```
 HYDROGRAPH AT
+                    P3B        .05      1   FLOW          95.
                                             TIME        11.92
                                         2   FLOW         137.
                                             TIME        11.92
                                         3   FLOW         145.
                                             TIME        11.92
                                         4   FLOW         163.
                                             TIME        11.92
                                         5   FLOW         183.
                                             TIME        11.92

 HYDROGRAPH AT
+                    P3A        .02      1   FLOW          41.
                                             TIME        11.92
                                         2   FLOW          60.
                                             TIME        11.92
                                         3   FLOW          64.
                                             TIME        11.92
                                         4   FLOW          71.
                                             TIME        11.92
                                         5   FLOW          80.
                                             TIME        11.92

  2 COMBINED AT
+                    COMB       .07      1   FLOW         136.
                                             TIME        11.92
                                         2   FLOW         197.
                                             TIME        11.92
                                         3   FLOW         208.
                                             TIME        11.92
                                         4   FLOW         234.
                                             TIME        11.92
                                         5   FLOW         263.
                                             TIME        11.92

    COMBINED AT
+                    COMB      1.26      1   FLOW        1442.
                                             TIME        12.50
                                         2   FLOW        2271.
                                             TIME        12.50
                                         3   FLOW        2557.
                                             TIME        12.50
                                         4   FLOW        2871.
                                             TIME        12.50
                                         5   FLOW        3245.
                                             TIME        12.50
1
                                 SUMMARY OF KINEMATIC WAVE - MUSKINGUM-CUNGE ROUTING
                                     (FLOW IS DIRECT RUNOFF WITHOUT BASE FLOW)
                                                                  INTERPOLATED TO
                                                              COMPUTATION INTERVAL
          ISTAQ    ELEMENT      DT        PEAK    TIME TO     VOLUME      DT        PEAK    TIME TO     VOLUME
                                                     PEAK                                       PEAK

                              (MIN)      (CFS)     (MIN)      (IN)     (MIN)      (CFS)     (MIN)      (IN)

        FOR PLAN = 1  RATIO=  .00
           CHANN  MANE         5.00      46.02    725.00      3.40      5.00      46.02    725.00      3.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5102E+01 EXCESS= .0000E+00 OUTFLOW= .5080E+01 BASIN STORAGE= .3816E-01 PERCENT ERROR=   -.3

        FOR PLAN = 2  RATIO=  .00
           CHANN  MANE         5.00      70.52    725.00      6.33      5.00      70.52    725.00      6.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9485E+01 EXCESS= .0000E+00 OUTFLOW= .9456E+01 BASIN STORAGE= .5866E-01 PERCENT ERROR=   -.3

        FOR PLAN = 3  RATIO=  .00
           CHANN  MANE         5.00      78.15    725.00      7.69      5.00      78.15    725.00      7.69

 NTINUITY SUMMARY (AC-FT) - INFLOW= .1153E+02 EXCESS= .0000E+00 OUTFLOW= .1149E+02 BASIN STORAGE= .6846E-01 PERCENT ERROR=   -.3

        FOR PLAN = 4  RATIO=  .00
           CHANN  MANE         5.00      87.51    725.00      8.97      5.00      87.51    725.00      8.97
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1344E+02 EXCESS= .0000E+00 OUTFLOW= .1340E+02 BASIN STORAGE= .7762E-01 PERCENT ERROR=   -.3

        FOR PLAN = 5  RATIO=  .00
           CHANN  MANE          5.00     98.97    725.00     10.05      5.00     98.97    725.00      10.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1506E+02 EXCESS= .0000E+00 OUTFLOW= .1502E+02 BASIN STORAGE= .7730E-01 PERCENT ERROR=   -.2

        FOR PLAN = 1  RATIO=  .00
           CHANN  MANE          5.00     28.49    750.00      2.57      5.00     28.49    750.00       2.57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3307E+01 EXCESS= .0000E+00 OUTFLOW= .3286E+01 BASIN STORAGE= .3998E-01 PERCENT ERROR=   -.6

        FOR PLAN = 2  RATIO=  .00
           CHANN  MANE          5.00     50.35    725.00      5.28      5.00     50.35    725.00       5.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6801E+01 EXCESS= .0000E+00 OUTFLOW= .6767E+01 BASIN STORAGE= .6372E-01 PERCENT ERROR=   -.4

        FOR PLAN = 3  RATIO=  .00
           CHANN  MANE          5.00     57.21    725.00      6.59      5.00     57.21    725.00       6.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8478E+01 EXCESS= .0000E+00 OUTFLOW= .8436E+01 BASIN STORAGE= .7492E-01 PERCENT ERROR=   -.4

        FOR PLAN = 4  RATIO=  .00
           CHANN  MANE          5.00     66.58    725.00      7.81      5.00     66.58    725.00       7.81

 ITINUITY SUMMARY (AC-FT) - INFLOW= .1006E+02 EXCESS= .0000E+00 OUTFLOW= .1001E+02 BASIN STORAGE= .8537E-01 PERCENT ERROR=   -.4

        FOR PLAN = 5  RATIO=  .00
           CHANN  MANE          5.00     76.83    725.00      8.87      5.00     76.83    725.00       8.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1141E+02 EXCESS= .0000E+00 OUTFLOW= .1136E+02 BASIN STORAGE= .8529E-01 PERCENT ERROR=   -.3

        FOR PLAN = 1  RATIO=  .00
           CHANN  MANE          1.21     82.64    726.41      3.07      5.00     80.67    725.00       3.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9997E+01 EXCESS= .0000E+00 OUTFLOW= .9991E+01 BASIN STORAGE= .1061E-01 PERCENT ERROR=    .0

        FOR PLAN = 2  RATIO=  .00
           CHANN  MANE          1.03    139.20    725.49      5.92      5.00    138.39    725.00       5.92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1926E+02 EXCESS= .0000E+00 OUTFLOW= .1925E+02 BASIN STORAGE= .1680E-01 PERCENT ERROR=    .0

        FOR PLAN = 3  RATIO=  .00
           CHANN  MANE           .99    157.36    726.34      7.26      5.00    155.77    725.00       7.26

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2362E+02 EXCESS= .0000E+00 OUTFLOW= .2361E+02 BASIN STORAGE= .1978E-01 PERCENT ERROR=    .0

        FOR PLAN = 4  RATIO=  .00
           CHANN  MANE           .95    178.62    725.85      8.51      5.00    177.34    725.00       8.51

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2770E+02 EXCESS= .0000E+00 OUTFLOW= .2769E+02 BASIN STORAGE= .2258E-01 PERCENT ERROR=    .0

        FOR PLAN = 5  RATIO=  .00
           CHANN  MANE           .91    203.49    725.57      9.58      5.00    202.45    725.00       9.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3119E+02 EXCESS= .0000E+00 OUTFLOW= .3118E+02 BASIN STORAGE= .2252E-01 PERCENT ERROR=    .0
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FOR PLAN = 1  RATIO=  .00
   CHANN  MANE        1.49    231.51    751.80      3.15      5.00    229.73    755.00        3.15

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3377E+02 EXCESS= .0000E+00 OUTFLOW= .3375E+02 BASIN STORAGE= .4165E-01 PERCENT ERROR=    .0

FOR PLAN = 2  RATIO=  .00
   CHANN  MANE        1.29    370.81    750.62      6.01      5.00    369.90    750.00        6.01

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6448E+02 EXCESS= .0000E+00 OUTFLOW= .6444E+02 BASIN STORAGE= .6575E-01 PERCENT ERROR=    .0

FOR PLAN = 3  RATIO=  .00
   CHANN  MANE        1.24    418.56    750.12      7.35      5.00    418.45    750.00        7.35

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7889E+02 EXCESS= .0000E+00 OUTFLOW= .7884E+02 BASIN STORAGE= .7732E-01 PERCENT ERROR=    .0

FOR PLAN = 4  RATIO=  .00
   CHANN  MANE        1.19    470.63    750.47      8.61      5.00    470.39    750.00        8.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9234E+02 EXCESS= .0000E+00 OUTFLOW= .9228E+02 BASIN STORAGE= .8824E-01 PERCENT ERROR=    .0

FOR PLAN = 5  RATIO=  .00
