
132             .           .           .      030810
                .           .           .           .
                .           .           .           .
139             .           .      030810............
                .           .           .
                .           .           .
142             .           .           .------->   810RD
141             .           .       810PP
                .           .           V
                .           .           V
145             .           .      030510
                .           .           .
                .           .           .
147        030510........................
                V
                V
149        030520
                .
                .
```

```
151          .      030710
             .          V
             .          V
158          .      030720
             .          .
             .          .
160          .          .      030720
             .          .           .
             .          .           .
167          .      030720............
             .          V
             .          V
169          .      030520
             .          .
             .          .
171          .          .      030520
             .          .           .
             .          .           .
178          .      030520............
             .          .
             .          .
182          .          .------->   520RD
180          .       520PP
             .          .
             .          .
186          .          .           .<-------   510RD
185          .          .      030510
             .          .           V
             .          .           V
187          .          .      030520
             .          .           .
             .          .           .
190          .          .           .           .<-------   520RD
189          .          .           .      030520
             .          .           .           .
             .          .           .           .
191          .          .      030520............
             .          .           V
             .          .           V
193          .          .      030540
             .          .           .
             .          .           .
196          .          .           .           .<-------   810RD
195          .          .           .      030810
             .          .           .           V
             .          .           .           V
197          .          .           .      030540
             .          .           .           .
             .          .           .           .
199          .          .           .           .      030540
             .          .           .           .           .
             .          .           .           .           .
206          .          .           .           .           .      030550
             .          .           .           .           .           .
             .          .           .           .           .           .
212          .          .      030550.................................
             .          .           V
             .          .           V
214          .          .        AUTO
             .          .           V
             .          .           V
219          .          .      030530
             .          .           .
             .          .           .
221          .          .           .      030530
             .          .           .           .
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            .           .           .           .
228         .           .      030530............
            .           .           V
            .           .           V
230         .           .      030520
            .           .           .
            .           .           .
232     030520........................
            V
            V
234     040120
            .
            .
236         .      040110
            .           V
            .           V
243         .      040120
            .           .
            .           .
245         .           .      040120
            .           .           .
            .           .           .
252     040120........................
            V
            V
254     040130
            .
            .
256         .      040130
            .           .
            .           .
262     040130............
            V
            V
264     040040
            .
            .
266         .      040010
            .           V
            .           V
273         .      040020
            .           .
            .           .
275         .           .      040020
            .           .           .
            .           .           .
281         .      040020............
            .           V
            .           V
283         .      040030
            .           .
            .           .
285         .           .      040030
            .           .           .
            .           .           .
291         .      040030............
            .           V
            .           V
293         .      040040
            .           .
            .           .
295         .           .      040210
            .           .           V
            .           .           V
301         .           .      040040
            .           .           .
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                .          .          .
303             .          .          .      040040
                .          .          .           .
                .          .          .           .
309        040040.................................
                V
                V
311        040050
                .
                .
313             .      040310
                .           V
                .           V
319             .      040050
                .           .
                .           .
321             .           .      040050
                .           .           .
                .           .           .
328        040050......................
                V
                V
330        040060
                .
                .
332             .      040060
                .           .
                .           .
338        040060............
                V
                V
340        040070
                .
                .
344             .           .<-------  010OUT
342             .      070010
                .           V
                .           V
345             .      070020
                .           V
                .           V
347             .      070030
                .           .
                .           .
349             .           .      070030
                .           .           .
                .           .           .
355             .      070030............
                .           V
                .           V
357             .      070040
                .           .
                .           .
361             .           .           .<-------  210OUT
359             .           .      070210
                .           .           V
                .           .           V
362             .           .      070220
                .           .           V
                .           .           V
364             .           .      070040
                .           .           .
                .           .           .
366             .           .           .      070040
                .           .           .           .
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372          .      070040.......................
             .          V
             .          V
374          .      070050
             .          .
             .          .
376          .          .      070050
             .          .           .
             .          .           .
383          .      070050............
             .          V
             .          V
385          .      070060
             .          .
             .          .
387          .          .      070310
             .          .           V
             .          .           V
394          .          .      070060
             .          .           .
             .          .           .
396          .          .           .      070060
             .          .           .           .
             .          .           .           .
402          .      070060.......................
             .          V
             .          V
404          .      070070
             .          .
             .          .
406          .          .      070070
             .          .           .
             .          .           .
412          .          .           .      070080
             .          .           .           .
             .          .           .           .
418          .      070080.......................
             .          V
             .          V
420          .       07Det
             .          .
             .          .
426          .          .-------> 07Qspl
425          .      07Qpip
             .          V
             .          V
429          .      070420
             .          .
             .          .
431          .          .      070410
             .          .           V
             .          .           V
437          .          .      070420
             .          .           .
             .          .           .
439          .          .           .      070420
             .          .           .           .
             .          .           .           .
445          .      070420.......................
             .          V
             .          V
447          .      210005
             .          .
             .          .
449          .          .      210005
             .          .           .
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                .          .          .
456             .     210005............
                .          V
                .          V
458             .     050030
                .          .
                .          .
462             .          .          .<-------  005OUT
460             .          .     050005
                .          .          V
                .          .          V
463             .          .     050010
                .          .          .
                .          .          .
465             .          .          .     050010
                .          .          .          .
                .          .          .          .
472             .          .     050010............
                .          .          V
                .          .          V
474             .          .     050020
                .          .          .
                .          .          .
476             .          .          .     050210
                .          .          .          V
                .          .          .          V
483             .          .          .      210ST
                .          .          .          V
                .          .          .          V
489             .          .          .     050020
                .          .          .          .
                .          .          .          .
491             .          .          .          .     050020
                .          .          .          .          .
                .          .          .          .          .
497             .          .     050020........................
                .          .          V
                .          .          V
499             .          .     050030
                .          .          .
                .          .          .
501             .          .          .     050030
                .          .          .          V
                .          .          .          V
508             .          .          .      030ST
                .          .          .          .
                .          .          .          .
514             .     050030........................
                .          V
                .          V
516             .     050305
                .          V
                .          V
518             .     050050
                .          .
                .          .
520             .          .     050040
                .          .          V
                .          .          V
527             .          .     40STOR
                .          .          V
                .          .          V
532             .          .     050050
                .          .          .
                .          .          .
534             .          .          .     050310
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          .          .          .
          .          .          .
541       .          .          .     050065
          .          .          .          .
          .          .          .          .
547       .          .          .          .     050060
          .          .          .          .          .
          .          .          .          .          .
553       .     050050.............................................
          .         V
          .         V
555       .      05Det
          .         .
          .         .
561       .         .-------> 05Qspl
560       .     05Qpip
          .         .
          .         .
564       .         .     050062
          .         .          V
          .         .          V
571       .         .     050610
          .         .          .
          .         .          .
573       .         .          .     050610
          .         .          .          .
          .         .          .          .
580       .     050610......................
          .         V
          .         V
582       .     050620
          .         .
          .         .
584       .         .     050620
          .         .          .
          .         .          .
591       .     050620............
          .         V
          .         V
593       .     050630
          .         .
          .         .
595       .         .     050630
          .         .          .
          .         .          .
602       .     050630............
          .         V
          .         V
604       .     050640
          .         .
          .         .
606       .         .     050710
          .         .          V
          .         .          V
612       .         .     050720
          .         .          .
          .         .          .
614       .         .          .     050720
          .         .          .          .
          .         .          .          .
621       .         .     050720............
          .         .          V
          .         .          V
623       .         .     050640
          .         .          .
          .         .          .
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625          .          .          .      050640
             .          .          .           .
             .          .          .           .
632          .     050640.......................
             .          V
             .          V
634          .     051510
             .          .
             .          .
636          .          .     050810
             .          .          V
             .          .          V
643          .          .     051510
             .          .          .
             .          .          .
645          .          .          .      051510
             .          .          .           .
             .          .          .           .
652          .     051510.......................
             .          V
             .          V
654          .     051520
             .          .
             .          .
656          .          .     051610
             .          .          V
             .          .          V
663          .          .     051520
             .          .          .
             .          .          .
665          .          .          .      051710
             .          .          .           V
             .          .          .           V
672          .          .          .      051520
             .          .          .           .
             .          .          .           .
674          .          .          .           .      051520
             .          .          .           .           .
             .          .          .           .           .
681          .     051520.................................
             .          V
             .          V
683          .     051530
             .          .
             .          .
685          .          .     051530
             .          .          .
             .          .          .
692          .     051530............
             .          V
             .          V
694          .     051540
             .          .
             .          .
696          .          .     051810
             .          .          V
             .          .          V
703          .          .     051540
             .          .          .
             .          .          .
705          .          .          .      051540
             .          .          .           .
             .          .          .           .
712          .     051540.......................
             .          V
             .          V
```

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714          .      051550
             .          V
             .          V
716          .      051560
             .          .
             .          .
718          .          .      051560
             .          .          .
             .          .          .
724          .      051560............
             .          V
             .          V
726          .      051570
             .          .
             .          .
729          .          .          .<-------  05Qspl
728          .          .      05Qspl
             .          .          V
             .          .          V
730          .          .      050060
             .          .          V
             .          .          V
732          .          .      050070
             .          .          .
             .          .          .
734          .          .          .      050410
             .          .          .          V
             .          .          .          V
741          .          .          .      050070
             .          .          .          .
             .          .          .          .
743          .          .          .          .      050070
             .          .          .          .           .
             .          .          .          .           .
749          .          .      050070........................
             .          .          V
             .          .          V