   CHANN  MANE        1.15    532.79    750.48      9.69      5.00    532.65    750.00        9.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1039E+03 EXCESS= .0000E+00 OUTFLOW= .1038E+03 BASIN STORAGE= .8797E-01 PERCENT ERROR=    .0

FOR PLAN = 1  RATIO=  .00
   CHANN  MANE        4.39    263.72    755.43      3.16      5.00    263.60    755.00        3.17

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3956E+02 EXCESS= .0000E+00 OUTFLOW= .3947E+02 BASIN STORAGE= .1433E+00 PERCENT ERROR=   -.1

FOR PLAN = 2  RATIO=  .00
   CHANN  MANE        3.79    423.76    750.72      6.02      5.00    423.24    750.00        6.03

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7536E+02 EXCESS= .0000E+00 OUTFLOW= .7522E+02 BASIN STORAGE= .2258E+00 PERCENT ERROR=   -.1

FOR PLAN = 3  RATIO=  .00
   CHANN  MANE        3.65    480.25    749.15      7.37      5.00    479.49    750.00        7.37

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9221E+02 EXCESS= .0000E+00 OUTFLOW= .9203E+02 BASIN STORAGE= .2649E+00 PERCENT ERROR=   -.1

FOR PLAN = 4  RATIO=  .00
   CHANN  MANE        3.52    539.61    746.31      8.63      5.00    539.31    750.00        8.63

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1079E+03 EXCESS= .0000E+00 OUTFLOW= .1077E+03 BASIN STORAGE= .3021E+00 PERCENT ERROR=   -.1

FOR PLAN = 5  RATIO=  .00
   CHANN  MANE        3.38    612.96    747.79      9.70      5.00    610.66    750.00        9.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1213E+03 EXCESS= .0000E+00 OUTFLOW= .1211E+03 BASIN STORAGE= .3015E+00 PERCENT ERROR=   -.1

FOR PLAN = 1  RATIO=  .00
    PIPE  MANE        1.62    113.02    748.68      3.93      5.00    112.88    750.00        3.93

NTINUITY SUMMARY (AC-FT) - INFLOW= .1616E+02 EXCESS= .0000E+00 OUTFLOW= .1615E+02 BASIN STORAGE= .1137E-01 PERCENT ERROR=    .0

FOR PLAN = 2  RATIO=  .00
    PIPE  MANE        1.50    167.07    746.12      6.93      5.00    166.96    745.00        6.93
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .2847E+02 EXCESS= .0000E+00 OUTFLOW= .2845E+02 BASIN STORAGE= .1886E-01 PERCENT ERROR=     .0

        FOR PLAN = 3  RATIO=  .00
           PIPE  MANE          1.46    188.32    737.39      8.31      5.00    188.18    740.00        8.31

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3415E+02 EXCESS= .0000E+00 OUTFLOW= .3413E+02 BASIN STORAGE= .2267E-01 PERCENT ERROR=     .0

        FOR PLAN = 4  RATIO=  .00
           PIPE  MANE          1.43    208.24    736.96      9.59      5.00    207.68    740.00        9.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3943E+02 EXCESS= .0000E+00 OUTFLOW= .3940E+02 BASIN STORAGE= .2635E-01 PERCENT ERROR=     .0

        FOR PLAN = 5  RATIO=  .00
           PIPE  MANE          1.40    234.76    737.73     10.69      5.00    234.36    740.00       10.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4392E+02 EXCESS= .0000E+00 OUTFLOW= .4389E+02 BASIN STORAGE= .2620E-01 PERCENT ERROR=     .0

        FOR PLAN = 1  RATIO=  .00
           CHANN  MANE         1.41    447.40    749.95      3.34      5.00    447.37    750.00        3.34

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6652E+02 EXCESS= .0000E+00 OUTFLOW= .6647E+02 BASIN STORAGE= .7484E-01 PERCENT ERROR=     .0

        FOR PLAN = 2  RATIO=  .00
           CHANN  MANE         1.22    705.37    745.15      6.24      5.00    705.24    745.00        6.24

VTINUITY SUMMARY (AC-FT) - INFLOW= .1242E+03 EXCESS= .0000E+00 OUTFLOW= .1241E+03 BASIN STORAGE= .1174E+00 PERCENT ERROR=     .0

        FOR PLAN = 3  RATIO=  .00
           CHANN  MANE         1.17    800.56    741.94      7.59      5.00    797.90    745.00        7.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1511E+03 EXCESS= .0000E+00 OUTFLOW= .1510E+03 BASIN STORAGE= .1377E+00 PERCENT ERROR=     .0

        FOR PLAN = 4  RATIO=  .00
           CHANN  MANE         1.13    897.74    741.65      8.85      5.00    894.11    745.00        8.86

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1762E+03 EXCESS= .0000E+00 OUTFLOW= .1761E+03 BASIN STORAGE= .1569E+00 PERCENT ERROR=     .0

        FOR PLAN = 5  RATIO=  .00
           CHANN  MANE         1.09   1016.28    741.64      9.94      5.00   1013.01    745.00        9.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1978E+03 EXCESS= .0000E+00 OUTFLOW= .1977E+03 BASIN STORAGE= .1564E+00 PERCENT ERROR=     .0

        FOR PLAN = 1  RATIO=  .00
           CHANN  MANE         1.26    617.62    751.28      3.32      5.00    616.10    750.00        3.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9243E+02 EXCESS= .0000E+00 OUTFLOW= .9237E+02 BASIN STORAGE= .9311E-01 PERCENT ERROR=     .0

        FOR PLAN = 2  RATIO=  .00
           CHANN  MANE         1.09    974.21    750.28      6.22      5.00    974.10    750.00        6.22

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1729E+03 EXCESS= .0000E+00 OUTFLOW= .1728E+03 BASIN STORAGE= .1461E+00 PERCENT ERROR=     .0

        FOR PLAN = 3  RATIO=  .00
           CHANN  MANE         1.05   1101.60    746.06      7.57      5.00   1098.75    745.00        7.57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2105E+03 EXCESS= .0000E+00 OUTFLOW= .2104E+03 BASIN STORAGE= .1715E+00 PERCENT ERROR=     .0
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FOR PLAN = 4  RATIO=  .00
   CHANN  MANE          1.01   1235.50    745.83      8.83      5.00   1233.19    745.00        8.83

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2456E+03 EXCESS= .0000E+00 OUTFLOW= .2454E+03 BASIN STORAGE= .1955E+00 PERCENT ERROR=    .0

FOR PLAN = 5  RATIO=  .00
   CHANN  MANE           .97   1399.10    746.41      9.91      5.00   1396.23    745.00        9.92

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2757E+03 EXCESS= .0000E+00 OUTFLOW= .2755E+03 BASIN STORAGE= .1948E+00 PERCENT ERROR=    .0

FOR PLAN = 1  RATIO=  .00
    PIPE  MANE           .64     40.56    725.63      3.94      5.00     40.35    725.00        3.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5464E+01 EXCESS= .0000E+00 OUTFLOW= .5462E+01 BASIN STORAGE= .1523E-02 PERCENT ERROR=    .0

FOR PLAN = 2  RATIO=  .00
    PIPE  MANE           .59     60.27    725.82      6.94      5.00     59.95    725.00        6.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9625E+01 EXCESS= .0000E+00 OUTFLOW= .9623E+01 BASIN STORAGE= .2529E-02 PERCENT ERROR=    .0

FOR PLAN = 3  RATIO=  .00
    PIPE  MANE           .58     66.44    729.66      8.32      5.00     66.42    730.00        8.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1154E+02 EXCESS= .0000E+00 OUTFLOW= .1154E+02 BASIN STORAGE= .3040E-02 PERCENT ERROR=    .0

FOR PLAN = 4  RATIO=  .00
    PIPE  MANE           .57     73.95    726.39      9.61      5.00     73.47    730.00        9.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1333E+02 EXCESS= .0000E+00 OUTFLOW= .1333E+02 BASIN STORAGE= .3534E-02 PERCENT ERROR=    .0

FOR PLAN = 5  RATIO=  .00
    PIPE  MANE           .55     83.16    726.25     10.71      5.00     82.89    730.00       10.71

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1485E+02 EXCESS= .0000E+00 OUTFLOW= .1485E+02 BASIN STORAGE= .3512E-02 PERCENT ERROR=    .0

FOR PLAN = 1  RATIO=  .00
    PIPE  MANE           .80     43.80    726.93      3.94      5.00     43.69    730.00        3.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6092E+01 EXCESS= .0000E+00 OUTFLOW= .6090E+01 BASIN STORAGE= .2105E-02 PERCENT ERROR=    .0

FOR PLAN = 2  RATIO=  .00
    PIPE  MANE           .73     65.45    729.58      6.94      5.00     65.44    730.00        6.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1073E+02 EXCESS= .0000E+00 OUTFLOW= .1073E+02 BASIN STORAGE= .3495E-02 PERCENT ERROR=    .0

FOR PLAN = 3  RATIO=  .00
    PIPE  MANE           .72     73.23    730.38      8.32      5.00     73.12    730.00        8.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1287E+02 EXCESS= .0000E+00 OUTFLOW= .1287E+02 BASIN STORAGE= .4199E-02 PERCENT ERROR=    .0

FOR PLAN = 4  RATIO=  .00
    PIPE  MANE           .70     81.17    730.32      9.61      5.00     81.12    730.00        9.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1486E+02 EXCESS= .0000E+00 OUTFLOW= .1486E+02 BASIN STORAGE= .4882E-02 PERCENT ERROR=    .0

FOR PLAN = 5  RATIO=  .00
    PIPE  MANE           .69     91.46    730.25     10.70      5.00     91.39    730.00       10.70
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1656E+02 EXCESS= .0000E+00 OUTFLOW= .1655E+02 BASIN STORAGE= .4851E-02 PERCENT ERROR=     .0

        FOR PLAN = 1  RATIO=  .00
            PIPE  MANE          .86     77.73     730.67      3.94      5.00     77.66    730.00        3.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1092E+02 EXCESS= .0000E+00 OUTFLOW= .1092E+02 BASIN STORAGE= .4063E-02 PERCENT ERROR=     .0