751          .          .      050080
             .          .          .
             .          .          .
753          .          .          .      050080
             .          .          .          .
             .          .          .          .
759          .          .      050080............
             .          .          V
             .          .          V
761          .          .      050090
             .          .          .
             .          .          .
763          .          .          .      050510
             .          .          .          V
             .          .          .          V
770          .          .          .      050090
             .          .          .          .
             .          .          .          .
772          .          .          .          .      050090
             .          .          .          .           .
             .          .          .          .           .
779          .          .      050090........................
             .          .          V
             .          .          V
781          .          .      050100
             .          .          .
             .          .          .
783          .          .          .      050100
             .          .          .          .
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790          .          .     050100............
             .          .         V
             .          .         V
792          .          .     050110
             .          .         .
             .          .         .
794          .          .         .     050910
             .          .         .         V
             .          .         .         V
800          .          .         .     050650
             .          .         .         .
             .          .         .         .
802          .          .         .         .     050650
             .          .         .         .         .
             .          .         .         .         .
809          .          .         .     050650............
             .          .         .         V
             .          .         .         V
811          .          .         .     050660
             .          .         .         .
             .          .         .         .
813          .          .         .         .     050660
             .          .         .         .         .
             .          .         .         .         .
820          .          .         .     050660............
             .          .         .         V
             .          .         .         V
822          .          .         .     050110
             .          .         .         .
             .          .         .         .
824          .          .         .         .     050110
             .          .         .         .         .
             .          .         .         .         .
831          .          .     050110........................
             .          .         V
             .          .         V
833          .          .     050120
             .          .         .
             .          .         .
835          .          .         .     051010
             .          .         .         V
             .          .         .         V
842          .          .         .     1010ST
             .          .         .         V
             .          .         .         V
848          .          .         .     051020
             .          .         .         .
             .          .         .         .
850          .          .         .         .     051110
             .          .         .         .         V
             .          .         .         .         V
857          .          .         .         .     051020
             .          .         .         .         .
             .          .         .         .         .
859          .          .         .         .         .     051020
             .          .         .         .         .         .
             .          .         .         .         .         .
866          .          .         .     051020........................
             .          .         .         V
             .          .         .         V
868          .          .         .     051030
             .          .         .         .
             .          .         .         .
870          .          .         .         .     051210
             .          .         .         .         V
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                .         .         .         .         V
876             .         .         .         .    051030
                .         .         .         .         .
                .         .         .         .         .
878             .         .         .         .         .    051310
                .         .         .         .         .         V
                .         .         .         .         .         V
884             .         .         .         .         .    051320
                .         .         .         .         .         .
                .         .         .         .         .         .
886             .         .         .         .         .         .    051320
                .         .         .         .         .         .         .
                .         .         .         .         .         .         .
893             .         .         .         .         .    051320............
                .         .         .         .         .         V
                .         .         .         .         .         V
895             .         .         .         .         .    051030
                .         .         .         .         .         .
                .         .         .         .         .         .
897             .         .         .         .         .         .    051030
                .         .         .         .         .         .         .
                .         .         .         .         .         .         .
903             .         .         .    051030.................................
                .         .         .         V
                .         .         .         V
905             .         .         .    051040
                .         .         .         .
                .         .         .         .
907             .         .         .         .    051040
                .         .         .         .         .
                .         .         .         .         .
914             .         .         .    051040............
                .         .         .         V
                .         .         .         V
916             .         .         .    050120
                .         .         .         .
                .         .         .         .
918             .         .         .         .    050120
                .         .         .         .         .
                .         .         .         .         .
925             .         .    050120........................
                .         .         V
                .         .         V
927             .         .    050130
                .         .         .
                .         .         .
929             .         .         .    050130
                .         .         .         .
                .         .         .         .
936             .         .    050130............
                .         .         V
                .         .         V
938             .         .    050140
                .         .         .
                .         .         .
940             .         .         .    051410
                .         .         .         V
                .         .         .         V
947             .         .         .    050140
                .         .         .         .
                .         .         .         .
949             .         .         .         .    050140
                .         .         .         .         .
                .         .         .         .         .
956             .         .    050140........................
                .         .         V
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                .         .         V
 958            .         .    050150
                .         .         .
                .         .         .
 960            .         .         .    050150
                .         .         .         .
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 966            .         .    050150............
                .         .         V
                .         .         V
 968            .         .    050160
                .         .         .
                .         .         .
 972            .         .         .         .<-------  07Qspl
 970            .         .         .    070080
                .         .         .         V
                .         .         .         V
 973            .         .         .    210110
                .         .         .         .
                .         .         .         .
 975            .         .         .         .      210110
                .         .         .         .           .
                .         .         .         .           .
 981            .         .         .    210110............
                .         .         .         V
                .         .         .         V
 983            .         .         .    210120
                .         .         .         .
                .         .         .         .
 987            .         .         .         .           .<-------  508OUT
 985            .         .         .         .      070508
                .         .         .         .           V
                .         .         .         .           V
 988            .         .         .         .      070509
                .         .         .         .           V
                .         .         .         .           V
 990            .         .         .         .      070510
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 992            .         .         .         .           .      070510
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 998            .         .         .         .      070510............
                .         .         .         .           V
                .         .         .         .           V
1000            .         .         .         .      070090
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1002            .         .         .         .           .      070090
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1008            .         .         .         .      070090............
                .         .         .         .           V
                .         .         .         .           V
1010            .         .         .         .      210120
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1012            .         .         .         .           .      210120
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                .         .         .         .           .           .
1018            .         .         .    210120........................
                .         .         .         V
                .         .         .         V
1020            .         .         .    210030
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1022          .          .          .          .     210210
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1029          .          .          .          .     210220
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1031          .          .          .          .          .     210220
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1037          .          .          .          .     210220............
              .          .          .          .          V
              .          .          .          .          V
1039          .          .          .          .     210030
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1041          .          .          .          .          .     210010
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              .          .          .          .          .          V
1048          .          .          .          .          .     210020
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1050          .          .          .          .          .          .     210020
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1057          .          .          .          .          .     210020............
              .          .          .          .          .          V
              .          .          .          .          .          V
1059          .          .          .          .          .     210030
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1061          .          .          .          .          .          .     210030
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1067          .          .          .     210030.................................
              .          .          .          V
              .          .          .          V
1069          .          .          .     210040
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1073          .          .          .          .          .<-------  6100UT
1071          .          .          .          .     070610
              .          .          .          .          V
              .          .          .          .          V
1074          .          .          .          .     070620
              .          .          .          .          V
              .          .          .          .          V
1076          .          .          .          .     070100
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1078          .          .          .          .          .     070100
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1085          .          .          .          .     070100............
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1087          .          .          .          .     070110
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1089          .          .          .          .          .     070110
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1096          .          .          .          .     070110............
              .          .          .          .          V
              .          .          .          .          V
1098          .          .          .          .     070120
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1102            .         .         .         .         .          .<-------  808OUT
1100            .         .         .         .         .     070808
                .         .         .         .         .          V
                .         .         .         .         .          V
1103            .         .         .         .         .     070809
                .         .         .         .         .          V
                .         .         .         .         .          V
1105            .         .         .         .         .     070810
                .         .         .         .         .          .
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1107            .         .         .         .         .          .      070810
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1113            .         .         .         .         .     070810............
                .         .         .         .         .          V
                .         .         .         .         .          V
1115            .         .         .         .         .     070820
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: A-610R2.hc1

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****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
*              MAY   1991              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
*           VERSION 4.0.1E             *                                    *          609 SECOND STREET           *
*                                      *                                    *       DAVIS, CALIFORNIA 95616        *
*  RUN DATE  11/10/1997  TIME  16:40:31 *                                    *           (916) 756-1104             *
*                                      *                                    *                                      *
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                         STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
                         SCOTTSDALE - TEMPE - PHOENIX
                         ************************************************************************

                         Kimley-Horn and Associates, Inc.
                         KVL Consultants, Inc.

                         10-Year, 6-Hour Storm Event
                         10/97

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

   IT           HYDROGRAPH TIME DATA
                       NMIN           2  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        0958  ENDING TIME
                      ICENT          19  CENTURY MARK

                 COMPUTATION INTERVAL    0.03 HOURS
                      TOTAL TIME BASE    9.97 HOURS

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

      *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


      *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


      *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT
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*** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT

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*** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT

*** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  1
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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	070808	12.	3.43	2.	1.	1.	0.02		
DIVERSION TO	808OUT	0.	3.43	0.	0.	0.	0.02		
HYDROGRAPH AT	808PP	12.	3.43	2.	1.	1.	0.02		
ROUTED TO	070610	12.	3.43	2.	1.	1.	0.02		
HYDROGRAPH AT	070610	5.	3.43	1.	0.	0.	0.01		
DIVERSION TO	610OUT	0.	3.40	0.	0.	0.	0.01		
HYDROGRAPH AT	610PP	5.	3.40	1.	0.	0.	0.01		
2 COMBINED AT	070610	17.	3.43	3.	2.	2.	0.02		
ROUTED TO	070508	17.	3.43	3.	2.	2.	0.02		
HYDROGRAPH AT	070508	4.	3.50	1.	0.	0.	0.01		
DIVERSION TO	508OUT	0.	3.50	0.	0.	0.	0.01		
HYDROGRAPH AT	508PP	4.	3.50	1.	0.	0.	0.01		
2 COMBINED AT	070508	21.	3.47	3.	2.	2.	0.03		
ROUTED TO	070010	21.	3.47	3.	2.	2.	0.03		
HYDROGRAPH AT	070010	7.	3.43	1.	1.	1.	0.01		
DIVERSION TO	010OUT	0.	3.43	0.	0.	0.	0.01		
HYDROGRAPH AT	010PP	6.	3.43	1.	1.	1.	0.01		
2 COMBINED AT	070010	27.	3.47	4.	3.	3.	0.04		
ROUTED TO	070210	27.	3.47	4.	3.	3.	0.04		
HYDROGRAPH AT	070209	12.	3.47	2.	1.	1.	0.02		
ROUTED TO	070210	12.	3.47	2.	1.	1.	0.02		
HYDROGRAPH AT	070210	5.	3.47	1.	0.	0.	0.01		
2 COMBINED AT	070210	17.	3.47	3.	2.	2.	0.03		
DIVERSION TO	210OUT	0.	3.43	0.	0.	0.	0.03		
HYDROGRAPH AT	210PP	17.	3.43	3.	2.	2.	0.03		
2 COMBINED AT	070210	44.	3.47	7.	4.	4.	0.07		
ROUTED TO	050005	44.	3.47	7.	4.	4.	0.07		
HYDROGRAPH AT	050005	21.	3.53	3.	2.	2.	0.04		
DIVERSION TO	005OUT	0.	3.53	0.	0.	0.	0.04		

HYDROGRAPH AT	005PP	21.	3.53	3.	2.	2.	0.04
2 COMBINED AT	050005	64.	3.47	10.	6.	6.	0.11
ROUTED TO	030510	64.	3.50	10.	6.	6.	0.11
HYDROGRAPH AT	030509	12.	3.33	1.	1.	1.	0.02
ROUTED TO	030510	12.	3.47	1.	1.	1.	0.02
HYDROGRAPH AT	030510	62.	3.13	8.	5.	5.	0.07
2 COMBINED AT	030510	62.	3.13	9.	6.	6.	0.09
DIVERSION TO	510RD	0.	3.13	0.	0.	0.	0.09
HYDROGRAPH AT	510PP	62.	3.13	9.	6.	6.	0.09
HYDROGRAPH AT	030809	10.	3.33	1.	1.	1.	0.01
ROUTED TO	030810	9.	3.47	1.	1.	1.	0.01
HYDROGRAPH AT	030810	37.	3.57	6.	4.	4.	0.07
2 COMBINED AT	030810	45.	3.57	7.	4.	4.	0.08
DIVERSION TO	810RD	0.	3.57	0.	0.	0.	0.08
HYDROGRAPH AT	810PP	45.	3.57	7.	4.	4.	0.08
ROUTED TO	030510	45.	3.57	7.	4.	4.	0.08
3 COMBINED AT	030510	159.	3.50	27.	16.	16.	0.28
ROUTED TO	030520	159.	3.50	27.	16.	16.	0.28
HYDROGRAPH AT	030710	28.	3.10	2.	1.	1.	0.02
ROUTED TO	030720	27.	3.13	2.	1.	1.	0.02
HYDROGRAPH AT	030720	29.	3.13	3.	2.	2.	0.03
2 COMBINED AT	030720	57.	3.13	5.	3.	3.	0.05
ROUTED TO	030520	55.	3.17	5.	3.	3.	0.05
HYDROGRAPH AT	030520	46.	3.10	4.	3.	3.	0.04
2 COMBINED AT	030520	94.	3.13	10.	6.	6.	0.09
DIVERSION TO	520RD	4.	3.13	0.	0.	0.	0.09
HYDROGRAPH AT	520PP	90.	3.13	10.	6.	6.	0.09
HYDROGRAPH AT	030510	0.	3.10	0.	0.	0.	0.00
ROUTED TO	030520	0.	4.53	0.	0.	0.	0.00
HYDROGRAPH AT	030520	4.	3.13	0.	0.	0.	0.00
2 COMBINED AT	030520	4.	3.13	0.	0.	0.	0.00
ROUTED TO	030540	4.	3.40	0.	0.	0.	0.00
HYDROGRAPH AT	030810	0.	3.50	0.	0.	0.	0.00

ROUTED TO	030540	0.	5.20	0.	0.	0.	0.00
HYDROGRAPH AT	030540	43.	3.13	5.	3.	3.	0.04
HYDROGRAPH AT	030550	94.	3.13	7.	5.	5.	0.04
4 COMBINED AT	030550	137.	3.13	12.	7.	7.	0.08
ROUTED TO	AUTO	116.	3.20	85.	84.	84.	0.08
ROUTED TO	030530	115.	3.20	85.	84.	84.	0.08
HYDROGRAPH AT	030530	47.	3.13	5.	3.	3.	0.04
2 COMBINED AT	030530	154.	3.20	90.	87.	87.	0.13
ROUTED TO	030520	152.	3.20	90.	87.	87.	0.13
3 COMBINED AT	030520	327.	3.20	126.	110.	110.	0.49
ROUTED TO	040120	325.	3.23	126.	110.	110.	0.49
HYDROGRAPH AT	040110	47.	3.20	6.	4.	4.	0.05
ROUTED TO	040120	47.	3.20	6.	4.	4.	0.05
HYDROGRAPH AT	040120	117.	3.20	13.	8.	8.	0.11
3 COMBINED AT	040120	483.	3.23	145.	121.	121.	0.66
ROUTED TO	040130	483.	3.23	145.	121.	121.	0.66
HYDROGRAPH AT	040130	36.	3.07	3.	2.	2.	0.02
2 COMBINED AT	040130	499.	3.23	148.	123.	123.	0.68
ROUTED TO	040040	498.4	3.23	148.	123.	123.	0.68
HYDROGRAPH AT	040010	41.	3.13	4.	2.	2.	0.04
ROUTED TO	040020	40.	3.17	4.	2.	2.	0.04
HYDROGRAPH AT	040020	32.	3.23	4.	3.	3.	0.04
2 COMBINED AT	040020	70.	3.20	9.	5.	5.	0.08
ROUTED TO	040030	69.	3.23	8.	5.	5.	0.08
HYDROGRAPH AT	040030	61.	3.20	7.	4.	4.	0.06
2 COMBINED AT	040030	130.	3.23	16.	10.	10.	0.14
ROUTED TO	040040	129.3	3.33	16.	10.	10.	0.14
HYDROGRAPH AT	040210	19.	3.10	1.	1.	1.	0.01
ROUTED TO	040040	18.2	3.27	2.	1.	1.	0.01
HYDROGRAPH AT	040040	84.1	3.20	8.	5.	5.	0.04
4 COMBINED AT	040040	693.	3.27	173.	138.	138.	0.88
ROUTED TO	040050	687.	3.27	173.	138.	138.	0.88
HYDROGRAPH AT	040310	91.	3.10	8.	5.	5.	0.06

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Kimlee-Horn
ORIGINAL OUTPUT
SUMMARY

upstream

downstream

ROUTED TO	030540	0.	5.20	0.	0.	0.	0.00		
HYDROGRAPH AT	030540	43.	3.13	5.	3.	3.	0.04		
HYDROGRAPH AT	030550	94.	3.13	7.	5.	5.	0.04		
4 COMBINED AT	030550	137.	3.13	12.	7.	7.	0.08		
ROUTED TO	AUTO	116.	3.20	85.	84.	84.	0.08	62.19	3.20
ROUTED TO	030530	115.	3.20	85.	84.	84.	0.08		
HYDROGRAPH AT	030530	47.	3.13	5.	3.	3.	0.04		
2 COMBINED AT	030530	154.	3.20	90.	87.	87.	0.13		
ROUTED TO	030520	152.	3.20	90.	87.	87.	0.13		
3 COMBINED AT	030520	327.	3.20	126.	110.	110.	0.49		
ROUTED TO	040120	325.	3.23	126.	110.	110.	0.49		
HYDROGRAPH AT	040110	47.	3.20	6.	4.	4.	0.05		
ROUTED TO	040120	47.	3.20	6.	4.	4.	0.05		
HYDROGRAPH AT	040120	117.	3.20	13.	8.	8.	0.11		
3 COMBINED AT	040120	483.	3.23	145.	121.	121.	0.66		
ROUTED TO	040130	483.	3.23	145.	121.	121.	0.66		
HYDROGRAPH AT	040130	36.	3.07	3.	2.	2.	0.02		
2 COMBINED AT	040130	499.	3.23	148.	123.	123.	0.68		
ROUTED TO	040040	498. 4	3.23	148.	123.	123.	0.68		
HYDROGRAPH AT	040010	41.	3.13	4.	2.	2.	0.04		
ROUTED TO	040020	40.	3.17	4.	2.	2.	0.04		
HYDROGRAPH AT	040020	32.	3.23	4.	3.	3.	0.04		
2 COMBINED AT	040020	70.	3.20	9.	5.	5.	0.08		
ROUTED TO	040030	69.	3.23	8.	5.	5.	0.08		
HYDROGRAPH AT	040030	61.	3.20	7.	4.	4.	0.06		
2 COMBINED AT	040030	130.	3.23	16.	10.	10.	0.14		
ROUTED TO	040040	129. 3	3.33	16.	10.	10.	0.14		
HYDROGRAPH AT	040210	19.	3.10	1.	1.	1.	0.01		
ROUTED TO	040040	18. 2	3.27	2.	1.	1.	0.01		
HYDROGRAPH AT	040040	84. 1	3.20	8.	5.	5.	0.04		
4 COMBINED AT	040040	693.	3.27	173.	138.	138.	0.88		
ROUTED TO	040050	687.	3.27	173.	138.	138.	0.88		
HYDROGRAPH AT	040310	91.	3.10	8.	5.	5.	0.06		

upstream

downstream

ROUTED TO	040050	89.	3.17	8.	5.	5.	0.06		
HYDROGRAPH AT	040050	142.	3.20	14.	9.	9.	0.11		
3 COMBINED AT	040050	866.	3.27	195.	151.	151.	1.05		
ROUTED TO	040060	866.	3.27	195.	151.	151.	1.05		
HYDROGRAPH AT	040060	47.	3.10	4.	2.	2.	0.02		
2 COMBINED AT	040060	890.	3.27	198.	154.	154.	1.07		
ROUTED TO	040070	889.	3.27	199.	154.	154.	1.07		
HYDROGRAPH AT	070010	0.	3.37	0.	0.	0.	0.00		
ROUTED TO	070020	0.	3.47	0.	0.	0.	0.00		
ROUTED TO	070030	0.	3.67	0.	0.	0.	0.00		
HYDROGRAPH AT	070030	5.	3.07	1.	0.	0.	0.00		
2 COMBINED AT	070030	5.	3.07	1.	0.	0.	0.00		
ROUTED TO	070040	5.	3.10	1.	0.	0.	0.00		
HYDROGRAPH AT	070210	0.	3.47	0.	0.	0.	0.00		
ROUTED TO	070220	0.	3.47	0.	0.	0.	0.00		
ROUTED TO	070040	0.	3.77	0.	0.	0.	0.00		
HYDROGRAPH AT	070040	5.	3.20	1.	0.	0.	0.01		
3 COMBINED AT	070040	9.	3.13	1.	1.	1.	0.01		
ROUTED TO	070050	9.	3.17	1.	1.	1.	0.01		
HYDROGRAPH AT	070050	24.	3.07	2.	1.	1.	0.02		
2 COMBINED AT	070050	30.	3.10	4.	2.	2.	0.03		
ROUTED TO	070060	30.	3.13	4.	2.	2.	0.03		
HYDROGRAPH AT	070310	30.	3.07	3.	2.	2.	0.02		
ROUTED TO	070060	30.	3.10	3.	2.	2.	0.02		
HYDROGRAPH AT	070060	25.	3.10	3.	2.	2.	0.02		
3 COMBINED AT	070060	84.	3.10	9.	6.	6.	0.07		
ROUTED TO	070070	82.	3.13	9.	6.	6.	0.07		
HYDROGRAPH AT	070070	42.	3.07	4.	3.	3.	0.03		
HYDROGRAPH AT	070080	52.	3.13	4.	2.	2.	0.02		
3 COMBINED AT	070080	168.	3.13	17.	10.	10.	0.12		
ROUTED TO	07Det	46.	3.67	17.	10.	10.	0.12	69.95	3.67
DIVERSION TO	07Qspl	0.	3.67	0.	0.	0.	0.12		
HYDROGRAPH AT	07Qpip	46.	3.67	17.	10.	10.	0.12		

ROUTED TO	070420	46.	3.67	17.	10.	10.	0.12		
HYDROGRAPH AT	070410	17.	3.13	2.	1.	1.	0.01		
ROUTED TO	070420	17.	3.13	2.	1.	1.	0.01		
HYDROGRAPH AT	070420	5.	3.20	0.	0.	0.	0.00		
3 COMBINED AT	070420	59.	3.20	19.	12.	12.	0.14		
ROUTED TO	210005	59.	3.20	19.	12.	12.	0.14		
HYDROGRAPH AT	210005	13.	3.23	1.	1.	1.	0.01		
2 COMBINED AT	210005	72.	3.23	20.	12.	12.	0.15		
ROUTED TO	050030	72.	3.23	20.	12.	12.	0.15		
HYDROGRAPH AT	050005	0.	3.40	0.	0.	0.	0.00		
ROUTED TO	050010	0.	4.63	0.	0.	0.	0.00		
HYDROGRAPH AT	050010	96.	3.13	8.	5.	5.	0.07		
2 COMBINED AT	050010	96.	3.13	8.	5.	5.	0.07		
ROUTED TO	050020	93.	3.17	8.	5.	5.	0.07		
HYDROGRAPH AT	050210	100.	3.13	8.	5.	5.	0.05		
ROUTED TO	210ST	0.	5.53	0.	0.	0.	0.05	0.55	9.97
ROUTED TO	050020	0.	4.73	0.	0.	0.	0.05		
HYDROGRAPH AT	050020	13.	3.17	1.	1.	1.	0.01		
3 COMBINED AT	050020	106.	3.17	10.	6.	6.	0.13		
ROUTED TO	050030	103.	3.20	10.	6.	6.	0.13		
HYDROGRAPH AT	050030	54.	3.10	3.	2.	2.	0.02		
ROUTED TO	030ST	20.	3.27	2.	1.	1.	0.02	68.13	3.27
3 COMBINED AT	050030	190.	3.20	32.	20.	20.	0.30		
ROUTED TO	050305	188.	3.20	32.	20.	20.	0.30		
ROUTED TO	050050	186.	3.27	32.	20.	20.	0.30		
HYDROGRAPH AT	050040	105.	3.20	12.	7.	7.	0.10		
ROUTED TO	40STOR	37.	3.67	12.	7.	7.	0.10	61.58	3.67
ROUTED TO	050050	37.	3.67	12.	7.	7.	0.10		
HYDROGRAPH AT	050310	75.	3.13	6.	4.	4.	0.04		
HYDROGRAPH AT	050065	37.	3.07	2.	1.	1.	0.01		
HYDROGRAPH AT	050060	53.	3.17	5.	3.	3.	0.03		
5 COMBINED AT	050050	341.	3.23	58.	35.	35.	0.48		
ROUTED TO	05Det	71.	4.70	55.	36.	36.	0.48	54.77	4.70

DIVERSION TO	05Qspl	0.	4.70	0.	0.	0.	0.48
HYDROGRAPH AT	05Qpip	71.	4.70	55.	36.	36.	0.48
HYDROGRAPH AT	050062	40.	3.07	2.	1.	1.	0.01
ROUTED TO	050610	38.	3.13	2.	1.	1.	0.01
HYDROGRAPH AT	050610	99.	3.17	10.	6.	6.	0.08
3 COMBINED AT	050610	173.	3.17	67.	43.	43.	0.58
ROUTED TO	050620	172.	3.17	67.	43.	43.	0.58
HYDROGRAPH AT	050620	111.	3.17	12.	7.	7.	0.10
2 COMBINED AT	050620	283.	3.17	78.	50.	50.	0.67
ROUTED TO	050630	279.	3.20	78.	50.	50.	0.67
HYDROGRAPH AT	050630	120.	3.13	9.	6.	6.	0.06
2 COMBINED AT	050630	376.	3.17	87.	56.	56.	0.74
ROUTED TO	050640	375.	3.20	87.	56.	56.	0.74
HYDROGRAPH AT	050710	11.	3.13	1.	1.	1.	0.00
ROUTED TO	050720	11.	3.17	1.	1.	1.	0.00
HYDROGRAPH AT	050720	54.	3.20	5.	3.	3.	0.03
2 COMBINED AT	050720	64.	3.20	6.	3.	3.	0.03
ROUTED TO	050640	63.	3.20	6.	3.	3.	0.03
HYDROGRAPH AT	050640	65.	3.20	6.	3.	3.	0.03
3 COMBINED AT	050640	503.	3.20	98.	63.	63.	0.80
ROUTED TO	051510	498.	3.20	98.	63.	63.	0.80
HYDROGRAPH AT	050810	25.	3.17	2.	1.	1.	0.01
ROUTED TO	051510	25.	3.20	2.	1.	1.	0.01
HYDROGRAPH AT	051510	21.	3.13	2.	1.	1.	0.01
3 COMBINED AT	051510	541.	3.20	102.	65.	65.	0.82
ROUTED TO	051520	533.	3.20	102.	65.	65.	0.82
HYDROGRAPH AT	051610	39.	3.17	3.	2.	2.	0.02
ROUTED TO	051520	39.	3.17	3.	2.	2.	0.02
HYDROGRAPH AT	051710	8.	3.17	1.	0.	0.	0.00
ROUTED TO	051520	8.	3.17	1.	0.	0.	0.00
HYDROGRAPH AT	051520	43.	3.17	4.	2.	2.	0.02
4 COMBINED AT	051520	617.	3.20	109.	70.	70.	0.87
ROUTED TO	051530	610.	3.23	109.	70.	70.	0.87

HYDROGRAPH AT	051530	92.	3.17	7.	4.	4.	0.04
2 COMBINED AT	051530	682.	3.23	116.	74.	74.	0.91
ROUTED TO	051540	681.	3.23	116.	74.	74.	0.91
HYDROGRAPH AT	051810	12.	3.13	1.	1.	1.	0.00
ROUTED TO	051540	12.	3.13	1.	1.	1.	0.00
HYDROGRAPH AT	051540	9.	3.13	1.	0.	0.	0.00
3 COMBINED AT	051540	695.	3.23	118.	75.	75.	0.92
ROUTED TO	051550	693.	3.23	118.	75.	75.	0.92
ROUTED TO	051560	687.	3.23	118.	75.	75.	0.92
HYDROGRAPH AT	051560	10.	3.17	1.	1.	1.	0.01
2 COMBINED AT	051560	696.	3.23	119.	76.	76.	0.93
ROUTED TO	051570	693.	3.23	119.	76.	76.	0.93
HYDROGRAPH AT	05Qspl	0.	3.50	0.	0.	0.	0.00
ROUTED TO	050060	0.	4.23	0.	0.	0.	0.00
ROUTED TO	050070	0.	5.60	0.	0.	0.	0.00
HYDROGRAPH AT	050410	86.	3.13	7.	4.	4.	0.04
ROUTED TO	050070	84.	3.13	7.	4.	4.	0.04
HYDROGRAPH AT	050070	179.	3.17	15.	9.	9.	0.08
3 COMBINED AT	050070	261.	3.17	22.	13.	13.	0.13
ROUTED TO	050080	255.	3.20	22.	13.	13.	0.13
HYDROGRAPH AT	050080	23.	3.13	2.	1.	1.	0.02
2 COMBINED AT	050080	275.	3.17	24.	15.	15.	0.15
ROUTED TO	050090	275.	3.20	24.	15.	15.	0.15
HYDROGRAPH AT	050510	78.	3.17	7.	4.	4.	0.05
ROUTED TO	050090	78.	3.17	7.	4.	4.	0.05
HYDROGRAPH AT	050090	76.	3.17	6.	4.	4.	0.04
3 COMBINED AT	050090	425.	3.17	37.	23.	23.	0.24
ROUTED TO	050100	418.	3.20	37.	23.	23.	0.24
HYDROGRAPH AT	050100	106.	3.13	8.	5.	5.	0.05
2 COMBINED AT	050100	521.	3.17	46.	28.	28.	0.28
ROUTED TO	050110	516.	3.20	46.	28.	28.	0.28
HYDROGRAPH AT	050910	23.	3.13	2.	1.	1.	0.01
ROUTED TO	050650	22.	3.17	2.	1.	1.	0.01

HYDROGRAPH AT	050650	42.	3.13	3.	2.	2.	0.02		
2 COMBINED AT	050650	64.	3.13	5.	3.	3.	0.03		
ROUTED TO	050660	64.	3.17	5.	3.	3.	0.03		
HYDROGRAPH AT	050660	40.	3.17	3.	2.	2.	0.02		
2 COMBINED AT	050660	104.	3.17	8.	5.	5.	0.05		
ROUTED TO	050110	103.	3.17	8.	5.	5.	0.05		
HYDROGRAPH AT	050110	22.	3.17	2.	1.	1.	0.01		
3 COMBINED AT	050110	635.	3.20	56.	34.	34.	0.34		
ROUTED TO	050120	635.	3.20	56.	34.	34.	0.34		
HYDROGRAPH AT	051010	42.	3.13	4.	2.	2.	0.02		
ROUTED TO	1010ST	3.	4.23	1.	0.	0.	0.02	61.01	4.23
ROUTED TO	051020	3.	4.43	1.	0.	0.	0.02		
HYDROGRAPH AT	051110	58.	3.13	5.	3.	3.	0.03		
ROUTED TO	051020	57.	3.17	5.	3.	3.	0.03		
HYDROGRAPH AT	051020	49.	3.20	4.	3.	3.	0.03		
3 COMBINED AT	051020	106.	3.17	10.	6.	6.	0.08		
ROUTED TO	051030	105.	3.20	10.	6.	6.	0.08		
HYDROGRAPH AT	051210	19.	3.10	1.	1.	1.	0.01		
ROUTED TO	051030	19.	3.13	1.	1.	1.	0.01		
HYDROGRAPH AT	051310	7.	3.13	1.	0.	0.	0.00		
ROUTED TO	051320	7.	3.17	1.	0.	0.	0.00		
HYDROGRAPH AT	051320	22.	3.13	2.	1.	1.	0.01		
2 COMBINED AT	051320	29.	3.13	2.	1.	1.	0.01		
ROUTED TO	051030	29.	3.20	2.	1.	1.	0.01		
HYDROGRAPH AT	051030	57.	3.20	5.	3.	3.	0.03		
4 COMBINED AT	051030	206.	3.20	19.	11.	11.	0.13		
ROUTED TO	051040	203.	3.23	19.	11.	11.	0.13		
HYDROGRAPH AT	051040	54.	3.20	5.	3.	3.	0.04		
2 COMBINED AT	051040	253.	3.23	24.	14.	14.	0.16		
ROUTED TO	050120	249.	3.23	24.	14.	14.	0.16		
HYDROGRAPH AT	050120	86.	3.17	7.	4.	4.	0.04		
3 COMBINED AT	050120	942.	3.20	86.	52.	52.	0.54		
ROUTED TO	050130	932.	3.23	86.	52.	52.	0.54		

HYDROGRAPH AT	050130	199.	3.17	17.	10.	10.	0.10
2 COMBINED AT	050130	1111.	3.23	103.	62.	62.	0.64
ROUTED TO	050140	1110.	3.23	103.	62.	62.	0.64
HYDROGRAPH AT	051410	178.	3.13	13.	8.	8.	0.07
ROUTED TO	050140	173.	3.17	13.	8.	8.	0.07
HYDROGRAPH AT	050140	175.	3.13	14.	8.	8.	0.09
3 COMBINED AT	050140	1391.	3.23	130.	79.	79.	0.80
ROUTED TO	050150	1382.	3.23	130.	79.	79.	0.80
HYDROGRAPH AT	050150	12.	3.17	1.	1.	1.	0.01
2 COMBINED AT	050150	1392.	3.23	131.	79.	79.	0.81
ROUTED TO	050160	1382.	3.23	131.	79.	79.	0.81
HYDROGRAPH AT	070080	0.	3.50	0.	0.	0.	0.00
ROUTED TO	210110	0.	4.23	0.	0.	0.	0.00
HYDROGRAPH AT	210110	19.	3.20	2.	1.	1.	0.01
2 COMBINED AT	210110	19.	3.20	2.	1.	1.	0.01
ROUTED TO	210120	19.	3.23	2.	1.	1.	0.01
HYDROGRAPH AT	070508	0.	3.50	0.	0.	0.	0.00
ROUTED TO	070509	0.	3.53	0.	0.	0.	0.00
ROUTED TO	070510	0.	3.80	0.	0.	0.	0.00
HYDROGRAPH AT	070510	73.	3.10	7.	4.	4.	0.06
2 COMBINED AT	070510	73.	3.10	7.	4.	4.	0.06
ROUTED TO	070090	71.	3.10	7.	4.	4.	0.06
HYDROGRAPH AT	070090	28.	3.07	2.	1.	1.	0.01
2 COMBINED AT	070090	98.	3.10	10.	6.	6.	0.07
ROUTED TO	210120	96.	3.13	10.	6.	6.	0.07
HYDROGRAPH AT	210120	68.	3.13	6.	3.	3.	0.03
3 COMBINED AT	210120	177.	3.13	17.	10.	10.	0.12
ROUTED TO	210030	175.	3.20	17.	10.	10.	0.12
HYDROGRAPH AT	210210	35.	3.17	4.	2.	2.	0.04
ROUTED TO	210220	34.	3.23	4.	2.	2.	0.04
HYDROGRAPH AT	210220	13.	3.10	1.	1.	1.	0.01
2 COMBINED AT	210220	43.	3.20	5.	3.	3.	0.05
ROUTED TO	210030	42.	3.23	5.	3.	3.	0.05

HYDROGRAPH AT	210010	23.	3.37	3.	2.	2.	0.02
ROUTED TO	210020	22.	3.40	3.	2.	2.	0.02
HYDROGRAPH AT	210020	33.	3.13	3.	2.	2.	0.03
2 COMBINED AT	210020	36.	3.37	6.	4.	4.	0.05
ROUTED TO	210030	36.	3.40	6.	4.	4.	0.05
HYDROGRAPH AT	210030	66.	3.13	7.	4.	4.	0.06
4 COMBINED AT	210030	302.	3.20	35.	21.	21.	0.28
ROUTED TO	210040	302.	3.20	35.	21.	21.	0.28
HYDROGRAPH AT	070610	0.	3.43	0.	0.	0.	0.00
ROUTED TO	070620	0.	3.47	0.	0.	0.	0.00
ROUTED TO	070100	0.	4.27	0.	0.	0.	0.00
HYDROGRAPH AT	070100	59.	3.17	6.	4.	4.	0.05
2 COMBINED AT	070100	59.	3.17	6.	4.	4.	0.05
ROUTED TO	070110	58.	3.17	6.	4.	4.	0.05
HYDROGRAPH AT	070110	14.	3.10	1.	1.	1.	0.01
2 COMBINED AT	070110	69.	3.17	7.	4.	4.	0.05
ROUTED TO	070120	68.	3.20	7.	4.	4.	0.05
HYDROGRAPH AT	070808	0.	3.43	0.	0.	0.	0.00
ROUTED TO	070809	0.	3.47	0.	0.	0.	0.00
ROUTED TO	070810	0.	3.97	0.	0.	0.	0.00
HYDROGRAPH AT	070810	50.	3.10	5.	3.	3.	0.04
2 COMBINED AT	070810	50.	3.10	5.	3.	3.	0.04
ROUTED TO	070820	50.	3.10	5.	3.	3.	0.04

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
070808	MANE	0.73	12.39	206.77	1.00	2.00	12.37	206.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9191E+00 OUTFLOW=0.9057E+00 BASIN STORAGE=0.9232E-02 PERCENT ERROR= 0.5

070610	MANE	0.18	11.99	206.43	1.00	2.00	11.99	206.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9031E+00 EXCESS=0.0000E+00 OUTFLOW=0.9031E+00 BASIN STORAGE=0.5171E-04 PERCENT ERROR= 0.0

070610	MANE	0.47	5.12	206.50	1.00	2.00	5.11	206.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3785E+00 OUTFLOW=0.3729E+00 BASIN STORAGE=0.3754E-02 PERCENT ERROR= 0.5

070508	MANE	0.27	16.98	206.55	1.00	2.00	16.98	206.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1275E+01 EXCESS=0.0000E+00 OUTFLOW=0.1275E+01 BASIN STORAGE=0.1197E-03 PERCENT ERROR= 0.0

070508	MANE	0.71	4.42	210.48	0.83	2.00	4.40	210.00	0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3592E+00 OUTFLOW=0.3530E+00 BASIN STORAGE=0.4247E-02 PERCENT ERROR= 0.5

070010	MANE	0.18	20.97	207.86	0.95	2.00	20.97	208.00	0.95

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1624E+01 EXCESS=0.0000E+00 OUTFLOW=0.1624E+01 BASIN STORAGE=0.9866E-04 PERCENT ERROR= 0.0

070010	MANE	1.09	6.53	206.99	1.00	2.00	6.50	206.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4866E+00 OUTFLOW=0.4794E+00 BASIN STORAGE=0.5001E-02 PERCENT ERROR= 0.4

070210	MANE	0.11	27.45	208.01	0.96	2.00	27.45	208.00	0.96

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2103E+01 EXCESS=0.0000E+00 OUTFLOW=0.2103E+01 BASIN STORAGE=0.7125E-04 PERCENT ERROR= 0.0

070209	MANE	0.46	11.88	206.50	0.94	2.00	11.86	208.00	0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9154E+00 OUTFLOW=0.9007E+00 BASIN STORAGE=0.1018E-01 PERCENT ERROR= 0.5

070210	MANE	0.36	11.85	207.78	0.94	2.00	11.85	208.00	0.94

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9005E+00 EXCESS=0.0000E+00 OUTFLOW=0.9004E+00 BASIN STORAGE=0.1804E-03 PERCENT ERROR=   0.0

          070210  MANE        0.70      5.27    207.97      0.94      2.00      5.27    208.00        0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4069E+00 OUTFLOW=0.4004E+00 BASIN STORAGE=0.4546E-02 PERCENT ERROR=   0.5

          050005  MANE        0.50     44.43    208.32      0.95      2.00     44.42    208.00        0.95

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3403E+01 EXCESS=0.0000E+00 OUTFLOW=0.3403E+01 BASIN STORAGE=0.5932E-03 PERCENT ERROR=   0.0

          050005  MANE        1.25     20.70    210.86      0.83      2.00     20.62    212.00        0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1706E+01 OUTFLOW=0.1674E+01 BASIN STORAGE=0.2220E-01 PERCENT ERROR=   0.5

          030510  MANE        0.80     64.39    209.67      0.91      2.00     64.38    210.00        0.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5076E+01 EXCESS=0.0000E+00 OUTFLOW=0.5075E+01 BASIN STORAGE=0.1536E-02 PERCENT ERROR=   0.0

          030509  MANE        2.00     12.47    201.15      0.87      2.00     12.39    200.00        0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7568E+00 OUTFLOW=0.7447E+00 BASIN STORAGE=0.6240E-02 PERCENT ERROR=   0.8

          030510  MANE        2.00     12.24    207.55      0.87      2.00     12.24    208.00        0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7445E+00 EXCESS=0.0000E+00 OUTFLOW=0.7462E+00 BASIN STORAGE=0.4182E-02 PERCENT ERROR=  -0.8

          030510  MANE        1.45     62.82    187.32      1.07      2.00     61.99    188.00        1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4030E+01 OUTFLOW=0.3989E+01 BASIN STORAGE=0.2739E-01 PERCENT ERROR=   0.4

          030809  MANE        1.50      9.60    199.49      0.87      2.00      9.54    200.00        0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5676E+00 OUTFLOW=0.5590E+00 BASIN STORAGE=0.4588E-02 PERCENT ERROR=   0.7

          030810  MANE        1.97      9.44    206.81      0.87      2.00      9.40    208.00        0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5589E+00 EXCESS=0.0000E+00 OUTFLOW=0.5546E+00 BASIN STORAGE=0.3975E-02 PERCENT ERROR=   0.1

          030810  MANE        1.81     37.42    214.13      0.82      2.00     37.38    214.00        0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3231E+01 OUTFLOW=0.3152E+01 BASIN STORAGE=0.5908E-01 PERCENT ERROR=   0.6

          030510  MANE        0.76     45.26    214.12      0.83      2.00     45.25    214.00        0.83