        FOR PLAN = 2  RATIO=  .00
            PIPE  MANE          .79    116.42     730.86      6.94      5.00    116.33    730.00        6.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1924E+02 EXCESS= .0000E+00 OUTFLOW= .1923E+02 BASIN STORAGE= .6745E-02 PERCENT ERROR=     .0

        FOR PLAN = 3  RATIO=  .00
            PIPE  MANE          .77    130.06     731.14      8.32      5.00    129.51    730.00        8.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2308E+02 EXCESS= .0000E+00 OUTFLOW= .2307E+02 BASIN STORAGE= .8105E-02 PERCENT ERROR=     .0

        FOR PLAN = 4  RATIO=  .00
            PIPE  MANE          .76    144.25     731.20      9.60      5.00    143.94    730.00        9.60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2664E+02 EXCESS= .0000E+00 OUTFLOW= .2664E+02 BASIN STORAGE= .9423E-02 PERCENT ERROR=     .0

        FOR PLAN = 5  RATIO=  .00
            PIPE  MANE          .74    162.49     731.05     10.70      5.00    162.02    730.00       10.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2968E+02 EXCESS= .0000E+00 OUTFLOW= .2968E+02 BASIN STORAGE= .9362E-02 PERCENT ERROR=     .0

        FOR PLAN = 1  RATIO=  .00
            PIPE  MANE          .72    160.67     726.20      3.94      5.00    159.34    745.00        3.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2227E+02 EXCESS= .0000E+00 OUTFLOW= .2226E+02 BASIN STORAGE= .6962E-02 PERCENT ERROR=     .0

        FOR PLAN = 2  RATIO=  .00
            PIPE  MANE          .66    239.69     726.32      6.94      5.00    238.42    730.00        6.94

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3923E+02 EXCESS= .0000E+00 OUTFLOW= .3922E+02 BASIN STORAGE= .1156E-01 PERCENT ERROR=     .0

        FOR PLAN = 3  RATIO=  .00
            PIPE  MANE          .65    267.35     730.24      8.32      5.00    267.23    730.00        8.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .4705E+02 EXCESS= .0000E+00 OUTFLOW= .4704E+02 BASIN STORAGE= .1389E-01 PERCENT ERROR=     .0

        FOR PLAN = 4  RATIO=  .00
            PIPE  MANE          .64    296.05     729.63      9.61      5.00    296.03    730.00        9.61

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5432E+02 EXCESS= .0000E+00 OUTFLOW= .5431E+02 BASIN STORAGE= .1615E-01 PERCENT ERROR=     .0

        FOR PLAN = 5  RATIO=  .00
            PIPE  MANE          .62    333.78     730.31     10.70      5.00    333.75    730.00       10.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6052E+02 EXCESS= .0000E+00 OUTFLOW= .6051E+02 BASIN STORAGE= .1605E-01 PERCENT ERROR=     .0

        FOR PLAN = 1  RATIO=  .00
            PIPE  MANE         2.31    228.81     727.72      3.93      5.00    227.64    730.00        3.93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3152E+02 EXCESS= .0000E+00 OUTFLOW= .3148E+02 BASIN STORAGE= .3177E-01 PERCENT ERROR=     .0

        FOR PLAN = 2  RATIO=  .00
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        PIPE  MANE          2.13     341.52     727.29       6.93       5.00     340.15     730.00        6.93

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5553E+02 EXCESS= .0000E+00 OUTFLOW= .5547E+02 BASIN STORAGE= .5270E-01 PERCENT ERROR=     .0

      FOR PLAN = 3  RATIO=  .00
        PIPE  MANE          2.09     379.58     729.61       8.31       5.00     379.50     730.00        8.32

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6658E+02 EXCESS= .0000E+00 OUTFLOW= .6652E+02 BASIN STORAGE= .6340E-01 PERCENT ERROR=     .0

      FOR PLAN = 4  RATIO=  .00
        PIPE  MANE          2.05     421.28     728.84       9.60       5.00     420.63     730.00        9.60

CONTINUITY SUMMARY (AC-FT) - INFLOW= .7689E+02 EXCESS= .0000E+00 OUTFLOW= .7681E+02 BASIN STORAGE= .7364E-01 PERCENT ERROR=     .0

      FOR PLAN = 5  RATIO=  .00
        PIPE  MANE          2.00     474.09     730.02      10.70       5.00     474.08     730.00       10.70

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8564E+02 EXCESS= .0000E+00 OUTFLOW= .8558E+02 BASIN STORAGE= .7318E-01 PERCENT ERROR=     .0


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

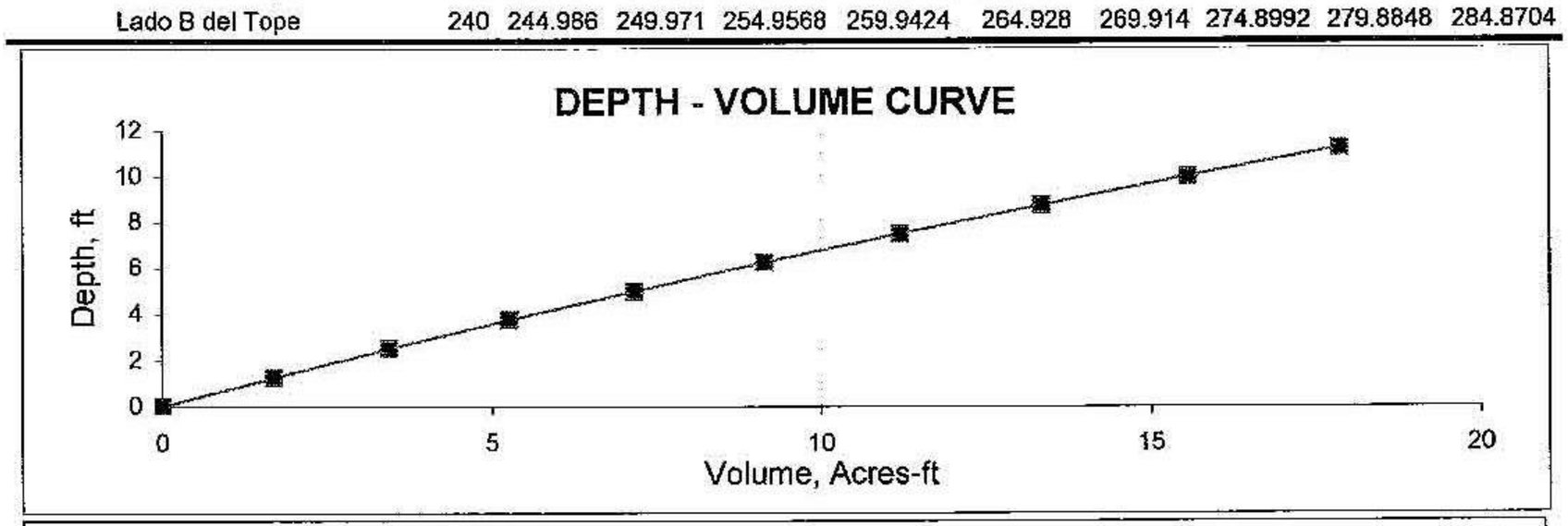
APPENDIX D

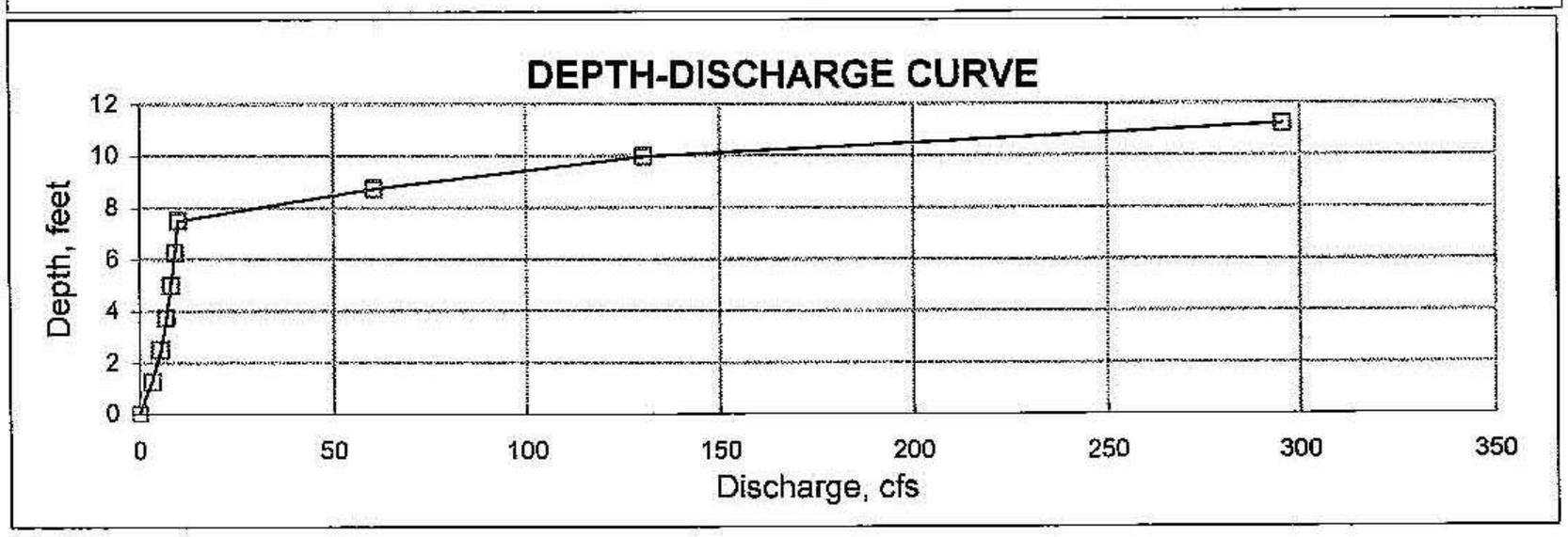
FLOW- DEPTH-VOLUME RELATIONS

Project: La Sabana
Vega Baja, Puerto Rico.
Description: Detention Pond-P1

FLOW RATING CURV DELTA

Structure Head		m	0	0.38	0.76	1.14	1.52	1.9	2.28	2.66	3.04	3.42
		ft	0	1.2464	2.4928	3.7392	4.9856	6.232	7.4784	8.7248	9.9712	11.2176
	Diameter (feet)		1	1	1	1	1	1	1	1	1	1
	Number		1	1	1	1	1	1	1	1	1	1
	Head over CL (feet)		-0.5	0.7464	1.9928	3.2392	4.4856	5.732	6.9784	8.2248	9.4712	10.7176
ORIF #1	Discharge Coef		0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)		0	3.32162	5.42745	6.919625	8.142803	9.204851	10.1564	11.02621	11.83222	12.58672
	Head over invert (feet)		0	1.2464	2.4928	3.7392	4.9856	6.232	7.4784	8.7248	9.9712	11.2176
	Velocity (fps)		0	4.2292	6.91042	8.810319	10.36771	11.71995	12.9316	14.03898	15.06521	16.02587
	Invert El (m)		2	2	2	2	2	2	2	2	2	2
	(feet)		6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56	6.56
	Diameter (feet)		2	2	2	2	2	2	2	2	2	2
	Number		3	3	3	3	3	3	3	3	3	3
ORIF #2	Head over CL (feet)		-7.56	-6.3136	-5.0672	-3.8208	-2.5744	-1.328	-0.0816	1.1648	2.4112	3.6576
	Discharge Coef		0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)		0	0	0	0	0	0	0	49.79326	71.64098	88.23543
	Velocity (fps)		0	0	0	0	0	0	0	15.84965	22.80398	28.08614
	Invert El (m)		2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Rect	(feet)		9.184	9.184	9.184	9.184	9.184	9.184	9.184	9.184	9.184	9.184
WEIR	Width (feet)	5	24	24	24	24	24	24	24	24	24	24
	Cc		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
	Head over weir (feet)		-9.184	-7.9376	-6.6912	-5.4448	-4.1984	-2.952	-1.7056	-0.4592	0.7872	2.0336
	Flow (cfs)		0	0	0	0	0	0	0	0	46.87698	194.6392
	FLOW SUMMATION (cf		0	3.32162	5.42745	6.919625	8.142803	9.204851	10.1564	60.81948	130.3502	295.4614
RECTANGULAR LAGOON		Area=		5353.96 m2								
	Lado A de la Base, ft		240	240	240	240	240	240	240	240	240	240
	Lado B de la Base, ft		240	240	240	240	240	240	240	240	240	240
	h (ft)		0	1.2464	2.4928	3.7392	4.9856	6.232	7.4784	8.7248	9.9712	11.2176
	Slope 1:		2	2	2	2	2	2	2	2	2	2
	Area (sqft)		57600	60018	62486	65003	67570	70187	72853	75570	78336	81151
	(acre)		1.3233	1.3788	1.4355	1.4933	1.5523	1.6124	1.6737	1.7361	1.7996	1.8643
	Volume, acre-ft		0.0000	1.6845	3.4396	5.2676	7.1704	9.1504	11.2095	13.3500	15.5739	17.8834
	Lado A del Tope		240	244.986	249.971	254.9568	259.9424	264.928	269.914	274.8992	279.8848	284.8704
	Lado B del Tope		240	244.986	249.971	254.9568	259.9424	264.928	269.914	274.8992	279.8848	284.8704

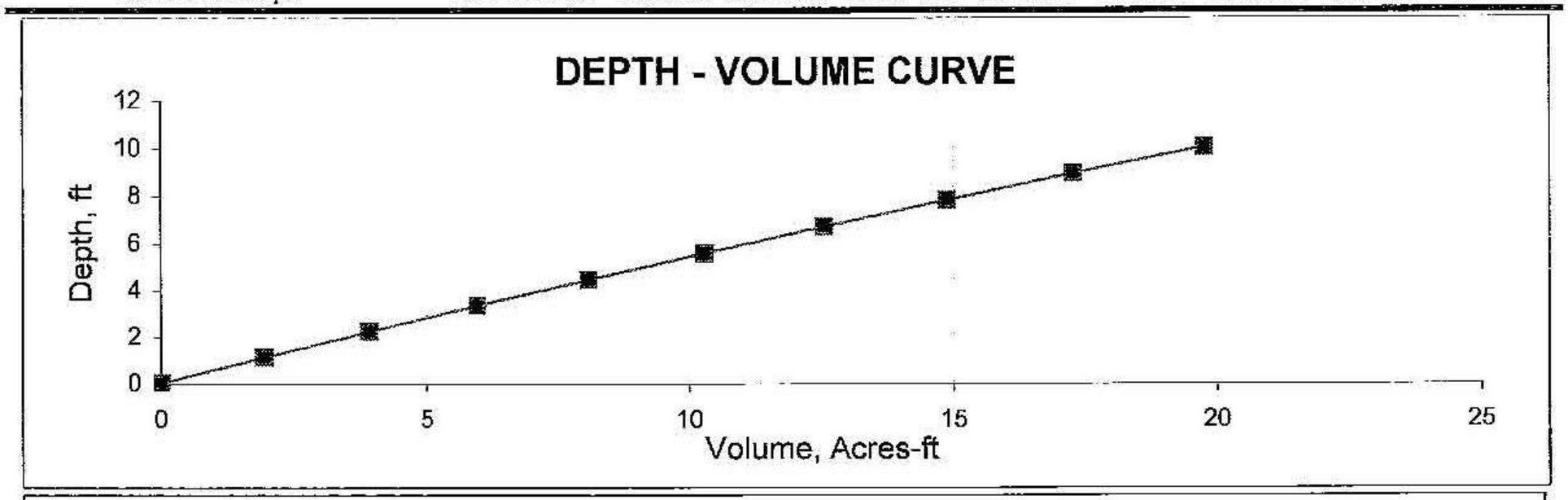


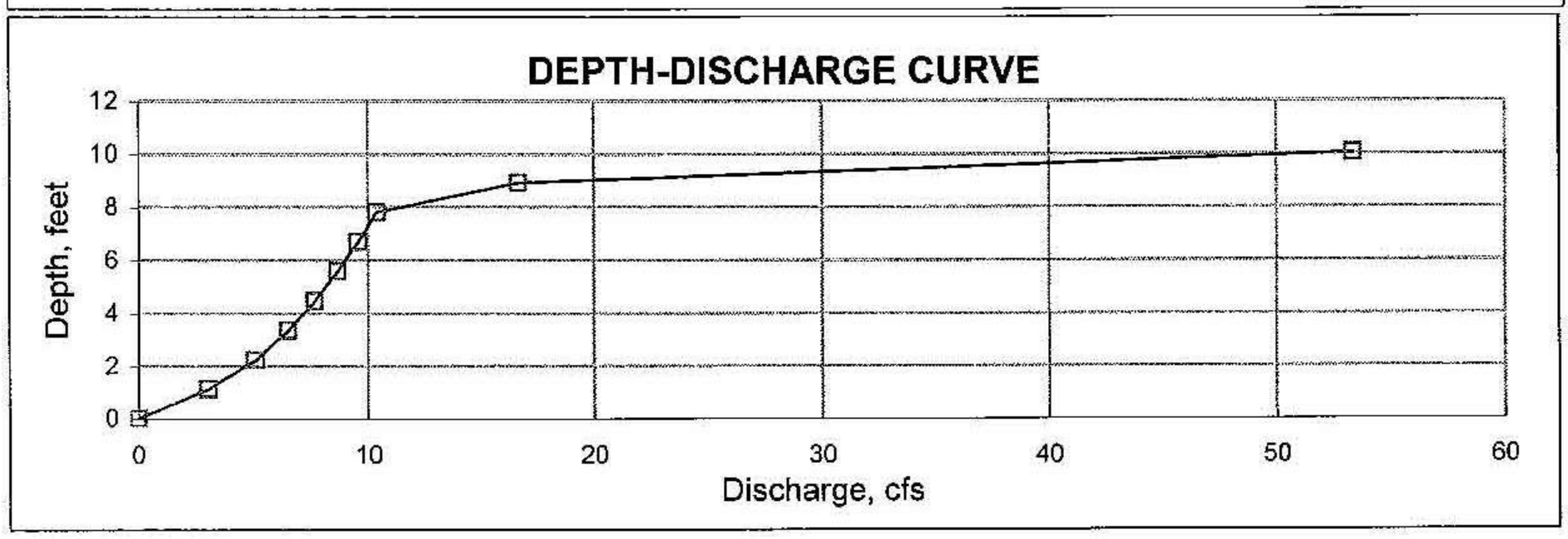


Project: La Sabana
Vega Baja, Puerto Rico.
Description: Detention Pond-P2

FLOW RATING CURVI DELTA

Structure	Head	m	0	0.34	0.68	1.02	1.36	1.7	2.04	2.38	2.72	3.06
		ft	0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
	Diameter (feet)		1	1	1	1	1	1	1	1	1	1
	Number		1	1	1	1	1	1	1	1	1	1
	Head over CL (feet)		-0.5	0.6152	1.7304	2.8456	3.9608	5.076	6.1912	7.3064	8.4216	9.5368
ORIF #1	Discharge Coef		0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61
	Flow (cfs)		0	3.01559	5.05751	6.485606	7.65165	8.662126	9.56646	10.39239	11.15735	11.87312
	Head over invert (feet)		0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
	Velocity (fps)		0	3.83956	6.43941	8.257711	9.742361	11.02893	12.1804	13.23197	14.20594	15.1173
	Invert El (m)		2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Rect	(feet)		8.528	8.528	8.528	8.528	8.528	8.528	8.528	8.528	8.528	8.528
WEIR	Width (feet)	5	8	8	8	8	8	8	8	8	8	8
	Cc		0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
	Head over weir (feet)		-8.528	-7.4128	-6.2976	-5.1824	-4.0672	-2.952	-1.8368	-0.7216	0.3936	1.5088
	Flow (cfs)		0	0	0	0	0	0	0	0	5.524506	41.46277
	FLOW SUMMATION (cf		0	3.01559	5.05751	6.485606	7.65165	8.662126	9.56646	10.39239	16.68185	53.33589
RECTANGULAR LAGOON		Area=	6876.86	m2								
	Lado A de la Base, ft		272	272	272	272	272	272	272	272	272	272
	Lado B de la Base, ft		272	272	272	272	272	272	272	272	272	272
	h (ft)		0	1.1152	2.2304	3.3456	4.4608	5.576	6.6912	7.8064	8.9216	10.0368
	Slope 1:		2	2	2	2	2	2	2	2	2	2
	Area (sqft)		73984	76431	78917	81443	84009	86615	89260	91946	94671	97436
	(acre)		1.6997	1.7559	1.8130	1.8710	1.9300	1.9898	2.0506	2.1123	2.1749	2.2384
	Volume, acre-ft		0.0000	1.9274	3.9186	5.9749	8.0980	10.2895	12.5507	14.8833	17.2887	19.7686
	Lado A del Tope		272	276.461	280.922	285.3824	289.8432	294.304	298.765	303.2256	307.6864	312.1472
	Lado B del Tope		272	276.461	280.922	285.3824	289.8432	294.304	298.765	303.2256	307.6864	312.1472





APPENDIX E

HEC-1 RESULTS FOR MITIGATION CONDITION

```
*                                        *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)    *
*              JUN   1998                *
*            VERSION 4.1                 *
*  RGMHEC2000                HEC-1.COM   *
*  RUN DATE   30AUG07  TIME  13:32:58    *
*                                        *
******************************************
```

```
*                                        *
*    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
```

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        HYDROLOGIC ANALYSIS
  2           ID        PROJECT: LA SABANA
  3           ID        TRIANGULAR DISTRIBUTION
  4           ID        FREQUENCY OF OCCURRENCE: 2, 10, 25, 50 AND 100 YEARS
  5           ID        CA ENGINEERING, AUGUST 2007
  6           ID         PROPOSED CONDITION AND MITIGATION
  7           IT       5                    289
  8           IO       4
  9           JP       5

 10           KK      E3
 11           KP       1
 12           BA   0.028
 13           LS       0   87.89
 14           UD    0.10
 15           IN      15
 16           KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
 17           PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 18           KP       2
 19           KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
 20           PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
 21           KP       3
 22           KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
 23           PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
 24           KP       4
 25           KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
 26           PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
 27           KP       5
 28           KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
 29           PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

 30           KK    CHANN
 31           KO       3                          21
 32           RD    1630   0.005   0.035          TRAP      12     0.3

 33           KK      E4
 34           KP       1
 35           BA   0.024
 36           LS       0      79
 37           UD    0.11
 38           IN      15
 39           KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
 40           PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 41           KP       2
 42           KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
 43           PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
 44           KP       3
 45           KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
 46           PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
 47           KP       4
 48           KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
 49           PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
 50           KP       5
 51           KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
 52           PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60
```