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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3703E+01 EXCESS=0.0000E+00 OUTFLOW=0.3703E+01 BASIN STORAGE=0.1340E-02 PERCENT ERROR= 0.0

030520	MANE	0.44	158.82	210.75	0.92	2.00	158.59	210.00	0.92

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1351E+02 EXCESS=0.0000E+00 OUTFLOW=0.1351E+02 BASIN STORAGE=0.2494E-02 PERCENT ERROR= 0.0

030710	MANE	1.05	28.57	185.68	1.07	2.00	28.28	186.00	1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1202E+01 OUTFLOW=0.1195E+01 BASIN STORAGE=0.6406E-02 PERCENT ERROR= 0.1

030720	MANE	1.32	27.74	188.18	1.06	2.00	27.43	188.00	1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1195E+01 EXCESS=0.0000E+00 OUTFLOW=0.1192E+01 BASIN STORAGE=0.2013E-02 PERCENT ERROR= 0.0

030720	MANE	1.44	29.33	187.84	0.99	2.00	29.13	188.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1436E+01 OUTFLOW=0.1424E+01 BASIN STORAGE=0.1018E-01 PERCENT ERROR= 0.1

030520	MANE	0.90	55.40	189.49	1.02	2.00	55.32	190.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2615E+01 EXCESS=0.0000E+00 OUTFLOW=0.2613E+01 BASIN STORAGE=0.3383E-02 PERCENT ERROR= -0.1

030520	MANE	1.04	47.16	186.38	1.02	2.00	46.43	186.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2239E+01 OUTFLOW=0.2222E+01 BASIN STORAGE=0.1490E-01 PERCENT ERROR= 0.1

030520	MANE	2.00	0.01	272.35	-1.00	2.00	0.01	272.00	-1.00
030540	MANE	0.33	3.90	203.02	-1.00	2.00	3.84	204.00	-1.00
030540	MANE	2.00	0.00	316.65	-1.00	2.00	0.00	316.00	-1.00
030540	MANE	0.87	43.43	188.41	1.07	2.00	43.06	188.00	1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2365E+01 OUTFLOW=0.2341E+01 BASIN STORAGE=0.1674E-01 PERCENT ERROR= 0.3

030550	MANE	1.44	94.11	188.38	1.62	2.00	93.56	188.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3731E+01 OUTFLOW=0.3714E+01 BASIN STORAGE=0.8865E-02 PERCENT ERROR= 0.2

030530	MANE	0.45	116.28	192.88	15.53	2.00	115.23	192.00	15.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6956E+02 EXCESS=0.0000E+00 OUTFLOW=0.6957E+02 BASIN STORAGE=-.7817E-01 PERCENT ERROR= 0.1

030530	MANE	1.38	47.32	187.71	1.06	2.00	47.10	188.00	1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2511E+01 OUTFLOW=0.2487E+01 BASIN STORAGE=0.1863E-01 PERCENT ERROR= 0.2

030520	MANE	0.70	153.26	193.41	10.56	2.00	152.12	192.00	10.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7205E+02 EXCESS=0.0000E+00 OUTFLOW=0.7211E+02 BASIN STORAGE=-.1212E+00 PERCENT ERROR= 0.1

040120	MANE	1.10	325.20	193.65	3.45	2.00	324.59	194.00	3.44

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9037E+02 EXCESS=0.0000E+00 OUTFLOW=0.9044E+02 BASIN STORAGE=-.2163E+00 PERCENT ERROR= 0.2

040110	MANE	1.30	47.28	193.13	1.01	2.00	47.27	192.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2944E+01 OUTFLOW=0.2904E+01 BASIN STORAGE=0.2837E-01 PERCENT ERROR= 0.4

040120	MANE	0.20	47.19	192.48	1.01	2.00	46.76	192.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2905E+01 EXCESS=0.0000E+00 OUTFLOW=0.2905E+01 BASIN STORAGE=0.1879E-03 PERCENT ERROR= 0.0

040120	MANE	2.00	116.78	191.92	1.08	2.00	116.62	192.00	1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6561E+01 OUTFLOW=0.6478E+01 BASIN STORAGE=0.5784E-01 PERCENT ERROR= 0.4

040130	MANE	0.34	483.02	193.99	2.84	2.00	483.01	194.00	2.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9976E+02 EXCESS=0.0000E+00 OUTFLOW=0.9976E+02 BASIN STORAGE=-.5836E-01 PERCENT ERROR= 0.1

040130	MANE	0.81	37.05	184.90	1.16	2.00	36.42	184.00	1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1426E+01 OUTFLOW=0.1420E+01 BASIN STORAGE=0.4748E-02 PERCENT ERROR= 0.1

040040	MANE	0.29	498.64	194.31	2.79	2.00	498.14	194.00	2.79

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1012E+03 EXCESS=0.0000E+00 OUTFLOW=0.1012E+03 BASIN STORAGE=-.4989E-01 PERCENT ERROR= 0.0

040010	MANE	1.10	41.54	187.70	1.00	2.00	41.36	188.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2046E+01 OUTFLOW=0.2028E+01 BASIN STORAGE=0.1497E-01 PERCENT ERROR= 0.2

040020	MANE	1.22	40.25	189.84	1.00	2.00	40.25	190.00	1.00

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2028E+01 EXCESS=0.0000E+00 OUTFLOW=0.2022E+01 BASIN STORAGE=0.3363E-02 PERCENT ERROR=   0.1

          040020  MANE        2.00     32.08    194.53      1.02      2.00     31.96    194.00        1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2263E+01 OUTFLOW=0.2235E+01 BASIN STORAGE=0.2110E-01 PERCENT ERROR=   0.3

          040030  MANE        1.02     69.99    193.51      1.01      2.00     69.48    194.00        1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4255E+01 EXCESS=0.0000E+00 OUTFLOW=0.4245E+01 BASIN STORAGE=0.6331E-02 PERCENT ERROR=   0.1

          040030  MANE        2.00     61.01    191.76      1.14      2.00     61.00    192.00        1.14

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3740E+01 OUTFLOW=0.3702E+01 BASIN STORAGE=0.2579E-01 PERCENT ERROR=   0.3

          040040  MANE        2.00    129.97    199.82      1.06      2.00    129.41    200.00        1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7941E+01 EXCESS=0.0000E+00 OUTFLOW=0.7936E+01 BASIN STORAGE=0.9779E-02 PERCENT ERROR=  -0.1

          040210  MANE        0.69     19.17    185.03      1.25      2.00     18.80    186.00        1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7342E+00 OUTFLOW=0.7316E+00 BASIN STORAGE=0.1628E-02 PERCENT ERROR=   0.1

          040040  MANE        2.00     18.65    196.62      1.31      2.00     18.30    196.00        1.30

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7312E+00 EXCESS=0.0000E+00 OUTFLOW=0.7659E+00 BASIN STORAGE=0.6587E-02 PERCENT ERROR=  -5.6

          040040  MANE        2.00     84.08    192.06      1.61      2.00     84.01    192.00        1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3802E+01 OUTFLOW=0.3773E+01 BASIN STORAGE=0.1358E-01 PERCENT ERROR=   0.4

          040050  MANE        0.47    690.37    196.45      2.43      2.00    687.49    196.00        2.43

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1137E+03 EXCESS=0.0000E+00 OUTFLOW=0.1137E+03 BASIN STORAGE=-.1496E+00 PERCENT ERROR=   0.1

          040310  MANE        1.34     91.73    186.38      1.16      2.00     90.71    186.00        1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3843E+01 OUTFLOW=0.3821E+01 BASIN STORAGE=0.1603E-01 PERCENT ERROR=   0.2

          040050  MANE        1.91     89.63    190.16      1.15      2.00     88.84    190.00        1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3818E+01 EXCESS=0.0000E+00 OUTFLOW=0.3813E+01 BASIN STORAGE=0.9125E-02 PERCENT ERROR=  -0.1

          040050  MANE        1.51    143.60    191.32      1.19      2.00    141.72    192.00        1.19
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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7233E+01 OUTFLOW=0.7155E+01 BASIN STORAGE=0.5268E-01 PERCENT ERROR= 0.4

040060	MANE	0.19	865.94	196.14	2.22	2.00	865.90	196.00	2.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1246E+03 EXCESS=0.0000E+00 OUTFLOW=0.1247E+03 BASIN STORAGE=-.6425E-01 PERCENT ERROR= 0.0

040060	MANE	0.79	47.01	186.66	1.54	2.00	46.71	186.00	1.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1812E+01 OUTFLOW=0.1804E+01 BASIN STORAGE=0.5868E-02 PERCENT ERROR= 0.1

040070	MANE	0.20	889.24	196.07	2.21	2.00	889.18	196.00	2.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1264E+03 EXCESS=0.0000E+00 OUTFLOW=0.1265E+03 BASIN STORAGE=-.6657E-01 PERCENT ERROR= 0.0

070020	MANE	0.45	0.01	207.04	-1.00	2.00	0.01	208.00	-1.00
070030	MANE	2.00	0.01	222.25	-1.00	2.00	0.01	222.00	-1.00
070030	MANE	0.85	5.34	184.06	1.17	2.00	5.33	184.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2515E+00 OUTFLOW=0.2501E+00 BASIN STORAGE=0.1024E-02 PERCENT ERROR= 0.2

070040	MANE	0.43	5.26	184.66	1.18	2.00	5.07	186.00	1.18

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2507E+00 EXCESS=0.0000E+00 OUTFLOW=0.2508E+00 BASIN STORAGE=0.9675E-04 PERCENT ERROR= 0.0

070220	MANE	0.31	0.12	208.48	-1.00	2.00	0.10	208.00	-1.00
070040	MANE	1.94	0.13	225.41	-1.00	2.00	0.11	226.00	-1.00
070040	MANE	2.00	4.95	192.74	1.14	2.00	4.92	192.00	1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3678E+00 OUTFLOW=0.3632E+00 BASIN STORAGE=0.3287E-02 PERCENT ERROR= 0.3

070050	MANE	1.40	8.63	189.86	1.15	2.00	8.62	190.00	1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6163E+00 EXCESS=0.0000E+00 OUTFLOW=0.6150E+00 BASIN STORAGE=0.8373E-03 PERCENT ERROR= 0.1

070050	MANE	0.78	24.29	184.85	1.21	2.00	23.78	184.00	1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1166E+01 OUTFLOW=0.1159E+01 BASIN STORAGE=0.5169E-02 PERCENT ERROR= 0.2

070060 MANE 0.97 29.75 187.77 1.19 2.00 29.61 188.00 1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1774E+01 EXCESS=0.0000E+00 OUTFLOW=0.1775E+01 BASIN STORAGE=0.6068E-03 PERCENT ERROR= -0.1

070310 MANE 0.76 30.67 184.48 1.21 2.00 30.08 184.00 1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1490E+01 OUTFLOW=0.1481E+01 BASIN STORAGE=0.6574E-02 PERCENT ERROR= 0.2

070060 MANE 0.74 29.98 185.96 1.21 2.00 29.98 186.00 1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1481E+01 EXCESS=0.0000E+00 OUTFLOW=0.1482E+01 BASIN STORAGE=0.3630E-03 PERCENT ERROR= -0.1

070060 MANE 1.23 25.91 185.60 1.21 2.00 25.47 186.00 1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1296E+01 OUTFLOW=0.1288E+01 BASIN STORAGE=0.5563E-02 PERCENT ERROR= 0.1

070070 MANE 0.67 82.61 187.81 1.20 2.00 82.33 188.00 1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4545E+01 EXCESS=0.0000E+00 OUTFLOW=0.4545E+01 BASIN STORAGE=0.2515E-02 PERCENT ERROR= -0.1

070070 MANE 0.94 42.52 184.23 1.21 2.00 42.12 184.00 1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2073E+01 OUTFLOW=0.2061E+01 BASIN STORAGE=0.8684E-02 PERCENT ERROR= 0.2

070080 MANE 1.20 51.89 187.39 1.72 2.00 51.60 188.00 1.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1932E+01 OUTFLOW=0.1925E+01 BASIN STORAGE=0.3459E-02 PERCENT ERROR= 0.2

070420 MANE 0.57 45.74 220.82 1.28 2.00 45.74 220.00 1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8494E+01 EXCESS=0.0000E+00 OUTFLOW=0.8494E+01 BASIN STORAGE=0.1546E-02 PERCENT ERROR= 0.0

070410 MANE 1.87 17.40 187.32 1.36 2.00 17.33 188.00 1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8003E+00 OUTFLOW=0.7949E+00 BASIN STORAGE=0.3259E-02 PERCENT ERROR= 0.3

070420 MANE 0.32 17.31 188.65 1.35 2.00 16.89 188.00 1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7944E+00 EXCESS=0.0000E+00 OUTFLOW=0.7946E+00 BASIN STORAGE=0.2700E-03 PERCENT ERROR= -0.1

070420 MANE 2.00 4.86 190.82 1.49 2.00 4.84 192.00 1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2409E+00 OUTFLOW=0.2387E+00 BASIN STORAGE=0.1374E-02 PERCENT ERROR= 0.3

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210005  MANE        0.26     59.21    192.44      1.29      2.00     59.12    192.00        1.29

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9526E+01 EXCESS=0.0000E+00 OUTFLOW=0.9525E+01 BASIN STORAGE=0.7249E-03 PERCENT ERROR=   0.0

210005  MANE        2.00     13.06    194.11      1.48      2.00     13.04    194.00        1.48

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6370E+00 OUTFLOW=0.6324E+00 BASIN STORAGE=0.3350E-02 PERCENT ERROR=   0.2

050030  MANE        0.82     71.80    194.69      1.30      2.00     71.78    194.00        1.30

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1016E+02 EXCESS=0.0000E+00 OUTFLOW=0.1016E+02 BASIN STORAGE=0.2660E-02 PERCENT ERROR=   0.0

050010  MANE        2.00      0.01    283.63     -1.00      2.00      0.01    282.00       -1.00

050010  MANE        1.33     96.72    187.31      1.20      2.00     95.85    188.00        1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4245E+01 OUTFLOW=0.4215E+01 BASIN STORAGE=0.2301E-01 PERCENT ERROR=   0.2

050020  MANE        1.39     93.12    190.07      1.20      2.00     92.86    190.00        1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4220E+01 EXCESS=0.0000E+00 OUTFLOW=0.4213E+01 BASIN STORAGE=0.6933E-02 PERCENT ERROR=   0.0

050210  MANE        0.98     99.92    188.76      1.46      2.00     99.54    188.00        1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4226E+01 OUTFLOW=0.4205E+01 BASIN STORAGE=0.1724E-01 PERCENT ERROR=   0.1

050020  MANE        2.00      0.01    599.05      0.00      2.00      0.01    598.00        0.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2856E-02 EXCESS=0.0000E+00 OUTFLOW=0.2431E-02 BASIN STORAGE=0.4309E-03 PERCENT ERROR=  -0.2

050020  MANE        2.00     12.86    189.95      1.32      2.00     12.85    190.00        1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6373E+00 OUTFLOW=0.6317E+00 BASIN STORAGE=0.4033E-02 PERCENT ERROR=   0.2

050030  MANE        0.37    105.06    190.65      0.70      2.00    103.35    192.00        0.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4844E+01 EXCESS=0.0000E+00 OUTFLOW=0.4844E+01 BASIN STORAGE=0.2094E-02 PERCENT ERROR=   0.0

050030  MANE        1.39     54.49    185.60      1.63      2.00     53.61    186.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1742E+01 OUTFLOW=0.1739E+01 BASIN STORAGE=0.2044E-02 PERCENT ERROR=   0.0
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050305  MANE        0.22    189.38    192.40      1.03      2.00    188.41    192.00        1.03

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1614E+02 EXCESS=0.0000E+00 OUTFLOW=0.1613E+02 BASIN STORAGE=0.4682E-03 PERCENT ERROR=   0.0

050050  MANE        1.14    187.38    195.07      1.02      2.00    185.84    196.00        1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1614E+02 EXCESS=0.0000E+00 OUTFLOW=0.1611E+02 BASIN STORAGE=0.1521E-01 PERCENT ERROR=   0.1

050040  MANE        1.85    106.07    192.81      1.08      2.00    105.50    192.00        1.08

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5976E+01 OUTFLOW=0.5901E+01 BASIN STORAGE=0.5232E-01 PERCENT ERROR=   0.4

050050  MANE        0.14     36.67    220.33      1.09      2.00     36.67    220.00        1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5915E+01 EXCESS=0.0000E+00 OUTFLOW=0.5930E+01 BASIN STORAGE=-.2270E-01 PERCENT ERROR=   0.1

050310  MANE        0.92     75.75    188.93      1.46      2.00     75.20    188.00        1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3209E+01 OUTFLOW=0.3190E+01 BASIN STORAGE=0.1452E-01 PERCENT ERROR=   0.1

050065  MANE        0.57     37.43    184.88      1.63      2.00     36.96    184.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1219E+01 OUTFLOW=0.1218E+01 BASIN STORAGE=0.1294E-02 PERCENT ERROR=   0.0

050060  MANE        2.00     52.72    191.87      1.56      2.00     52.58    190.00        1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2427E+01 OUTFLOW=0.2408E+01 BASIN STORAGE=0.1081E-01 PERCENT ERROR=   0.3

050062  MANE        0.98     40.00    184.01      1.63      2.00     39.98    184.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1219E+01 OUTFLOW=0.1218E+01 BASIN STORAGE=0.1174E-02 PERCENT ERROR=   0.0

050610  MANE        2.00     38.54    187.67      1.65      2.00     38.37    188.00        1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1219E+01 EXCESS=0.0000E+00 OUTFLOW=0.1228E+01 BASIN STORAGE=0.2229E-02 PERCENT ERROR=  -1.0

050610  MANE        1.46    101.00    189.46      1.10      2.00     99.04    190.00        1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4801E+01 OUTFLOW=0.4760E+01 BASIN STORAGE=0.2964E-01 PERCENT ERROR=   0.2

050620  MANE        0.58    172.55    190.62      1.16      2.00    171.92    190.00        1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3566E+02 EXCESS=0.0000E+00 OUTFLOW=0.3565E+02 BASIN STORAGE=-.6676E-02 PERCENT ERROR=   0.0
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050620  MANE        2.00    111.40    190.17      1.10      2.00    110.58    190.00        1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5867E+01 OUTFLOW=0.5804E+01 BASIN STORAGE=0.4209E-01 PERCENT ERROR=   0.4

050630  MANE        0.67    280.79    191.23      1.15      2.00    279.07    192.00        1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4146E+02 EXCESS=0.0000E+00 OUTFLOW=0.4146E+02 BASIN STORAGE=-.8065E-02 PERCENT ERROR=   0.0

050630  MANE        1.37    120.14    187.99      1.40      2.00    120.11    188.00        1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4642E+01 OUTFLOW=0.4618E+01 BASIN STORAGE=0.1773E-01 PERCENT ERROR=   0.1

050640  MANE        0.65    375.16    191.75      1.17      2.00    374.73    192.00        1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4607E+02 EXCESS=0.0000E+00 OUTFLOW=0.4607E+02 BASIN STORAGE=-.5648E-02 PERCENT ERROR=   0.0

050710  MANE        1.41     11.04    187.86      1.63      2.00     11.03    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4355E+00 OUTFLOW=0.4336E+00 BASIN STORAGE=0.1041E-02 PERCENT ERROR=   0.2

050720  MANE        0.26     11.00    188.46      1.63      2.00     10.77    190.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4340E+00 EXCESS=0.0000E+00 OUTFLOW=0.4340E+00 BASIN STORAGE=0.1446E-04 PERCENT ERROR=   0.0

050720  MANE        2.00     54.40    190.79      1.60      2.00     53.82    192.00        1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2400E+01 OUTFLOW=0.2385E+01 BASIN STORAGE=0.8781E-02 PERCENT ERROR=   0.3

050640  MANE        0.31     63.52    192.28      1.60      2.00     63.46    192.00        1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2816E+01 EXCESS=0.0000E+00 OUTFLOW=0.2816E+01 BASIN STORAGE=0.1211E-03 PERCENT ERROR=   0.0

050640  MANE        1.50     65.19    191.21      1.62      2.00     64.77    192.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2787E+01 OUTFLOW=0.2769E+01 BASIN STORAGE=0.9847E-02 PERCENT ERROR=   0.3

051510  MANE        0.38    500.53    192.36      1.21      2.00    497.89    192.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5165E+02 EXCESS=0.0000E+00 OUTFLOW=0.5165E+02 BASIN STORAGE=-.2091E-02 PERCENT ERROR=   0.0

050810  MANE        1.74     25.55    189.14      1.56      2.00     25.37    190.00        1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1088E+01 OUTFLOW=0.1080E+01 BASIN STORAGE=0.3609E-02 PERCENT ERROR=   0.4
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051510  MANE        0.59    25.29   191.22     1.56     2.00    24.71   192.00       1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1079E+01 EXCESS=0.0000E+00 OUTFLOW=0.1080E+01 BASIN STORAGE=0.1186E-03 PERCENT ERROR=  -0.1

051510  MANE        1.18    21.27   188.57     1.59     2.00    21.15   188.00       1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8506E+00 OUTFLOW=0.8466E+00 BASIN STORAGE=0.2308E-02 PERCENT ERROR=   0.2

051520  MANE        0.30   539.77   192.60     1.22     2.00   532.54   192.00       1.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5358E+02 EXCESS=0.0000E+00 OUTFLOW=0.5357E+02 BASIN STORAGE=-.1980E-02 PERCENT ERROR=   0.0

051610  MANE        1.22    39.29   190.01     1.50     2.00    39.29   190.00       1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1686E+01 OUTFLOW=0.1676E+01 BASIN STORAGE=0.7637E-02 PERCENT ERROR=   0.2