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

 53           KK    CHANN
 54           KO       3                          21
 55           RD    2021   0.005   0.035          TRAP      12     0.3

 56           KK    COMB1
 57           HC       2

 58           KK      E2
 59           KP       1
 60           BA   0.009
 61           LS       0   87.82
 62           UD    0.10
 63           IN      15
 64           KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
 65           PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 66           KP       2
 67           KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
```

```
68          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
69          KP       3
70          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
71          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
72          KP       4
73          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
74          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
75          KP       5
76          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
77          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

78          KK   COMB2
79          HC       2

80          KK   CHANN
81          KO       3                          21
82          RD     593   0.006   0.013          TRAP      12       2

83          KK      P1
84          KP       1
85          BA   0.140
86          LS       0   85.76
87          UD    0.50
88          IN      15
89          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
90          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
91          KP       2
92          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
93          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
94          KP       3
95          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
96          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
97          KP       4
98          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
99          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
100         KP       5
101         KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
```



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

102         PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

103         KK   COMB3
104         HC       2

105         KK   CHANN
106         KO       3                          21
107         RD     948   0.005   0.013          TRAP      12       2

108         KK      E5
109         KP       1
110         BA   0.033
111         LS       0   86.77
112         UD    0.10
113         IN      15
114         KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
115         PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
116         KP       2
117         KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
118         PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
119         KP       3
120         KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
121         PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
122         KP       4
123         KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
124         PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
125         KP       5
126         KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
127         PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

128         KK   COMB4
129         HC       2

130         KK   CHANN
131         KO       3                          21
132         RD    2920   0.005   0.013          TRAP      12       2

133         KK      P2E
134         KP       1
135         BA   0.077
```

```
 136          LS       0      93
 137          UD    0.29
 138          IN      15
 139          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
 140          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 141          KP       2
 142          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
 143          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
 144          KP       3
 145          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
 146          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
 147          KP       4
 148          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
 149          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
 150          KP       5
1                                        HEC-1 INPUT                                          PAGE  4

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

 151          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
 152          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

 153          KK    PIPE
 154          KO       3                            21
 155          RD    1099   0.005   0.013           CIRC      5

 156          KK      E6
 157          KP       1
 158          BA   0.062
 159          LS       0   86.57
 160          UD    0.11
 161          IN      15
 162          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
 163          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 164          KP       2
 165          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
 166          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
 167          KP       3
 168          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
 169          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
 170          KP       4
 171          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
 172          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
 173          KP       5
 174          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
 175          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

 176          KK    COMB5
 177          HC       3

 178          KK    CHANN
 179          KO       3                            21
 180          RD    1102   0.005   0.013           TRAP     12       2

 181          KK      E7
 182          KP       1
 183          BA   0.148
 184          LS       0   86.78
 185          UD    0.47
 186          IN      15
 187          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
 188          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
 189          KP       2
 190          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
 191          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
 192          KP       3
 193          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
 194          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
 195          KP       4
 196          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
 197          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
 198          KP       5
 199          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
 200          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60
1                                        HEC-1 INPUT                                          PAGE  5

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


 201          KK    COMB6
 202          HC       2
```

```
203          KK   CHANN
204          KO       3                                21
205          RD    1089   0.005   0.013            TRAP      12       2

206          KK       E
207          KP       1
208          BA   0.448
209          LS       0   84.67
210          UD    0.60
211          IN      15
212          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
213          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
214          KP       2
215          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
216          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
217          KP       3
218          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
219          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
220          KP       4
221          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
222          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
223          KP       5
224          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
225          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

226          KK      E1
227          KP       1
228          BA   0.008
229          LS       0   82.92
230          UD    0.17
231          IN      15
232          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
233          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
234          KP       2
235          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
236          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
237          KP       3
238          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
239          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
240          KP       4
241          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
242          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
243          KP       5
244          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
245          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60
```