051520  MANE        0.40    39.05   190.64     1.50     2.00    38.52   190.00       1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1676E+01 EXCESS=0.0000E+00 OUTFLOW=0.1676E+01 BASIN STORAGE=0.1288E-03 PERCENT ERROR=   0.0

051710  MANE        0.65     7.88   188.76     1.51     2.00     7.77   190.00       1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3240E+00 OUTFLOW=0.3224E+00 BASIN STORAGE=0.1233E-02 PERCENT ERROR=   0.1

051520  MANE        0.60     7.76   190.34     1.51     2.00     7.75   190.00       1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3226E+00 EXCESS=0.0000E+00 OUTFLOW=0.3227E+00 BASIN STORAGE=0.3447E-04 PERCENT ERROR=   0.0

051520  MANE        1.21    43.16   189.81     1.48     2.00    42.92   190.00       1.48

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1831E+01 OUTFLOW=0.1819E+01 BASIN STORAGE=0.8303E-02 PERCENT ERROR=   0.2

051530  MANE        0.59   614.67   193.31     1.23     2.00   609.63   194.00       1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5740E+02 EXCESS=0.0000E+00 OUTFLOW=0.5740E+02 BASIN STORAGE=-.2706E-02 PERCENT ERROR=   0.0

051530  MANE        0.97    92.52   188.84     1.63     2.00    91.53   190.00       1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3570E+01 OUTFLOW=0.3558E+01 BASIN STORAGE=0.8718E-02 PERCENT ERROR=   0.1

051540  MANE        0.35   680.89   194.09     1.25     2.00   680.88   194.00       1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6095E+02 EXCESS=0.0000E+00 OUTFLOW=0.6095E+02 BASIN STORAGE=-.7044E-03 PERCENT ERROR=   0.0
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051810  MANE        0.51     11.76    187.31      1.62      2.00     11.63    188.00        1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4321E+00 OUTFLOW=0.4306E+00 BASIN STORAGE=0.7745E-03 PERCENT ERROR=   0.2

051540  MANE        0.23     11.60    188.25      1.61      2.00     11.57    188.00        1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4304E+00 EXCESS=0.0000E+00 OUTFLOW=0.4304E+00 BASIN STORAGE=0.8082E-05 PERCENT ERROR=   0.0

051540  MANE        0.78      9.52    187.16      1.62      2.00      9.38    188.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3457E+00 OUTFLOW=0.3447E+00 BASIN STORAGE=0.6075E-03 PERCENT ERROR=   0.1

051550  MANE        0.22    693.32    194.16      1.25      2.00    692.75    194.00        1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6173E+02 EXCESS=0.0000E+00 OUTFLOW=0.6173E+02 BASIN STORAGE=-.3836E-03 PERCENT ERROR=   0.0

051560  MANE        0.37    689.94    194.57      1.25      2.00    687.17    194.00        1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6173E+02 EXCESS=0.0000E+00 OUTFLOW=0.6173E+02 BASIN STORAGE=-.2888E-03 PERCENT ERROR=   0.0

051560  MANE        2.00     10.16    189.32      1.22      2.00     10.12    190.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5231E+00 OUTFLOW=0.5186E+00 BASIN STORAGE=0.3077E-02 PERCENT ERROR=   0.3

051570  MANE        0.22    694.58    194.27      1.25      2.00    692.80    194.00        1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6225E+02 EXCESS=0.0000E+00 OUTFLOW=0.6225E+02 BASIN STORAGE=-.2533E-03 PERCENT ERROR=   0.0

050060  MANE        2.14      0.00    310.71     -1.00      2.00      0.00    310.00       -1.00

050070  MANE        2.00      0.00    386.64     -1.00      2.00      0.00    388.00       -1.00

050410  MANE        1.19     86.35    188.28      1.50      2.00     85.86    188.00        1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3292E+01 OUTFLOW=0.3282E+01 BASIN STORAGE=0.8189E-02 PERCENT ERROR=   0.1

050070  MANE        0.23     85.55    188.55      1.50      2.00     84.16    188.00        1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3283E+01 EXCESS=0.0000E+00 OUTFLOW=0.3283E+01 BASIN STORAGE=0.6196E-03 PERCENT ERROR=   0.0

050070  MANE        1.93    179.57    191.46      1.71      2.00    178.68    190.00        1.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7713E+01 OUTFLOW=0.7660E+01 BASIN STORAGE=0.2368E-01 PERCENT ERROR=   0.4
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050080  MANE        0.65    259.42    191.30      1.64      2.00    255.21    192.00        1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1094E+02 EXCESS=0.0000E+00 OUTFLOW=0.1095E+02 BASIN STORAGE=0.1051E-02 PERCENT ERROR=   0.0

050080  MANE        2.00     23.10    188.63      1.05      2.00     22.80    188.00        1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1188E+01 OUTFLOW=0.1178E+01 BASIN STORAGE=0.6871E-02 PERCENT ERROR=   0.3

050090  MANE        0.20    275.19    190.45      1.56      2.00    274.65    192.00        1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1212E+02 EXCESS=0.0000E+00 OUTFLOW=0.1212E+02 BASIN STORAGE=0.3567E-03 PERCENT ERROR=   0.0

050510  MANE        1.50     79.77    189.39      1.20      2.00     78.01    190.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3494E+01 OUTFLOW=0.3470E+01 BASIN STORAGE=0.1608E-01 PERCENT ERROR=   0.2

050090  MANE        0.36     77.94    190.15      1.21      2.00     77.93    190.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3472E+01 EXCESS=0.0000E+00 OUTFLOW=0.3472E+01 BASIN STORAGE=0.2389E-03 PERCENT ERROR=   0.0

050090  MANE        1.25     77.07    188.97      1.53      2.00     75.95    190.00        1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3021E+01 OUTFLOW=0.3011E+01 BASIN STORAGE=0.7900E-02 PERCENT ERROR=   0.1

050100  MANE        0.38    423.07    190.90      1.47      2.00    418.37    192.00        1.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1861E+02 EXCESS=0.0000E+00 OUTFLOW=0.1861E+02 BASIN STORAGE=0.9550E-03 PERCENT ERROR=   0.0

050100  MANE        1.41    108.52    189.10      1.73      2.00    106.25    188.00        1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4163E+01 OUTFLOW=0.4146E+01 BASIN STORAGE=0.1006E-01 PERCENT ERROR=   0.2

050110  MANE        0.37    519.58    190.75      1.51      2.00    515.68    192.00        1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2276E+02 EXCESS=0.0000E+00 OUTFLOW=0.2276E+02 BASIN STORAGE=0.9270E-03 PERCENT ERROR=   0.0

050910  MANE        1.31     23.03    188.42      1.48      2.00     22.96    188.00        1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9556E+00 OUTFLOW=0.9500E+00 BASIN STORAGE=0.3772E-02 PERCENT ERROR=   0.2

050650  MANE        0.59     22.75    189.42      1.49      2.00     22.40    190.00        1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9505E+00 EXCESS=0.0000E+00 OUTFLOW=0.9510E+00 BASIN STORAGE=0.1686E-03 PERCENT ERROR=  -0.1
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050650  MANE        1.08     42.51    189.15      1.61      2.00     42.09    188.00        1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1642E+01 OUTFLOW=0.1635E+01 BASIN STORAGE=0.4128E-02 PERCENT ERROR=   0.1

050660  MANE        0.40     64.17    188.91      1.56      2.00     64.01    190.00        1.56

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2586E+01 EXCESS=0.0000E+00 OUTFLOW=0.2587E+01 BASIN STORAGE=0.1732E-03 PERCENT ERROR=   0.0

050660  MANE        1.09     40.63    189.41      1.63      2.00     40.15    190.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1568E+01 OUTFLOW=0.1561E+01 BASIN STORAGE=0.4593E-02 PERCENT ERROR=   0.1

050110  MANE        0.33    103.61    190.49      1.59      2.00    103.11    190.00        1.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4148E+01 EXCESS=0.0000E+00 OUTFLOW=0.4148E+01 BASIN STORAGE=0.1792E-03 PERCENT ERROR=   0.0

050110  MANE        0.83     22.36    189.40      1.63      2.00     22.20    190.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8709E+00 OUTFLOW=0.8674E+00 BASIN STORAGE=0.2426E-02 PERCENT ERROR=   0.1

050120  MANE        0.49    634.96    191.76      1.53      2.00    634.65    192.00        1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2779E+02 EXCESS=0.0000E+00 OUTFLOW=0.2778E+02 BASIN STORAGE=0.1753E-02 PERCENT ERROR=   0.0

051010  MANE        0.97     42.42    188.52      1.46      2.00     42.04    188.00        1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1800E+01 OUTFLOW=0.1791E+01 BASIN STORAGE=0.7795E-02 PERCENT ERROR=   0.1

051020  MANE        0.67      3.11    265.08      0.26      2.00      2.99    266.00        0.26

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3015E+00 EXCESS=0.0000E+00 OUTFLOW=0.3157E+00 BASIN STORAGE=0.5736E-02 PERCENT ERROR=  -6.6

051110  MANE        1.37     58.08    189.39      1.69      2.00     57.87    188.00        1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2262E+01 OUTFLOW=0.2252E+01 BASIN STORAGE=0.4880E-02 PERCENT ERROR=   0.2

051020  MANE        0.61     57.59    189.70      1.69      2.00     57.44    190.00        1.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2251E+01 EXCESS=0.0000E+00 OUTFLOW=0.2253E+01 BASIN STORAGE=0.9481E-03 PERCENT ERROR=  -0.1

051020  MANE        2.00     49.67    190.64      1.53      2.00     48.95    192.00        1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2223E+01 OUTFLOW=0.2207E+01 BASIN STORAGE=0.7967E-02 PERCENT ERROR=   0.4
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051030  MANE        0.81    104.97    192.11      1.19      2.00    104.89    192.00        1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4771E+01 EXCESS=0.0000E+00 OUTFLOW=0.4769E+01 BASIN STORAGE=0.5335E-02 PERCENT ERROR=  -0.1

051210  MANE        0.80     18.89    187.30      1.63      2.00     18.53    186.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6967E+00 OUTFLOW=0.6948E+00 BASIN STORAGE=0.1161E-02 PERCENT ERROR=   0.1

051030  MANE        0.56     18.53    187.14      1.63      2.00     18.52    188.00        1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6952E+00 EXCESS=0.0000E+00 OUTFLOW=0.6956E+00 BASIN STORAGE=0.2385E-03 PERCENT ERROR=  -0.1

051310  MANE        1.04      7.34    186.96      1.74      2.00      7.31    188.00        1.74

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2796E+00 OUTFLOW=0.2789E+00 BASIN STORAGE=0.5135E-03 PERCENT ERROR=   0.1

051320  MANE        0.97      7.27    190.02      1.74      2.00      7.27    190.00        1.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2788E+00 EXCESS=0.0000E+00 OUTFLOW=0.2788E+00 BASIN STORAGE=0.2282E-03 PERCENT ERROR=  -0.1

051320  MANE        0.83     22.31    187.99      1.73      2.00     22.31    188.00        1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8327E+00 OUTFLOW=0.8298E+00 BASIN STORAGE=0.1460E-02 PERCENT ERROR=   0.2

051030  MANE        1.59     28.76    191.91      1.73      2.00     28.67    192.00        1.73

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1109E+01 EXCESS=0.0000E+00 OUTFLOW=0.1108E+01 BASIN STORAGE=0.1690E-02 PERCENT ERROR=   0.0

051030  MANE        2.00     57.28    191.92      1.65      2.00     57.27    192.00        1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2742E+01 OUTFLOW=0.2721E+01 BASIN STORAGE=0.1172E-01 PERCENT ERROR=   0.3

051040  MANE        1.27    203.72    195.03      1.38      2.00    202.74    194.00        1.38

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9295E+01 EXCESS=0.0000E+00 OUTFLOW=0.9273E+01 BASIN STORAGE=0.1724E-01 PERCENT ERROR=   0.0

051040  MANE        2.00     54.49    191.52      1.32      2.00     53.60    192.00        1.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2549E+01 OUTFLOW=0.2529E+01 BASIN STORAGE=0.1339E-01 PERCENT ERROR=   0.3

050120  MANE        0.45    251.35    194.72      1.37      2.00    248.58    194.00        1.37

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1180E+02 EXCESS=0.0000E+00 OUTFLOW=0.1180E+02 BASIN STORAGE=0.7552E-02 PERCENT ERROR=   0.0
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050120  MANE        1.54     86.49    189.92      1.64      2.00     86.34    190.00        1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3423E+01 OUTFLOW=0.3405E+01 BASIN STORAGE=0.1024E-01 PERCENT ERROR=   0.2

050130  MANE        0.54    937.92    192.96      1.49      2.00    931.69    194.00        1.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4300E+02 EXCESS=0.0000E+00 OUTFLOW=0.4301E+02 BASIN STORAGE=0.6972E-02 PERCENT ERROR=   0.0

050130  MANE        1.18    201.77    190.75      1.62      2.00    198.78    190.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8359E+01 OUTFLOW=0.8308E+01 BASIN STORAGE=0.2944E-01 PERCENT ERROR=   0.3

050140  MANE        0.54   1109.81    194.50      1.51      2.00   1109.53    194.00        1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5131E+02 EXCESS=0.0000E+00 OUTFLOW=0.5132E+02 BASIN STORAGE=0.8452E-02 PERCENT ERROR=   0.0

051410  MANE        1.05    179.25    188.68      1.70      2.00    178.08    188.00        1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6562E+01 OUTFLOW=0.6544E+01 BASIN STORAGE=0.1382E-01 PERCENT ERROR=   0.1

050140  MANE        1.23    175.37    190.24      1.70      2.00    173.00    190.00        1.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6542E+01 EXCESS=0.0000E+00 OUTFLOW=0.6529E+01 BASIN STORAGE=0.7829E-02 PERCENT ERROR=   0.1

050140  MANE        1.29    176.46    189.02      1.50      2.00    174.88    188.00        1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6905E+01 OUTFLOW=0.6874E+01 BASIN STORAGE=0.1865E-01 PERCENT ERROR=   0.2

050150  MANE        0.70   1390.33    195.38      1.53      2.00   1381.80    194.00        1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6470E+02 EXCESS=0.0000E+00 OUTFLOW=0.6474E+02 BASIN STORAGE=0.1673E-01 PERCENT ERROR=  -0.1

050150  MANE        2.00     11.57    190.40      1.09      2.00     11.50    190.00        1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6446E+00 OUTFLOW=0.6376E+00 BASIN STORAGE=0.4975E-02 PERCENT ERROR=   0.3

050160  MANE        0.17   1389.71    194.27      1.52      2.00   1382.39    194.00        1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6537E+02 EXCESS=0.0000E+00 OUTFLOW=0.6536E+02 BASIN STORAGE=0.2098E-02 PERCENT ERROR=   0.0

210110  MANE        2.00      0.06    262.27     -1.00      2.00      0.06    262.00       -1.00
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210110  MANE        2.00    19.31   190.15     1.64     2.00    19.18   192.00       1.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8808E+00 OUTFLOW=0.8759E+00 BASIN STORAGE=0.2826E-02 PERCENT ERROR=   0.2

210120  MANE        1.22    19.17   192.60     1.66     2.00    19.04   194.00       1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8892E+00 EXCESS=0.0000E+00 OUTFLOW=0.8873E+00 BASIN STORAGE=0.1240E-02 PERCENT ERROR=   0.1

070509  MANE        0.59     0.39   210.85    -1.00     2.00     0.37   212.00      -1.00

070510  MANE        1.43     0.36   229.30    -1.00     2.00     0.36   228.00      -1.00

070510  MANE        1.57    73.56   185.94     1.17     2.00    73.39   186.00       1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3709E+01 OUTFLOW=0.3686E+01 BASIN STORAGE=0.1580E-01 PERCENT ERROR=   0.2

070090  MANE        0.45    72.75   186.69     1.17     2.00    70.78   186.00       1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3695E+01 EXCESS=0.0000E+00 OUTFLOW=0.3696E+01 BASIN STORAGE=0.1007E-02 PERCENT ERROR=  -0.1

070090  MANE        0.98    28.59   184.55     1.42     2.00    27.97   184.00       1.42

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1068E+01 OUTFLOW=0.1064E+01 BASIN STORAGE=0.2675E-02 PERCENT ERROR=   0.1

210120  MANE        1.20    95.95   188.10     1.22     2.00    95.55   188.00       1.22

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4759E+01 EXCESS=0.0000E+00 OUTFLOW=0.4751E+01 BASIN STORAGE=0.5804E-02 PERCENT ERROR=   0.0

210120  MANE        1.93    68.64   188.08     1.61     2.00    68.34   188.00       1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2756E+01 OUTFLOW=0.2741E+01 BASIN STORAGE=0.6319E-02 PERCENT ERROR=   0.3

210030  MANE        1.16   176.50   190.36     1.36     2.00   174.73   192.00       1.36

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8379E+01 EXCESS=0.0000E+00 OUTFLOW=0.8370E+01 BASIN STORAGE=0.1188E-01 PERCENT ERROR=   0.0

210210  MANE        2.00    35.56   190.77     1.02     2.00    34.75   190.00       1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2043E+01 OUTFLOW=0.2019E+01 BASIN STORAGE=0.1657E-01 PERCENT ERROR=   0.3

210220  MANE        1.26    34.69   192.76     1.02     2.00    34.39   194.00       1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2017E+01 EXCESS=0.0000E+00 OUTFLOW=0.2011E+01 BASIN STORAGE=0.3762E-02 PERCENT ERROR=   0.1
```

```
210220  MANE        1.61     12.97    186.62      0.99      2.00     12.88    186.00        0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6381E+00 OUTFLOW=0.6328E+00 BASIN STORAGE=0.4044E-02 PERCENT ERROR=   0.2

210030  MANE        1.27     42.24    194.22      1.01      2.00     42.07    194.00        1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2643E+01 EXCESS=0.0000E+00 OUTFLOW=0.2635E+01 BASIN STORAGE=0.4966E-02 PERCENT ERROR=   0.1

210010  MANE        2.00     22.73    202.01      1.47      2.00     22.73    202.00        1.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1433E+01 OUTFLOW=0.1414E+01 BASIN STORAGE=0.1267E-01 PERCENT ERROR=   0.4

210020  MANE        1.80     22.60    204.86      1.47      2.00     22.44    204.00        1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1414E+01 EXCESS=0.0000E+00 OUTFLOW=0.1407E+01 BASIN STORAGE=0.4101E-02 PERCENT ERROR=   0.2

210020  MANE        1.94     33.04    188.13      0.99      2.00     32.92    188.00        0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1702E+01 OUTFLOW=0.1685E+01 BASIN STORAGE=0.1225E-01 PERCENT ERROR=   0.2

210030  MANE        1.17     36.09    205.10      1.16      2.00     36.06    204.00        1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3091E+01 EXCESS=0.0000E+00 OUTFLOW=0.3084E+01 BASIN STORAGE=0.4637E-02 PERCENT ERROR=   0.1

210030  MANE        2.00     66.19    188.92      1.03      2.00     65.89    188.00        1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3533E+01 OUTFLOW=0.3500E+01 BASIN STORAGE=0.2413E-01 PERCENT ERROR=   0.3

210040  MANE        0.34    301.73    191.97      1.19      2.00    301.73    192.00        1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1758E+02 EXCESS=0.0000E+00 OUTFLOW=0.1758E+02 BASIN STORAGE=0.6113E-02 PERCENT ERROR=   0.0

070620  MANE        0.82      0.11    207.71     -1.00      2.00      0.10    208.00       -1.00

070100  MANE        2.00      0.07    256.29     -1.00      2.00      0.06    256.00       -1.00

070100  MANE        2.00     59.65    188.75      1.25      2.00     58.68    190.00        1.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3087E+01 OUTFLOW=0.3064E+01 BASIN STORAGE=0.1545E-01 PERCENT ERROR=   0.2

070110  MANE        0.67     58.23    190.66      1.25      2.00     57.69    190.00        1.25
```

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3064E+01 EXCESS=0.0000E+00 OUTFLOW=0.3064E+01 BASIN STORAGE=0.1995E-02 PERCENT ERROR= -0.1

070110	MANE	1.05	13.86	186.00	1.34	2.00	13.86	186.00	1.34

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5750E+00 OUTFLOW=0.5722E+00 BASIN STORAGE=0.2164E-02 PERCENT ERROR= 0.1

070120	MANE	0.75	68.60	191.61	1.26	2.00	68.05	192.00	1.26

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3635E+01 EXCESS=0.0000E+00 OUTFLOW=0.3635E+01 BASIN STORAGE=0.3450E-02 PERCENT ERROR= -0.1

070809	MANE	0.55	0.36	206.99	-1.00	2.00	0.31	208.00	-1.00
070810	MANE	0.68	0.30	237.82	-1.00	2.00	0.30	238.00	-1.00
070810	MANE	1.63	50.48	186.00	1.17	2.00	50.47	186.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2578E+01 OUTFLOW=0.2561E+01 BASIN STORAGE=0.1131E-01 PERCENT ERROR= 0.2

070820	MANE	0.18	50.25	186.33	1.18	2.00	49.75	186.00	1.18

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2572E+01 EXCESS=0.0000E+00 OUTFLOW=0.2572E+01 BASIN STORAGE=0.3520E-03 PERCENT ERROR= 0.0

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 210ST
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	0.00	1.00	1.00
STORAGE	0.	8.	8.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	0.55	0.00	4.	0.	0.00	9.97	0.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 030ST
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	65.00	68.00	68.00
STORAGE	0.	1.	1.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	68.13	0.13	1.	20.	6.87	3.27	0.00

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION 1010ST
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	58.00	61.00	61.00
STORAGE	0.	1.	1.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	61.01	0.01	1.	3.	5.80	4.23	0.00

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

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: b-610R.hc1

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*              MAY   1991               *
*           VERSION 4.0.1E              *
*                                       *
*  RUN DATE  10/08/1997  TIME  07:44:53 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*           (916) 756-1104              *
*                                       *
*****************************************
```

```
X     X  XXXXXXX   XXXXX           X
X     X  X        X     X         XX
X     X  X        X                X
XXXXXXX  XXXX     X        XXXXX   X
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX          XXX
```

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:::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::
:::                                   :::
:::  Full Microcomputer Implementation :::
:::                by                 :::
:::       Haestad Methods, Inc.       :::
:::                                   :::
:::::::::::::::::::::::::::::::::::::::::
:::::::::::::::::::::::::::::::::::::::::
```

37 Brookside Road * Waterbury, Connecticut 06708 * (203) 755-1666

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

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

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

              * ******************************************************************************
              * This is THE RECOMMENDED PLAN HYDROLOGY - PART B (of Parts A & B)
              *
              * ******************************************************************************
              * - HEC-1 only allows 9 hanging hydrographs, therefore, the Recommended Plan
              *     hydrology was split into two parts, A and B.
              *
              * -  Part A includes all areas that are dependent on one another due to
              *     diversions, routing, or flow combinations.
              *
              * -  Part B includes all areas that are independent, stand-alone subbasins.
              *     These subbasins can be modeled to their outlet points without affecting
              *     or being effected by any basins from Part A.
              * ******************************************************************************
              *
              * - This file contains updated stage storage information from the Recommended
              *     Plan Design.
              *
              *     The following are changes made in the original HEC-1 study done for
              *     the City of Scottsdale (the Existing Conditions Model).  These changes
              *     were part of the Alternative Analysis Phase of the STP Papago Project
              *
              * - Combined Basins 03 and 04, as well as the following subbasins:
              *     From Basin 05 - 050005
              *     From Basin 07 - 070209, 070210, 070010, 070508, 070610, 070808
              * - Added natural storage in at the Desert Botanical Gardens (DBG)
              * - Basin 07 flow was diverted to Oak Street, and combined w/flow from Basin 05
              *     and Basin 03.
              *     Upstream of CP 030510 Basin 07 10 year flows are diverted into a pipe
              *     along Oak Street.  The 100 year flow from Basins 030809 and 030810 is
              *     diverted into a pipe along 64th St north to Oak St due to a proposed
              *     sound wall to be built by others.  The flow in the pipes is combined at
              *     CP 030510 and routed in the pipe to 030520.  The 100 year flow from the
              *     Auto Park is routed north in a pipe along 66th Street to CP 030520 where
              *     all of the flow is combined and routed east along Oak St. to the IBW.
              * - Diversions along 64th Street and Oak Street allow for 10 yr flow in the
              *     pipes.  The overflows go to the Auto Park basin or the adjacent
              *     neighborhoods.
              * - Flows into the HyView neighborhood were diverted at CP 030530 to
              *     Oak Street (CP 030520)
              * - Stage-Storage at the Auto Park was revised to reflect existing topography,
              *     with the storage augmented by excavating a deeper invert near the outlet
              * - A water surface elevation less than 1268 ft was maintained at the Auto Park
              *     to keep the homes dry on 66th Street
              * - The outflow from the Auto Park Basin was routed to CP 030530 and combined
              *     with the above flows and then routed to Oak Street
              * - Weir Elev. at the Desert Botanical Gardens was set to 1267.8 ft, based on
              *     topo
              * - Basin 05 was combined with subbasins from the eastern part of Basin 07.  A
              *     new subbasin, 210005 was created from part of the existing subbasin 210010
              * - A detention basin was inserted into subbasin 030060 after storage at 050065
              * - The flows from basin 070080 and 070420 were combined at CP 070420 and routed
              *     to CP 210005
              * - A storm drain was added from CP 210005 to 050305 picking up flow from 050030
              * - The flows from CP 050210 were routed to 050020 then to 050030 then to 050305
              * - Subbasin 050065 was split into two such that the area north of Osborn Rd.
              *     drains into the storm drain - the new basin is 050062
              * - A storm drain was added from the outlet of the Paiute Park detention basin
              *     to CP 051570
              * - All subbasins north of Osborn Rd. were re-routed in the Osborn Rd. storm
              *     drain, no flows cross to the south
              * - The area for Subbasin 050040 was adjusted based on topo flown for the area
```

* - Storage was added at CP 050040
*

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

  1           ID    ***************************************************************************
  2           ID    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
  3           ID    SCOTTSDALE - TEMPE - PHOENIX
  4           ID    ***************************************************************************
  5           ID
  6           ID    Kimley-Horn and Associates, Inc.
  7           ID    KVL Consultants, Inc.
  8           ID
  9           ID    10-Year, 6-Hour Storm Event
 10           ID    10/97
              *
              *DIAGRAM
 11           IT       2                     300
 12           IO       5
              *

 13           KK  030909   BASIN
 14           BA   0.023
 15           PH       0       0    0.50    0.97    1.61    1.76    1.86    2.05
 16           LS       0      85       0       0      98       0
 17           UK     300   0.169    0.20      99
 18           UK     100   0.010    0.10       1
 19           RK    1400   0.169    0.03            TRAP      60       1

 20           KK  030910    FROM  030909
 21           RK    2400   0.014    0.03            TRAP      60       1

 22           KK  030910   BASIN
 23           BA   0.057
 24           LS       0      86       0       0      98       0
 25           UK     300  0.0100    0.20      99
 26           UK     100  0.0100    0.10       1
 27           RK     214  0.0034    0.03            TRAP      60     1.0
 28           RK    3794  0.0207    0.03            TRAP      60     1.0

 29           KK  030910 COMBINE
 30           HC       2

 31           KK  030920    FROM  030910
 32           RK     352  0.0150   0.021            CIRC     3.0

 33           KK  031010   BASIN
 34           BA   0.082
 35           LS       0      87       0       0      98       0
 36           UK     300  0.0100    0.20      99
 37           UK     100  0.0100    0.10       1
 38           RK    1819  0.0207    0.03            TRAP      60     1.0
 39           RK    3004  0.0207    0.03            TRAP      60     1.0

 40           KK  030920    FROM  031010
 41           RK     223  0.0129   0.021            CIRC     3.0
```

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

  42          KK  030920 COMBINE
  43          HC       2

  44          KK  030930    FROM  030920
  45          RK     578  0.0150   0.013            CIRC     3.5

  46          KK  030930   BASIN
  47          BA   0.014
  48          LS       0      80       0       0      98       0
  49          UK     196  0.0100    0.27      68
  50          UK     137  0.0100    0.10      32
  51          RK     963  0.0143    0.02            TRAP     150     1.0

  52          KK  030930 COMBINE
  53          HC       2

  54          KK  030580    FROM  030930
  55          RK     750  0.0034   0.025            TRAP       8     2.0

  56          KK  030590    FROM  030580
  57          RK    1735  0.0024   0.030            TRAP    15.0     1.0

  58          KK  030590   BASIN
  59          BA   0.209
  60          LS       0      84       0       0      98       0
  61          UK     300  0.0100    0.20      99
  62          UK     100  0.0100    0.10       1
  63          RK    1305  0.0034    0.02            TRAP      64     1.0
  64          RK    3794  0.0207    0.03            TRAP      60     1.0

  65          KK  030590 COMBINE
  66          HC       2
              *
              * Natural detention storage at Desert Botanical Gardens
              *

  67          KK     DBG Natural Detention Storage
  68          KM   Topo shows minimum overtopping elevation for the Cross Cut Canal = 1267.8
  69          RS       1    STOR
  70          SV       0     0.1     1.4     7.4    25.8
  71          SE      62      64      66      68      70
  72          SQ       0      40      40      50      60
  73          ST    67.8      50       3     1.5

  74          KK  030610    FROM  030600
  75          RK     675  0.0086   0.020            TRAP     8.0     1.0

  76          KK  030610   BASIN
  77          BA   0.018
  78          LS       0      77       0       0      98       0
  79          UK     174  0.0100    0.30      41
  80          UK     122  0.0100    0.10      59
  81          RK     409  0.0010    0.02            TRAP      20     1.0
  82          RK     675  0.0086    0.02            TRAP      20     1.0
```

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

 83           KK  030610 COMBINE
 84           HC       2

 85           KK  030620    FROM  030610
 86           RK    1290  0.0086   0.020            TRAP    10.0     1.0

 87           KK  030620   BASIN
 88           BA   0.040
 89           LS       0      78       0       0      98       0
 90           UK     141  0.0100    0.31      61
 91           UK      61  0.0100    0.10      39
 92           RK    2296  0.0086    0.02            TRAP      38     1.0
 93           RK     251  0.0010    0.02            TRAP      60     1.0

 94           KK  030620 COMBINE
 95           HC       2

 96           KK  030630    FROM  030620
 97           RK     637  0.0020   0.017            TRAP    60.0       1

 98           KK  030630   BASIN
 99           BA   0.040
100           LS       0      78       0       0      98       0
101           UK     198  0.0100    0.30      17
102           UK     193  0.0100    0.10      83
103           RK    2031  0.0086    0.02            TRAP      60     1.0
104           RK     637  0.0010    0.02            TRAP      60     1.0

105           KK  030630 COMBINE
106           HC       2
              *
              * Outfall at College Ave and Continental Dr
              *

107           KK  030640    FROM  030630
108           RK     162  0.0020   0.017            TRAP    60.0       1

109           KK  030010   BASIN
110           BA   0.034
111           LS       0      79       0       0      98       0
112           UK      20  0.0100    0.40      12
113           UK     200  0.0100    0.10      88
114           RK    1240  0.0086    0.02            TRAP      20     1.0
115           RK     869  0.0010    0.02            TRAP      60     1.0

116           KK  030020    FROM  030010
117           RK     427  0.0050   0.017            TRAP    60.0       1

118           KK  030020   BASIN
119           BA   0.027
120           LS       0      79       0       0      98       0
121           UK     150  0.0100    0.30      65
122           UK      50  0.0100    0.10      35
123           RK    1175  0.0086    0.02            TRAP      38     1.0
```

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

 124          RK     427  0.0010    0.02            TRAP      60     1.0

 125          KK  030020 COMBINE
 126          HC       2

 127          KK  030030    FROM  030020
 128          RK    1326  0.0086   0.017            TRAP    45.0       1

 129          KK  030210   BASIN
 130          BA   0.046
 131          LS       0      79       0       0      98       0
 132          UK     125  0.0100    0.32      55
 133          UK      79  0.0100    0.10      45
 134          RK    1246  0.0086    0.02            TRAP      38     1.0
 135          RK    1109  0.0010    0.02            TRAP      45     1.0

 136          KK  030030    FROM  030210
 137          RK     154  0.0010   0.017            TRAP    45.0       1

 138          KK  030030   BASIN
 139          BA   0.010
 140          LS       0      79       0       0      98       0
 141          UK     150  0.0100    0.30      65
 142          UK      50  0.0100    0.10      35
 143          RK    1326  0.0086    0.02            TRAP      45     1.0

 144          KK  030030 COMBINE
 145          HC       3

 146          KK  030040    FROM  030030
 147          RK    1317  0.0010   0.017            TRAP    45.0       1

 148          KK  030040   BASIN
 149          BA   0.056
 150          LS       0      79       0       0      98       0
 151          UK     150  0.0100    0.30      65
 152          UK      50  0.0100    0.10      35
 153          RK    1299  0.0086    0.02            TRAP      38     1.0
 154          RK    1317  0.0010    0.02            TRAP      45     1.0