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

246          KK   COMB8
247          HC       2

248          KK     P2A
249          KP       1
250          BA   0.026
251          LS       0      93
252          UD    0.22
253          IN      15
254          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
255          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
256          KP       2
257          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
258          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
259          KP       3
260          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
261          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
262          KP       4
263          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
264          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
265          KP       5
266          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
267          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

268          KK    PIPE
269          KO       3                                21
270          RD     337   0.005   0.013            CIRC      3.5

271          KK     P2B
272          KP       1
```

```
273          BA   0.028
274          LS       0      93
275          UD    0.18
276          IN      15
277          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
278          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
279          KP       2
280          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
281          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
282          KP       3
283          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
284          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
285          KP       4
286          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
287          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
288          KP       5
289          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
290          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60
1                                          HEC-1 INPUT                                          PAGE  7

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

291          KK    COMB
292          HC       2

293          KK     P2D
294          KP       1
295          BA   0.029
296          LS       0      93
297          UD    0.24
298          IN      15
299          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
300          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
301          KP       2
302          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
303          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
304          KP       3
305          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
306          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
307          KP       4
308          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
309          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
310          KP       5
311          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
312          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

313          KK    PIPE
314          KO       3                            21
315          RD     426  0.005   0.013            CIRC     3.5

316          KK     P2C
317          KP       1
318          BA   0.023
319          LS       0      93
320          UD    0.26
321          IN      15
322          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
323          PH                    0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
324          KP       2
325          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
326          PH                    0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
327          KP       3
328          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
329          PH                    0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
330          KP       4
331          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
332          PH                    0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
333          KP       5
334          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
335          PH                    0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60
1                                          HEC-1 INPUT                                          PAGE  8

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

336          KK    COMB
337          HC       2

338          KK    PIPE
339          KO       3                            21
```

```
340          RD     524   0.005   0.013            CIRC       4

341          KK    COMB
342          HC       2

343          KK    PIPE
344          KO       3                              21
345          RD     524   0.005   0.013            CIRC       5

346          KK     P2F
347          KP       1
348          BA   0.044
349          LS       0      93
350          UD    0.19
351          IN      15
352          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
353          PH                   0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
354          KP       2
355          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
356          PH                   0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
357          KP       3
358          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
359          PH                   0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
360          KP       4
361          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
362          PH                   0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
363          KP       5
364          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
365          PH                   0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

366          KK    COMB
367          HC       2

368          KK    PIPE
369          KO       3                              21
370          RD    1807   0.005   0.013            CIRC       5

371          KK     P2G
372          KP       1
373          BA   0.065
374          LS       0      93
375          UD    0.23
376          IN      15
377          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
378          PH                   0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
379          KP       2
380          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
381          PH                   0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
382          KP       3
```



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

383          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
384          PH                   0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
385          KP       4
386          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
387          PH                   0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
388          KP       5
389          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
390          PH                   0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

391          KK    POND
392          KM   RUNOFF MITIGATION POND CALCULATION
393          KO    3.00    1.00
394          RS    1.00    ELEV    0.00
395          SQ    0.00    3.32    5.43    6.92    8.14    9.20   10.16   60.82  130.35  295.46
396          SV   0.000   1.684   3.440   5.268   7.170   9.150  11.209  13.350  15.574  17.883
397          SE    0.00    1.25    2.49    3.74    4.99    6.23    7.48    8.72    9.97   11.22

398          KK     P3B
399          KP       1
400          BA   0.049
401          LS       0      93
402          UD    0.09
403          IN      15
404          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
405          PH                   0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
406          KP       2
407          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
408          PH                   0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
```

```
409          KP       3
410          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
411          PH                0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
412          KP       4
413          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
414          PH                0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
415          KP       5
416          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
417          PH                0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

418          KK     P3A
419          KP       1
420          BA   0.021
421          LS       0      93
422          UD    0.08
423          IN      15
424          KM           RUNOFF COMPUTATION 2-YRS STORM IN BASIN
425          PH                0.18    0.50    2.40    2.55    2.75    3.30    4.10    4.75
426          KP       2
427          KM           RUNOFF COMPUTATION 10-YRS STORM IN BASIN
428          PH                0.27    0.75    3.35    3.95    4.40    5.40    6.60    7.80
429          KP       3
430          KM           RUNOFF COMPUTATION 25-YRS STORM IN BASIN
431          PH                0.32    0.90    3.62    4.65    5.25    6.50    7.70    9.20
432          KP       4
433          KM           RUNOFF COMPUTATION 50-YRS STORM IN BASIN
434          PH                0.34    0.97    4.00    5.30    5.90    7.50    8.70   10.50
```



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

435          KP       5
436          KM           RUNOFF COMPUTATION 100-YRS STORM IN BASIN
437          PH                0.39    1.10    4.50    5.65    6.80    8.00    9.80   11.60

438          KK    COMB
439          HC       2

440          KK    POND
441          KM   RUNOFF MITIGATION POND CALCULATION
442          KO    3.00    1.00
443          RS    1.00    ELEV    0.00
444          SQ    0.00    6.54   17.95   24.52   29.67   34.06   37.94   41.45   54.84  100.45
445          SV   0.000   2.043   4.157   6.345   8.607  10.947  13.366  15.865  18.446  21.112
446          SE    0.00    1.18    2.36    3.54    4.72    5.90    7.08    8.27    9.45   10.63

447          KK    COMB
448          HC       5
449          ZZ
```

```
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN   1998               *
 *            VERSION 4.1                *
 *  RGMHEC2000                HEC-1.COM  *
 *  RUN DATE   30AUG07  TIME  13:32:58   *
 *                                       *
 *****************************************
```

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

```
                    HYDROLOGIC ANALYSIS
                    PROJECT: LA SABANA
                    TRIANGULAR DISTRIBUTION
                    FREQUENCY OF OCCURRENCE: 2, 10, 25, 50 AND 100 YEARS
                    CA ENGINEERING, AUGUST 2007
                     PROPOSED CONDITION AND MITIGATION

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

  IT          HYDROGRAPH TIME DATA
                     NMIN          5  MINUTES IN COMPUTATION INTERVAL
                    IDATE     1    0  STARTING DATE
                    ITIME       0000  STARTING TIME
                       NQ        289  NUMBER OF HYDROGRAPH ORDINATES
                   NDDATE     2    0  ENDING DATE
```

```
                NDTIME          0000  ENDING TIME
                ICENT             19  CENTURY MARK

            COMPUTATION INTERVAL     .08 HOURS
                 TOTAL TIME BASE   24.00 HOURS

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

JP          MULTI-PLAN OPTION
                 NPLAN             5  NUMBER OF PLANS

JR          MULTI-RATIO OPTION
                RATIOS OF RUNOFF
               1.00

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

          **************
          *            *
  10 KK   *        E3  *
          *            *
          **************

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

  11 KP        PLAN  1 FOR STATION       E3
                          RUNOFF COMPUTATION 2-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

  12 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .03  SUBBASIN AREA

                 PRECIPITATION DATA

  17 PH                              DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                                STORM AREA =      .03

  13 LS          SCS LOSS RATE
                      STRTL          .28  INITIAL ABSTRACTION
                     CRVNBR        87.89  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

  14 UD          SCS DIMENSIONLESS UNITGRAPH
                      TLAG          .10  LAG

                                                   ***

                                                UNIT HYDROGRAPH
                                             8 END-OF-PERIOD ORDINATES
                 61.       91.       40.       15.        6.        2.        1.        0.

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

  18 KP        PLAN  2 FOR STATION       E3
                          RUNOFF COMPUTATION 10-YRS STORM IN BASIN

               SUBBASIN RUNOFF DATA

  12 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .03  SUBBASIN AREA

                 PRECIPITATION DATA

  20 PH                              DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
```

```
                  ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =      .03

 13 LS            SCS LOSS RATE
                        STRTL         .28  INITIAL ABSTRACTION
                       CRVNBR       87.89  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

 14 UD            SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            8 END-OF-PERIOD ORDINATES
                61.       91.       40.       15.        6.        2.        1.        0.

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

 21 KP          PLAN  3 FOR STATION       E3
                                   RUNOFF COMPUTATION 25-YRS STORM IN BASIN

                SUBBASIN RUNOFF DATA

 12 BA            SUBBASIN CHARACTERISTICS
                         TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

 23 PH                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                                STORM AREA =      .03

 13 LS            SCS LOSS RATE
                        STRTL         .28  INITIAL ABSTRACTION
                       CRVNBR       87.89  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

 14 UD            SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            8 END-OF-PERIOD ORDINATES
                61.       91.       40.       15.        6.        2.        1.        0.