 155          KK  030040 COMBINE
 156          HC       2

 157          KK  030050    FROM  030040
 158          RK    1317  0.0086   0.017            TRAP    60.0       1

 159          KK  030310   BASIN
 160          BA   0.008
 161          LS       0      79       0       0      98       0
 162          UK      20  0.0100    0.40      15
 163          UK     200  0.0100    0.10      85
 164          RK    1505  0.0086    0.02            TRAP      49     1.0
```

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

 165          KK  030320    FROM  030310
 166          RK     683  0.0010   0.017            TRAP    97.5       1

 167          KK  030320   BASIN
 168          BA   0.044
 169          LS       0      79       0       0      98       0
 170          UK     108  0.0100    0.33      49
 171          UK      99  0.0100    0.10      51
 172          RK    1333  0.0010    0.02            TRAP      38     1.0
 173          RK    1237  0.0086    0.02            TRAP      45     1.0

 174          KK  030320 COMBINE
 175          HC       2

 176          KK  030330    FROM  030320
 177          RK     641  0.0010   0.017            TRAP    97.5       1

 178          KK  030410   BASIN
 179          BA   0.022
 180          LS       0      79       0       0      98       0
 181          UK     150  0.0100    0.30      65
 182          UK      50  0.0100    0.10      35
 183          RK     796  0.0086    0.02            TRAP      38     1.0
 184          RK     611  0.0010    0.02            TRAP      38     1.0

 185          KK  030330    FROM  030410
 186          RK     464  0.0086   0.017            TRAP     9.0       1

 187          KK  030330   BASIN
 188          BA   0.008
 189          LS       0      79       0       0      98       0
 190          UK      26  0.0100    0.40      17
 191          UK     193  0.0100    0.10      83
 192          RK     641  0.0010    0.02            TRAP      79     1.0

 193          KK  030330 COMBINE
 194          HC       3

 195          KK  030050    FROM  030330
 196          RK     670  0.0010   0.017            TRAP    78.8       1

 197          KK  030050   BASIN
 198          BA   0.034
 199          LS       0      79       0       0      98       0
 200          UK      85  0.0100    0.35      28
 201          UK     125  0.0100    0.10      72
 202          RK     640  0.0010    0.02            TRAP      20     1.0
 203          RK    1317  0.0086    0.02            TRAP      53     1.0
```

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

 204          KK  030050 COMBINE
 205          HC       3
              *
              * Outfall at N Scottsdale Rd and E Roosevelt St
              *

 206          KK  030060    FROM  030050
 207          RK     129  0.0010   0.017            TRAP    78.8       1
              *

 208          KK  051910   BASIN
 209          BA   0.011
 210          LS       0      79       0       0      98       0
 211          UK      37  0.0100    0.39      21
 212          UK     181  0.0100    0.10      79
 213          RK     341  0.0033    0.02            TRAP      19     1.0
 214          RK     530  0.0038    0.02            TRAP      60     1.0

 215          KK  051920    FROM  051910
 216          RK    1930  0.0030   0.013            CIRC     4.0

 217          KK  051920   BASIN
 218          BA   0.060
 219          LS       0      79       0       0      98       0
 220          UK     138  0.0100    0.31      60
 221          UK      64  0.0100    0.10      40
 222          RK    1178  0.0033    0.02            TRAP      38     1.0
 223          RK    1130  0.0038    0.02            TRAP      19     1.0

 224          KK  051920 COMBINE
 225          HC       2
              *
              * Osborn Rd outfall to Indian Bend Wash
              *

 226          KK  051930    FROM  051920
 227          RK     165  0.0030   0.013            CIRC     4.0
              *

 228          KK  052010   BASIN
 229          BA   0.047
 230          LS       0      79       0       0      98       0
 231          UK     146  0.0100    0.30      63
 232          UK      55  0.0100    0.10      37
 233          RK     966  0.0033    0.02            TRAP      38     1.0
 234          RK    1174  0.0038    0.02            TRAP      19     1.0
              *
              * Thomas Rd outfall to Indian Bend Wash
              *
```

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

 235          KK  052020    FROM  052010
 236          RK     300  0.0033   0.030            TRAP     5.0     1.0
              *

 237          KK  210310   BASIN
 238          BA   0.058
 239          LS       0      79       0       0      98       0
 240          UK     122  0.0100    0.32      49
 241          UK      83  0.0100    0.10      51
 242          RK    2187  0.0020    0.02            TRAP      45     1.0
              *
              * AZ Country Club outfall
              *

 243          KK  210320    FROM  210310
 244          RK     191  0.0032   0.025            TRAP     1.0     1.0
              *

 245          KK  070730   BASIN
 246          BA   0.032
 247          LS       0      85       0       0      98       0
 248          UK     152  0.0100    0.30      63
 249          UK      51  0.0100    0.10      37
 250          RK     499   0.012    0.02            TRAP      19     1.0
 251          RK    1550   0.012    0.03            TRAP       2     3.0
              *
              * 56th St outfall
              *

 252          KK  070740    FROM  070730
 253          RK     133  0.0058   0.017            TRAP    60.0       1
              *

 254          KK  070908   BASIN
 255          BA   0.004
 256          LS       0      85       0       0      98       0
 257          UK     300  0.0100    0.20      99
 258          UK     100  0.0100    0.10       1
 259          RK     300   0.048    0.03            TRAP       5     3.0

 260          KK  070909    FROM  070908
 261          RK      83  0.0146   0.017            TRAP      60       1

 262          KK  070910    FROM  070909
 263          RK    1600  0.0275    0.02            TRAP    30.0       1

 264          KK  070910   BASIN
 265          BA   0.040
 266          LS       0      85       0       0      98       0
 267          UK     155  0.0100    0.30      66
 268          UK      52  0.0100    0.10      34
 269          RK    1500   0.022    0.03            TRAP       2     3.0
 270          RK    1091   0.022    0.03            TRAP       2     3.0
```

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

 271          KK  070910
 272          HC       2
              *
              * 56th St and E Wilshire Dr outfall
              *

 273          KK  070920    FROM  070910
 274          RK     113  0.0058   0.017            TRAP    60.0       1
              *

 275          KK  071010   BASIN
 276          BA   0.004
 277          LS       0      87       0       0      98       0
 278          UK     300  0.0100    0.20      99
 279          UK     100  0.0100    0.10       1
 280          RK     550   0.034    0.03            TRAP       2     3.5

 281          KK  071020    FROM  071010
 282          RK     134  0.0146   0.017            TRAP    60.0       1

 283          KK  071030    FROM  071020
 284          RK     476  0.0146   0.025            TRAP     9.0       1

 285          KK  071030   BASIN
 286          BA   0.007
 287          LS       0      85       0       0      98       0
 288          UK     175  0.0100    0.28      71
 289          UK      58  0.0100    0.10      29
 290          RK     477   0.018    0.03            TRAP       2     3.0

 291          KK  071030 COMBINE
 292          HC       2
              *
              * 56th St outfall 1 block N of Oak St.
              *

 293          KK  071040    FROM  071030
 294          RK     104  0.0058   0.017            TRAP    60.0       1
              *

 295          KK  040410   BASIN
 296          BA   0.056
 297          LS       0      79       0       0      98       0
 298          UK     164  0.0100    0.30      51
 299          UK      89  0.0100    0.10      49
 300          RK    1125  0.0072    0.02            TRAP      41     1.0
 301          RK    1544  0.0004    0.02            TRAP      60     1.0
              *
              * Outfall to Indian Bend Wash
              *
```

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

 302          KK  040420    FROM  040410
 303          RK     359  0.0065   0.013            CIRC     1.3
              *
              * Notice:
              * This document, together with the concepts and designs presented herein, as an
              * instrument of service, is intended for the specific purpose and client for
              * which it was prepared.  Reuse of and improper reliance on this document
              * without written authorization and adaptation by Kimley-Horn and Associates,
              * Inc. shall be without liability to Kimley-Horn and Associates, Inc.
              *
 304          ZZ
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SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

  13       030909
                V
                V
  20       030910
                .
                .
  22            .       030910
                .            .
                .            .
  29       030910............
                V
                V
  31       030920
                .
                .
  33            .       031010
                .            V
                .            V
  40            .       030920
                .            .
                .            .
  42       030920............
                V
                V
           030930
                .
                .
  46            .       030930
                .            .
                .            .
  52       030930............
                V
                V
  54       030580
                V
                V
  56       030590
                .
                .
  58            .       030590
                .            .
                .            .
  65       030590............
                V
                V
  67          DBG
                V
                V
  74       030610
                .
                .
  76            .       030610
                .            .
                .            .
           030610............
                V
                V
  85       030620
                .
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          .
87        .      030620
          .           .
          .           .
030620............
     V
     V
96   030630
          .
          .
98        .      030630
          .           .
          .           .
105  030630............
     V
     V
107  030640
          .
          .
109       .      030010
          .           V
          .           V
116       .      030020
          .           .
          .           .
118       .           .      030020
          .           .           .
          .           .           .
125       .      030020............
          .           V
          .           V
127       .      030030
          .           .
          .           .
129       .           .      030210
          .           .           V
          .           .           V
136       .           .      030030
          .           .           .
          .           .           .
138       .           .           .      030030
          .           .           .           .
          .           .           .           .
144       .      030030........................
          .           V
          .           V
146       .      030040
          .           .
          .           .
148       .           .      030040
          .           .           .
          .           .           .
155       .      030040............
          .           V
          .           V
157       .      030050
          .           .
          .           .
159       .           .      030310
          .           .           V
          .           .           V
          .           .      030320
          .           .           .
          .           .           .
167       .           .           .      030320
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                .         .         .         .
174             .         .    030320............
                .         .         V
                .         .         V
                .         .    030330
                .         .         .
                .         .         .
178             .         .         .    030410
                .         .         .         V
                .         .         .         V
185             .         .         .    030330
                .         .         .         .
                .         .         .         .
187             .         .         .         .    030330
                .         .         .         .         .
                .         .         .         .         .
193             .         .    030330........................
                .         .         V
                .         .         V
195             .         .    030050
                .         .         .
                .         .         .
197             .         .         .    030050
                .         .         .         .
                .         .         .         .
204             .    030050........................
                .         V
                .         V
206             .    030060
                .         .
                .         .
208             .         .    051910
                .         .         V
                .         .         V
215             .         .    051920
                .         .         .
                .         .         .
217             .         .         .    051920
                .         .         .         .
                .         .         .         .
224             .         .    051920............
                .         .         V
                .         .         V
226             .         .    051930
                .         .         .
                .         .         .
228             .         .         .    052010
                .         .         .         V
                .         .         .         V
235             .         .         .    052020
                .         .         .         .
                .         .         .         .
237             .         .         .         .    210310
                .         .         .         .         V
                .         .         .         .         V
243             .         .         .         .    210320
                .         .         .         .         .
                .         .         .         .         .
245             .         .         .         .         .    070730
                .         .         .         .         .         V
                .         .         .         .         .         V
                .         .         .         .         .    070740
                .         .         .         .         .         .
                .         .         .         .         .         .
254             .         .         .         .         .         .    070908
                .         .         .         .         .         .         V
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                .         .         .         .         .         .         V
260             .         .         .         .         .         .    070909
                .         .         .         .         .         .         V
                .         .         .         .         .         .         V
                .         .         .         .         .         .    070910
                .         .         .         .         .         .         .
                .         .         .         .         .         .         .
264             .         .         .         .         .         .         .      070910
                .         .         .         .         .         .         .           .
                .         .         .         .         .         .         .           .
271             .         .         .         .         .         .    070910............
                .         .         .         .         .         .         V
                .         .         .         .         .         .         V
273             .         .         .         .         .         .    070920
                .         .         .         .         .         .         .
                .         .         .         .         .         .         .
275             .         .         .         .         .         .         .      071010
                .         .         .         .         .         .         .           V
                .         .         .         .         .         .         .           V
281             .         .         .         .         .         .         .      071020
                .         .         .         .         .         .         .           V
                .         .         .         .         .         .         .           V
283             .         .         .         .         .         .         .      071030
                .         .         .         .         .         .         .           .
                .         .         .         .         .         .         .           .
285             .         .         .         .         .         .         .           .      071030
                .         .         .         .         .         .         .           .           .
                .         .         .         .         .         .         .           .           .
291             .         .         .         .         .         .         .      071030............
                .         .         .         .         .         .         .           V
                .         .         .         .         .         .         .           V
293             .         .         .         .         .         .         .      071040
                .         .         .         .         .         .         .           .
                .         .         .         .         .         .         .           .
295             .         .         .         .         .         .         .           .      040410
                .         .         .         .         .         .         .           .           V
                .         .         .         .         .         .         .           .           V
302             .         .         .         .         .         .         .           .      040420
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

HEC1 S/N: 1343001471 HMVersion: 6.33 Data File: b-610R.hc1

```
****************************************                                    ****************************************
*                                      *                                    *                                      *
*  FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              MAY   1991              *                                    *   HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.0.1E             *                                    *         609 SECOND STREET            *
*                                      *                                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE  10/08/1997  TIME  07:44:53 *                                    *          (916) 756-1104              *
*                                      *                                    *                                      *
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                    STP-PAPAGO REGIONAL FLOOD CONTROL PROJECT
                    SCOTTSDALE - TEMPE - PHOENIX
                    ************************************************************************

                    Kimley-Horn and Associates, Inc.
                    KVL Consultants, Inc.

                    10-Year, 6-Hour Storm Event
                    10/97

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

                HYDROGRAPH TIME DATA
                       NMIN           2  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        0958  ENDING TIME
                     ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.03 HOURS
                       TOTAL TIME BASE    9.97 HOURS

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


            *** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION=  1


            *** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT


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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	030909	26.	3.17	2.	1.	1.	0.02		
ROUTED TO	030910	25.	3.37	2.	1.	1.	0.02		
HYDROGRAPH AT	030910	31.	3.60	5.	3.	3.	0.06		
2 COMBINED AT	030910	45.	3.53	8.	5.	5.	0.08		
ROUTED TO	030920	45.	3.53	8.	5.	5.	0.08		
HYDROGRAPH AT	031010	50.	3.57	8.	5.	5.	0.08		
ROUTED TO	030920	50.	3.57	8.	5.	5.	0.08		
2 COMBINED AT	030920	94.	3.57	16.	9.	9.	0.16		
ROUTED TO	030930	94.	3.57	16.	9.	9.	0.16		
HYDROGRAPH AT	030930	12.	3.17	1.	1.	1.	0.01		
2 COMBINED AT	030930	100.	3.57	17.	10.	10.	0.18		
ROUTED TO	030580	99.	3.60	17.	10.	10.	0.18		
ROUTED TO	030590	99.	3.67	17.	10.	10.	0.18		
HYDROGRAPH AT	030590	97.	3.63	17.	10.	10.	0.21		
2 COMBINED AT	030590	195.	3.63	34.	21.	21.	0.38		
ROUTED TO	DBG	53.	4.50	34.	21.	21.	0.38	67.88	4.50
ROUTED TO	030610	53.	4.50	34.	21.	21.	0.38		
HYDROGRAPH AT	030610	31.	3.10	2.	1.	1.	0.02		
2 COMBINED AT	030610	54.	4.50	36.	22.	22.	0.40		
ROUTED TO	030620	54.	4.53	36.	22.	22.	0.40		
HYDROGRAPH AT	030620	41.	3.17	4.	3.	3.	0.04		
2 COMBINED AT	030620	72.	3.17	41.	25.	25.	0.44		
ROUTED TO	030630	71.	3.20	41.	25.	25.	0.44		
HYDROGRAPH AT	030630	76.	3.20	7.	4.	4.	0.04		
2 COMBINED AT	030630	147.	3.20	47.	29.	29.	0.48		
ROUTED TO	030640	146.	3.20	47.	29.	29.	0.48		
HYDROGRAPH AT	030010	74.	3.17	6.	4.	4.	0.03		
ROUTED TO	030020	73.	3.20	6.	4.	4.	0.03		
HYDROGRAPH AT	030020	29.	3.13	3.	2.	2.	0.03		

2 COMBINED AT	030020	97.	3.17	9.	5.	5.	0.06
ROUTED TO	030030	96.	3.20	9.	5.	5.	0.06
HYDROGRAPH AT	030210	55.	3.17	5.	3.	3.	0.05
ROUTED TO	030030	53.	3.17	5.	3.	3.	0.05
HYDROGRAPH AT	030030	9.	3.13	1.	1.	1.	0.01
3 COMBINED AT	030030	157.	3.20	15.	9.	9.	0.12
ROUTED TO	030040	154.	3.27	15.	9.	9.	0.12
HYDROGRAPH AT	030040	50.	3.17	6.	4.	4.	0.06
2 COMBINED AT	030040	197.	3.23	21.	13.	13.	0.17
ROUTED TO	030050	196.	3.27	21.	13.	13.	0.17
HYDROGRAPH AT	030310	16.	3.17	1.	1.	1.	0.01
ROUTED TO	030320	16.	3.27	1.	1.	1.	0.01
HYDROGRAPH AT	030320	55.	3.20	6.	3.	3.	0.04
2 COMBINED AT	030320	65.	3.23	7.	4.	4.	0.05
ROUTED TO	030330	64.	3.27	7.	4.	4.	0.05
HYDROGRAPH AT	030410	23.	3.13	2.	1.	1.	0.02
ROUTED TO	030330	22.	3.13	2.	1.	1.	0.02
HYDROGRAPH AT	030330	16.	3.17	1.	1.	1.	0.01
3 COMBINED AT	030330	92.	3.23	11.	6.	6.	0.08
ROUTED TO	030050	91.	3.30	11.	6.	6.	0.08
HYDROGRAPH AT	030050	69.	3.13	5.	3.	3.	0.03
3 COMBINED AT	030050	328.	3.27	37.	22.	22.	0.29
ROUTED TO	030060	326.	3.27	37.	22.	22.	0.29
HYDROGRAPH AT	051910	24.	3.13	2.	1.	1.	0.01
ROUTED TO	051920	23.	3.20	2.	1.	1.	0.01
HYDROGRAPH AT	051920	74.	3.13	7.	4.	4.	0.06
2 COMBINED AT	051920	93.	3.13	9.	5.	5.	0.07
ROUTED TO	051930	92.	3.13	9.	5.	5.	0.07
HYDROGRAPH AT	052010	53.	3.13	5.	3.	3.	0.05
ROUTED TO	052020	52.	3.13	5.	3.	3.	0.05
HYDROGRAPH AT	210310	73.	3.17	7.	4.	4.	0.06
ROUTED TO	210320	72.	3.17	7.	4.	4.	0.06
HYDROGRAPH AT	070730	41.	3.10	4.	2.	2.	0.03

ROUTED TO	070740	41.	3.10	4.	2.	2.	0.03
HYDROGRAPH AT	070908	2.	3.50	0.	0.	0.	0.00
ROUTED TO	070909	2.	3.50	0.	0.	0.	0.00
ROUTED TO	070910	2.	3.63	0.	0.	0.	0.00
HYDROGRAPH AT	070910	49.	3.10	5.	3.	3.	0.04
2 COMBINED AT	070910	49.	3.10	5.	3.	3.	0.04
ROUTED TO	070920	48.	3.10	5.	3.	3.	0.04
HYDROGRAPH AT	071010	3.	3.47	0.	0.	0.	0.00
ROUTED TO	071020	3.	3.47	0.	0.	0.	0.00
ROUTED TO	071030	3.	3.50	0.	0.	0.	0.00
HYDROGRAPH AT	071030	8.	3.07	1.	1.	1.	0.01
2 COMBINED AT	071030	8.	3.07	1.	1.	1.	0.01
ROUTED TO	071040	8.	3.07	1.	1.	1.	0.01
HYDROGRAPH AT	040410	55.	3.27	7.	4.	4.	0.06
ROUTED TO	040420	55.	3.27	7.	4.	4.	0.06

SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
(FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)

ISTAQ	ELEMENT	DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	INTERPOLATED TO COMPUTATION INTERVAL DT (MIN)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)
030909	MANE	1.04	26.25	190.91	0.83	2.00	26.06	190.00	0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1033E+01 OUTFLOW=0.1024E+01 BASIN STORAGE=0.2535E-02 PERCENT ERROR= 0.6

030910	MANE	1.74	25.76	200.87	0.92	2.00	25.28	202.00	0.92

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1023E+01 EXCESS=0.0000E+00 OUTFLOW=0.1129E+01 BASIN STORAGE=0.7919E-02 PERCENT ERROR= -11.1

030910	MANE	2.00	30.94	215.56	0.87	2.00	30.87	216.00	0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2724E+01 OUTFLOW=0.2649E+01 BASIN STORAGE=0.5696E-01 PERCENT ERROR= 0.7

030920	MANE	0.30	44.62	212.44	0.88	2.00	44.51	212.00	0.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3772E+01 EXCESS=0.0000E+00 OUTFLOW=0.3772E+01 BASIN STORAGE=0.4104E-03 PERCENT ERROR= 0.0

031010	MANE	1.95	50.23	214.62	0.93	2.00	50.10	214.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4169E+01 OUTFLOW=0.4053E+01 BASIN STORAGE=0.8562E-01 PERCENT ERROR= 0.7

030920	MANE	0.15	50.09	214.33	0.93	2.00	50.00	214.00	0.93

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4048E+01 EXCESS=0.0000E+00 OUTFLOW=0.4048E+01 BASIN STORAGE=0.3173E-03 PERCENT ERROR= 0.0

030930	MANE	0.22	94.43	214.35	0.91	2.00	94.32	214.00	0.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7821E+01 EXCESS=0.0000E+00 OUTFLOW=0.7821E+01 BASIN STORAGE=0.8473E-03 PERCENT ERROR= 0.0

030930	MANE	2.00	11.94	189.99	0.97	2.00	11.94	190.00	0.97

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.7369E+00 OUTFLOW=0.7271E+00 BASIN STORAGE=0.7064E-02 PERCENT ERROR= 0.4

030580	MANE	0.87	99.51	215.58	0.91	2.00	99.39	216.00	0.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8549E+01 EXCESS=0.0000E+00 OUTFLOW=0.8544E+01 BASIN STORAGE=0.7332E-02 PERCENT ERROR= 0.0

030590	MANE	2.00	99.02	218.96	0.91	2.00	98.89	220.00	0.90

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8539E+01 EXCESS=0.0000E+00 OUTFLOW=0.8500E+01 BASIN STORAGE=0.3170E-01 PERCENT ERROR= 0.1

030590	MANE	2.00	97.13	218.00	0.77	2.00	97.13	218.00	0.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.8796E+01 OUTFLOW=0.8544E+01 BASIN STORAGE=0.1944E+00 PERCENT ERROR= 0.6

030610	MANE	0.65	52.58	269.97	0.83	2.00	52.58	270.00	0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1703E+02 EXCESS=0.0000E+00 OUTFLOW=0.1702E+02 BASIN STORAGE=0.7726E-02 PERCENT ERROR= 0.0

030610	MANE	0.69	31.25	187.05	1.27	2.00	30.76	186.00	1.26

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1220E+01 OUTFLOW=0.1215E+01 BASIN STORAGE=0.4973E-02 PERCENT ERROR= 0.0

030620	MANE	1.02	53.87	271.27	0.85	2.00	53.86	272.00	0.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1823E+02 EXCESS=0.0000E+00 OUTFLOW=0.1822E+02 BASIN STORAGE=0.1662E-01 PERCENT ERROR= 0.0

030620	MANE	0.65	41.60	189.46	1.01	2.00	41.25	190.00	1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2184E+01 OUTFLOW=0.2161E+01 BASIN STORAGE=0.1505E-01 PERCENT ERROR= 0.4

030630	MANE	0.91	71.65	191.78	0.86	2.00	70.98	192.00	0.86

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2038E+02 EXCESS=0.0000E+00 OUTFLOW=0.2035E+02 BASIN STORAGE=0.2811E-01 PERCENT ERROR= 0.0

030630	MANE	1.19	76.10	192.27	1.58	2.00	76.09	192.00	1.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3415E+01 OUTFLOW=0.3381E+01 BASIN STORAGE=0.1726E-01 PERCENT ERROR= 0.5

030640	MANE	0.28	146.62	192.18	0.92	2.00	146.45	192.00	0.92

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2373E+02 EXCESS=0.0000E+00 OUTFLOW=0.2373E+02 BASIN STORAGE=0.7434E-02 PERCENT ERROR= 0.0

030010	MANE	1.55	74.95	190.86	1.66	2.00	74.12	190.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3030E+01 OUTFLOW=0.3015E+01 BASIN STORAGE=0.9083E-02 PERCENT ERROR= 0.2

030020	MANE	0.63	73.63	191.13	1.66	2.00	73.12	192.00	1.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3013E+01 EXCESS=0.0000E+00 OUTFLOW=0.3013E+01 BASIN STORAGE=0.1461E-02 PERCENT ERROR= 0.0

030020	MANE	1.11	28.84	187.63	0.99	2.00	28.68	188.00	0.99

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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1436E+01 OUTFLOW=0.1423E+01 BASIN STORAGE=0.1024E-01 PERCENT ERROR=   0.2

      030030  MANE        1.09     96.60    192.83      1.36      2.00     95.84    192.00        1.36

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4434E+01 EXCESS=0.0000E+00 OUTFLOW=0.4426E+01 BASIN STORAGE=0.5460E-02 PERCENT ERROR=   0.1

      030210  MANE        2.00     54.85    189.36      1.11      2.00     54.56    190.00        1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2758E+01 OUTFLOW=0.2734E+01 BASIN STORAGE=0.1817E-01 PERCENT ERROR=   0.2

      030030  MANE        0.34     54.39    190.70      1.11      2.00     53.30    190.00        1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2733E+01 EXCESS=0.0000E+00 OUTFLOW=0.2733E+01 BASIN STORAGE=0.1017E-02 PERCENT ERROR=   0.0

      030030  MANE        2.00      9.49    186.68      0.99      2.00      9.47    188.00        0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.5318E+00 OUTFLOW=0.5264E+00 BASIN STORAGE=0.3714E-02 PERCENT ERROR=   0.3

      030040  MANE        1.69    155.81    195.46      1.23      2.00    153.95    196.00        1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7685E+01 EXCESS=0.0000E+00 OUTFLOW=0.7662E+01 BASIN STORAGE=0.1906E-01 PERCENT ERROR=   0.1

      030040  MANE        1.90     50.50    189.97      0.99      2.00     50.50    190.00        0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2977E+01 OUTFLOW=0.2945E+01 BASIN STORAGE=0.2628E-01 PERCENT ERROR=   0.2

      030050  MANE        0.86    196.60    196.07      1.15      2.00    196.30    196.00        1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1062E+02 EXCESS=0.0000E+00 OUTFLOW=0.1060E+02 BASIN STORAGE=0.1524E-01 PERCENT ERROR=   0.0

      030310  MANE        2.00     16.18    191.14      1.62      2.00     15.91    190.00        1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6967E+00 OUTFLOW=0.6922E+00 BASIN STORAGE=0.2237E-02 PERCENT ERROR=   0.3

      030320  MANE        1.92     15.86    196.09      1.61      2.00     15.76    196.00        1.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6917E+00 EXCESS=0.0000E+00 OUTFLOW=0.6887E+00 BASIN STORAGE=0.2895E-02 PERCENT ERROR=   0.0

      030320  MANE        1.22     55.97    191.34      1.19      2.00     55.40    192.00        1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2817E+01 OUTFLOW=0.2791E+01 BASIN STORAGE=0.1644E-01 PERCENT ERROR=   0.3

      030330  MANE        1.50     64.54    196.88      1.25      2.00     64.07    196.00        1.25
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CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3479E+01 EXCESS=0.0000E+00 OUTFLOW=0.3464E+01 BASIN STORAGE=0.7899E-02 PERCENT ERROR=   0.2

        030410  MANE        1.53     23.28    187.42      0.99      2.00     23.14    188.00        0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1170E+01 OUTFLOW=0.1159E+01 BASIN STORAGE=0.8486E-02 PERCENT ERROR=   0.2

        030330  MANE        0.49     22.93    188.91      0.99      2.00     22.46    188.00        0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1160E+01 EXCESS=0.0000E+00 OUTFLOW=0.1160E+01 BASIN STORAGE=0.3717E-03 PERCENT ERROR=   0.0

        030330  MANE        2.00     15.74    191.61      1.60      2.00     15.68    190.00        1.60

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.6859E+00 OUTFLOW=0.6814E+00 BASIN STORAGE=0.2145E-02 PERCENT ERROR=   0.3

        030050  MANE        1.26     91.68    196.67      1.21      2.00     90.85    198.00        1.21

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5302E+01 EXCESS=0.0000E+00 OUTFLOW=0.5285E+01 BASIN STORAGE=0.1029E-01 PERCENT ERROR=   0.1

        030050  MANE        1.17     69.05    187.97      1.46      2.00     69.03    188.00        1.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2661E+01 OUTFLOW=0.2651E+01 BASIN STORAGE=0.7570E-02 PERCENT ERROR=   0.1

        030060  MANE        0.20    327.61    196.32      1.20      2.00    326.18    196.00        1.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1853E+02 EXCESS=0.0000E+00 OUTFLOW=0.1853E+02 BASIN STORAGE=0.4475E-02 PERCENT ERROR=   0.0

        051910  MANE        1.06     24.07    187.93      1.55      2.00     24.05    188.00        1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.9132E+00 OUTFLOW=0.9101E+00 BASIN STORAGE=0.1824E-02 PERCENT ERROR=   0.1

        051920  MANE        1.54     23.52    191.63      1.55      2.00     23.23    192.00        1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9101E+00 EXCESS=0.0000E+00 OUTFLOW=0.9110E+00 BASIN STORAGE=0.1894E-03 PERCENT ERROR=  -0.1

        051920  MANE        0.94     74.54    187.32      1.05      2.00     73.53    188.00        1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3393E+01 OUTFLOW=0.3370E+01 BASIN STORAGE=0.1964E-01 PERCENT ERROR=   0.1

        051930  MANE        0.24     92.45    188.21      1.13      2.00     91.74    188.00        1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4277E+01 EXCESS=0.0000E+00 OUTFLOW=0.4277E+01 BASIN STORAGE=0.1005E-03 PERCENT ERROR=   0.0

        052010  MANE        1.19     53.74    187.19      1.01      2.00     53.17    188.00        1.01
```

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2563E+01 OUTFLOW=0.2542E+01 BASIN STORAGE=0.1622E-01 PERCENT ERROR= 0.2

052020 MANE 0.49 52.72 188.46 1.01 2.00 52.25 188.00 1.01

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2542E+01 EXCESS=0.0000E+00 OUTFLOW=0.2543E+01 BASIN STORAGE=0.5898E-03 PERCENT ERROR= 0.0

210310 MANE 2.00 72.92 190.07 1.19 2.00 72.80 190.00 1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3713E+01 OUTFLOW=0.3683E+01 BASIN STORAGE=0.1986E-01 PERCENT ERROR= 0.3

210320 MANE 0.29 72.47 190.38 1.19 2.00 72.11 190.00 1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3682E+01 EXCESS=0.0000E+00 OUTFLOW=0.3682E+01 BASIN STORAGE=0.2759E-03 PERCENT ERROR= 0.0

070730 MANE 1.32 41.93 186.47 1.19 2.00 41.44 186.00 1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2046E+01 OUTFLOW=0.2034E+01 BASIN STORAGE=0.8539E-02 PERCENT ERROR= 0.2

070740 MANE 0.22 41.27 186.40 1.19 2.00 40.62 186.00 1.19

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2035E+01 EXCESS=0.0000E+00 OUTFLOW=0.2034E+01 BASIN STORAGE=0.3858E-03 PERCENT ERROR= 0.0

070908 MANE 0.43 2.21 210.21 0.83 2.00 2.21 210.00 0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.1796E+00 OUTFLOW=0.1766E+00 BASIN STORAGE=0.2053E-02 PERCENT ERROR= 0.5

070909 MANE 0.32 2.21 210.51 0.83 2.00 2.20 210.00 0.83

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1765E+00 EXCESS=0.0000E+00 OUTFLOW=0.1764E+00 BASIN STORAGE=0.7098E-04 PERCENT ERROR= 0.0

070910 MANE 1.96 2.18 217.18 0.82 2.00 2.17 218.00 0.82

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1765E+00 EXCESS=0.0000E+00 OUTFLOW=0.1753E+00 BASIN STORAGE=0.1194E-02 PERCENT ERROR= 0.0

070910 MANE 0.84 49.17 185.78 1.16 2.00 49.14 186.00 1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2494E+01 OUTFLOW=0.2478E+01 BASIN STORAGE=0.1157E-01 PERCENT ERROR= 0.2

070920 MANE 0.16 49.02 186.31 1.13 2.00 48.34 186.00 1.13

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2653E+01 EXCESS=0.0000E+00 OUTFLOW=0.2653E+01 BASIN STORAGE=0.4409E-03 PERCENT ERROR= 0.0

071010 MANE 0.80 2.63 208.20 0.94 2.00 2.63 208.00 0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.2034E+00 OUTFLOW=0.2002E+00 BASIN STORAGE=0.2286E-02 PERCENT ERROR= 0.5

071020	MANE	0.43	2.63	208.27	0.94	2.00	2.63	208.00	0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2002E+00 EXCESS=0.0000E+00 OUTFLOW=0.2001E+00 BASIN STORAGE=0.1176E-03 PERCENT ERROR= 0.0

071030	MANE	0.93	2.62	209.98	0.94	2.00	2.62	210.00	0.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2001E+00 EXCESS=0.0000E+00 OUTFLOW=0.1999E+00 BASIN STORAGE=0.1727E-03 PERCENT ERROR= 0.0

071030	MANE	0.55	7.92	183.96	1.11	2.00	7.91	184.00	1.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.4180E+00 OUTFLOW=0.4148E+00 BASIN STORAGE=0.2156E-02 PERCENT ERROR= 0.2

071040	MANE	0.28	8.00	184.68	1.05	2.00	7.75	184.00	1.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6147E+00 EXCESS=0.0000E+00 OUTFLOW=0.6146E+00 BASIN STORAGE=0.1943E-03 PERCENT ERROR= 0.0

040410	MANE	2.00	55.51	196.67	1.16	2.00	55.23	196.00	1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.0000E+00 EXCESS=0.3509E+01 OUTFLOW=0.3462E+01 BASIN STORAGE=0.3786E-01 PERCENT ERROR= 0.3

040420	MANE	0.36	55.08	196.37	1.16	2.00	54.91	196.00	1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3463E+01 EXCESS=0.0000E+00 OUTFLOW=0.3462E+01 BASIN STORAGE=0.2715E-03 PERCENT ERROR= 0.0

SUMMARY OF DAM OVERTOPPING/BREACH ANALYSIS FOR STATION DBG
(PEAKS SHOWN ARE FOR INTERNAL TIME STEP USED DURING BREACH FORMATION)

LAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	62.00	67.80	67.80
STORAGE	0.	7.	7.
OUTFLOW	0.	49.	49.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
1.00	67.88	0.08	7.	53.	0.57	4.50	0.00

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