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

 24 KP          PLAN  4 FOR STATION       E3
                                   RUNOFF COMPUTATION 50-YRS STORM IN BASIN

                SUBBASIN RUNOFF DATA

 12 BA            SUBBASIN CHARACTERISTICS
                         TAREA         .03  SUBBASIN AREA

                  PRECIPITATION DATA

 26 PH                                  DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =      .03

 13 LS            SCS LOSS RATE
                        STRTL         .28  INITIAL ABSTRACTION
                       CRVNBR       87.89  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

 14 UD            SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .10  LAG
```

```
                                                  ***

                                                UNIT HYDROGRAPH
                                           8 END-OF-PERIOD ORDINATES
              61.       91.       40.       15.        6.        2.        1.        0.

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

 27 KP        PLAN  5 FOR STATION       E3
                              RUNOFF COMPUTATION 100-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

 12 BA          SUBBASIN CHARACTERISTICS
                      TAREA          .03  SUBBASIN AREA

                PRECIPITATION DATA

 29 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                                STORM AREA -      .03

 13 LS          SCS LOSS RATE
                      STRTL          .28  INITIAL ABSTRACTION
                     CRVNBR        87.89  CURVE NUMBER
                      RTIMP          .00  PERCENT IMPERVIOUS AREA

 14 UD          SCS DIMENSIONLESS UNITGRAPH
                       TLAG          .10  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                           8 END-OF-PERIOD ORDINATES
              61.       91.       40.       15.        6.        2.        1.        0.

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

            **************
            *            *
 30 KK      *     CHANN  *
            *            *
            **************

 31 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           3  PRINT CONTROL
                      IPLOT           0  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE
                      IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                       IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                      ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                      ISAV2         289  LAST ORDINATE PUNCHED OR SAVED
                     TIMINT        .083  TIME INTERVAL IN HOURS

              HYDROGRAPH ROUTING DATA

 32 RD            MUSKINGUM-CUNGE CHANNEL ROUTING
                            L       1630.  CHANNEL LENGTH
                            S       .0050  SLOPE
                            N        .035  CHANNEL ROUGHNESS COEFFICIENT
                           CA         .00  CONTRIBUTING AREA
                        SHAPE        TRAP  CHANNEL SHAPE
                           WD       12.00  BOTTOM WIDTH OR DIAMETER
                            Z         .30  SIDE SLOPE

                                                  ***
                                  COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                        COMPUTATION TIME STEP
          ELEMENT     ALPHA        M          DT         DX        PEAK     TIME TO      VOLUME     MAXIMUM
                                                                              PEAK                    CELERITY
                                                  (MIN)      (FT)      (CFS)     (MIN)       (IN)      (FPS)
```

```
                    MAIN        .71      1.52       5.00    543.33     46.02    725.00      3.40      3.51

                                          INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .71      1.52       5.00               46.02    725.00      3.40

CONTINUITY SUMMARY (AC-FT) - INFLOW= .5102E+01 EXCESS= .0000E+00 OUTFLOW= .5080E+01 BASIN STORAGE= .3816E-01 PERCENT ERROR=   -.3


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

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 1, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)        (HR)
                          (CFS)
+      46.      12.08                  8.          3.          3.          3.
                        (INCHES)     2.708       3.400       3.400       3.400
                         (AC-FT)       4.          5.          5.          5.

                        CUMULATIVE AREA =      .03 SQ MI


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

                PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                     COMPUTATION TIME STEP
                    ELEMENT    ALPHA        M          DT         DX        PEAK    TIME TO      VOLUME    MAXIMUM
                                                                                      PEAK                  CELERITY
                                                     (MIN)       (FT)      (CFS)    (MIN)       (IN)      (FPS)

                    MAIN        .71      1.52       5.00     815.00     70.52    725.00      6.33      4.09

                                          INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .71      1.52       5.00               70.52    725.00      6.33

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9485E+01 EXCESS= .0000E+00 OUTFLOW= .9456E+01 BASIN STORAGE= .5866E-01 PERCENT ERROR=   -.3


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

                        HYDROGRAPH AT STATION    CHANN
                          FOR PLAN 2, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)        (HR)
                          (CFS)
+      71.      12.08                 15.          5.          5.          5.
                        (INCHES)     4.845       6.329       6.329       6.329
                         (AC-FT)       7.          9.          9.          9.

                        CUMULATIVE AREA =      .03 SQ MI


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

                PLAN  3 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                     COMPUTATION TIME STEP
                    ELEMENT    ALPHA        M          DT         DX        PEAK    TIME TO      VOLUME    MAXIMUM
                                                                                      PEAK                  CELERITY
                                                     (MIN)       (FT)      (CFS)    (MIN)       (IN)      (FPS)

                    MAIN        .71      1.52       5.00     815.00     78.15    725.00      7.69      4.20
```

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.71	1.52	5.00	78.15	725.00	7.69

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1153E+02 EXCESS= .0000E+00 OUTFLOW= .1149E+02 BASIN STORAGE= .6846E-01 PERCENT ERROR= -.3

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

HYDROGRAPH AT STATION CHANN
FOR PLAN 3, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
+	(CFS)	(HR)	(CFS)				
+	78.	12.08		18.	6.	6.	6.
			(INCHES)	5.936	7.693	7.693	7.693
			(AC-FT)	9.	11.	11.	11.

CUMULATIVE AREA = .03 SQ MI

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

PLAN 4 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1
COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	.71	1.52	5.00	815.00	87.51	725.00	8.97	4.38

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.71	1.52	5.00	87.51	725.00	8.97

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1344E+02 EXCESS= .0000E+00 OUTFLOW= .1340E+02 BASIN STORAGE= .7762E-01 PERCENT ERROR= -.3

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

HYDROGRAPH AT STATION CHANN
FOR PLAN 4, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
+	(CFS)	(HR)	(CFS)				
+	88.	12.08		21.	7.	7.	7.
			(INCHES)	6.944	8.965	8.965	8.965
			(AC-FT)	10.	13.	13.	13.

CUMULATIVE AREA = .03 SQ MI

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

PLAN 5 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1
COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	.71	1.52	5.00	815.00	98.97	725.00	10.05	4.56

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

```
                    MAIN        .71       1.52       5.00                98.97    725.00     10.05

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1506E+02 EXCESS= .0000E+00 OUTFLOW= .1502E+02 BASIN STORAGE= .7730E-01 PERCENT ERROR=    -.2


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

                      HYDROGRAPH AT STATION    CHANN
                        FOR PLAN 5, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                     6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                          (CFS)
+      99.     12.08                 23.          8.          8.          8.
                        (INCHES)    7.576      10.050      10.050      10.050
                         (AC-FT)     11.         15.         15.         15.

                       CUMULATIVE AREA =     .03 SQ MI


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


            **************
            *            *
  33 KK     *        E4  *
            *            *
            **************


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

  34 KP          PLAN  1 FOR STATION       E4
                                RUNOFF COMPUTATION 2-YRS STORM IN BASIN

                 SUBBASIN RUNOFF DATA

  35 BA            SUBBASIN CHARACTERISTICS
                        TAREA          .02  SUBBASIN AREA

                   PRECIPITATION DATA

  40 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                 ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                 5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                   .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                                STORM AREA =     .02

  36 LS            SCS LOSS RATE
                        STRTL          .53  INITIAL ABSTRACTION
                       CRVNBR        79.00  CURVE NUMBER
                        RTIMP          .00  PERCENT IMPERVIOUS AREA

  37 UD            SCS DIMENSIONLESS UNITGRAPH
                         TLAG          .11  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            9 END-OF-PERIOD ORDINATES
                 43.       76.       39.       16.        7.        3.        1.        0.        0.


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

  41 KP          PLAN  2 FOR STATION       E4
                                RUNOFF COMPUTATION 10-YRS STORM IN BASIN

                 SUBBASIN RUNOFF DATA

  35 BA            SUBBASIN CHARACTERISTICS
                        TAREA          .02  SUBBASIN AREA

                   PRECIPITATION DATA
```

```
43 PH                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =     .02

36 LS             SCS LOSS RATE
                        STRTL         .53  INITIAL ABSTRACTION
                       CRVNBR       79.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

37 UD             SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            9 END-OF-PERIOD ORDINATES
                 43.       76.       39.       16.        7.        3.        1.        0.        0.

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

44 KP             PLAN  3 FOR STATION       E4
                                     RUNOFF COMPUTATION 25-YRS STORM IN BASIN

                  SUBBASIN RUNOFF DATA

35 BA               SUBBASIN CHARACTERISTICS
                          TAREA         .02  SUBBASIN AREA

                    PRECIPITATION DATA

46 PH                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                                STORM AREA =     .02

36 LS               SCS LOSS RATE
                        STRTL         .53  INITIAL ABSTRACTION
                       CRVNBR       79.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

37 UD               SCS DIMENSIONLESS UNITGRAPH
                         TLAG         .11  LAG

                                                  ***

                                                UNIT HYDROGRAPH
                                            9 END-OF-PERIOD ORDINATES
                 43.       76.       39.       16.        7.        3.        1.        0.        0.

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

47 KP             PLAN  4 FOR STATION       E4
                                     RUNOFF COMPUTATION 50-YRS STORM IN BASIN

                  SUBBASIN RUNOFF DATA

35 BA               SUBBASIN CHARACTERISTICS
                          TAREA         .02  SUBBASIN AREA

                    PRECIPITATION DATA

49 PH                                   DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                  ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
                  5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                    .34     .97    4.00    5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                                STORM AREA =     .02

36 LS               SCS LOSS RATE
                        STRTL         .53  INITIAL ABSTRACTION
                       CRVNBR       79.00  CURVE NUMBER
                        RTIMP         .00  PERCENT IMPERVIOUS AREA

37 UD               SCS DIMENSIONLESS UNITGRAPH
```

```
                    TLAG          .11  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
            43.       76.       39.       16.        7.        3.        1.        0.        0.

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

 50 KP      PLAN  5 FOR STATION       E4
                            RUNOFF COMPUTATION 100-YRS STORM IN BASIN

            SUBBASIN RUNOFF DATA

 35 BA        SUBBASIN CHARACTERISTICS
                  TAREA          .02  SUBBASIN AREA

              PRECIPITATION DATA

 52 PH                                DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
              ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
              5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                .39    1.10    4.50    5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                          STORM AREA =      .02

 36 LS        SCS LOSS RATE
                  STRTL          .53  INITIAL ABSTRACTION
                 CRVNBR        79.00  CURVE NUMBER
                  RTIMP          .00  PERCENT IMPERVIOUS AREA

 37 UD        SCS DIMENSIONLESS UNITGRAPH
                  TLAG          .11  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
            43.       76.       39.       16.        7.        3.        1.        0.        0.

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

            **************
            *            *
 53 KK      *     CHANN  *
            *            *
            **************

 54 KO        OUTPUT CONTROL VARIABLES
                  IPRNT           3  PRINT CONTROL
                  IPLOT           0  PLOT CONTROL
                  QSCAL          0.  HYDROGRAPH PLOT SCALE
                  IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                   IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                  ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                  ISAV2         289  LAST ORDINATE PUNCHED OR SAVED
                 TIMINT        .083  TIME INTERVAL IN HOURS

            HYDROGRAPH ROUTING DATA

 55 RD        MUSKINGUM-CUNGE CHANNEL ROUTING
                      L       2021.  CHANNEL LENGTH
                      S       .0050  SLOPE
                      N        .035  CHANNEL ROUGHNESS COEFFICIENT
                     CA         .00  CONTRIBUTING AREA
                  SHAPE        TRAP  CHANNEL SHAPE
                     WD       12.00  BOTTOM WIDTH OR DIAMETER
                      Z         .30  SIDE SLOPE

                                                  ***
                                 COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                        COMPUTATION TIME STEP
          ELEMENT     ALPHA        M         DT        DX       PEAK    TIME TO     VOLUME    MAXIMUM
                                                                          PEAK                  CELERITY
                                             (MIN)      (FT)     (CFS)    (MIN)       (IN)      (FPS)
```

```
                    MAIN        .71      1.52       5.00    505.25     28.49    750.00      2.57      3.04

                                          INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                    MAIN        .71      1.52       5.00               28.49    750.00      2.57

CONTINUITY SUMMARY (AC-FT) - INFLOW= .3307E+01 EXCESS= .0000E+00 OUTFLOW= .3286E+01 BASIN STORAGE= .3998E-01 PERCENT ERROR=    -.6


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

                       HYDROGRAPH AT STATION    CHANN
                         FOR PLAN 1, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.00-HR
+   (CFS)        (HR)
                            (CFS)
+      28.       12.50                  6.          2.           2.           2.
                         (INCHES)    2.135       2.566        2.566        2.566
                          (AC-FT)       3.          3.           3.           3.

                       CUMULATIVE AREA =      .02 SQ MI


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

                PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                     COMPUTATION TIME STEP
                     ELEMENT    ALPHA        M          DT         DX        PEAK    TIME TO      VOLUME    MAXIMUM
                                                                                       PEAK                   CELERITY
                                                       (MIN)       (FT)      (CFS)    (MIN)       (IN)      (FPS)

                       MAIN        .71      1.52       5.00     673.67     50.35    725.00      5.28      3.63

                                          INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                       MAIN        .71      1.52       5.00               50.35    725.00      5.28

CONTINUITY SUMMARY (AC-FT) - INFLOW= .6801E+01 EXCESS= .0000E+00 OUTFLOW= .6767E+01 BASIN STORAGE= .6372E-01 PERCENT ERROR=    -.4


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

                       HYDROGRAPH AT STATION    CHANN
                         FOR PLAN 2, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.00-HR
+   (CFS)        (HR)
                            (CFS)
+      50.       12.08                 11.          3.           3.           3.
                         (INCHES)    4.172       5.284        5.284        5.284
                          (AC-FT)       5.          7.           7.           7.

                       CUMULATIVE AREA =      .02 SQ MI


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

                PLAN  3 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                                COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                     COMPUTATION TIME STEP
                     ELEMENT    ALPHA        M          DT         DX        PEAK    TIME TO      VOLUME    MAXIMUM
                                                                                       PEAK                   CELERITY
                                                       (MIN)       (FT)      (CFS)    (MIN)       (IN)      (FPS)

                       MAIN        .71      1.52       5.00     673.67     57.21    725.00      6.59      3.81
```

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.71	1.52	5.00	57.21	725.00	6.59

CONTINUITY SUMMARY (AC-FT) - INFLOW= .8478E+01 EXCESS= .0000E+00 OUTFLOW= .8436E+01 BASIN STORAGE= .7492E-01 PERCENT ERROR- -.4

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

HYDROGRAPH AT STATION CHANN
FOR PLAN 3, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
+ (CFS)	(HR)					
		(CFS)				
+ 57.	12.08		13.	4.	4.	4.
		(INCHES)	5.215	6.587	6.587	6.587
		(AC-FT)	7.	8.	8.	8.

CUMULATIVE AREA = .02 SQ MI

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

PLAN 4 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1
COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	.71	1.52	5.00	673.67	66.58	725.00	7.81	3.99

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

MAIN	.71	1.52	5.00	66.58	725.00	7.81

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1006E+02 EXCESS= .0000E+00 OUTFLOW= .1001E+02 BASIN STORAGE= .8537E-01 PERCENT ERROR= -.4

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

HYDROGRAPH AT STATION CHANN
FOR PLAN 4, RATIO = 1.00

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
+ (CFS)	(HR)					
		(CFS)				
+ 67.	12.08		16.	5.	5.	5.
		(INCHES)	6.189	7.813	7.813	7.813
		(AC-FT)	8.	10.	10.	10.

CUMULATIVE AREA = .02 SQ MI

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

PLAN 5 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1
COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	.71	1.52	5.00	673.67	76.83	725.00	8.87	4.19

INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

```
                    MAIN        .71      1.52       5.00                76.83    725.00      8.87

CONTINUITY SUMMARY (AC-FT) - INFLOW= .1141E+02 EXCESS= .0000E+00 OUTFLOW= .1136E+02 BASIN STORAGE= .8529E-01 PE.

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

                      HYDROGRAPH AT STATION    CHANN
                        FOR PLAN 5, RATIO = 1.00

  PEAK FLOW      TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      24.00-HR
+   (CFS)        (HR)
                                    (CFS)
+      77.       12.08                18.          6.           6.           6.
                                 (INCHES)      6.917        8.867        8.867        8.867
                                  (AC-FT)        9.          11.          11.          11.

                      CUMULATIVE AREA =      .02 SQ MI

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

          **************
          *            *
  56 KK   *     COMB1  *
          *            *
          **************

  57 HC          HYDROGRAPH COMBINATION
                      ICOMP           2  NUMBER OF HYDROGRAPHS TO COMBINE
                                                                  ***

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

          **************
          *            *
  58 KK   *        E2  *
          *            *
          **************

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

  59 KP        PLAN  1 FOR STATION       E2
                              RUNOFF COMPUTATION 2-YRS STORM IN BASIN

            SUBBASIN RUNOFF DATA

60 BA          SUBBASIN CHARACTERISTICS
                    TAREA          .01  SUBBASIN AREA

               PRECIPITATION DATA

65 PH                              DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
               ..... HYDRO-35 .....   ............... TP-40 ...............   ........... TP-49 ...........
               5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                 .18     .50    2.40    2.55    2.75    3.30    4.10    4.75     .00     .00     .00     .00

                                          STORM AREA =      .01

61 LS          SCS LOSS RATE
                    STRTL          .28  INITIAL ABSTRACTION
                   CRVNBR        87.82  CURVE NUMBER
                    RTIMP          .00  PERCENT IMPERVIOUS AREA

62 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG          .10  LAG

                                                  ***
```

```
                                                    UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
              20.       29.       13.       5.        2.        1.        0.        0.

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

  66 KP       PLAN  2 FOR STATION       E2
                                RUNOFF COMPUTATION 10-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

  60 BA         SUBBASIN CHARACTERISTICS
                      TAREA         .01  SUBBASIN AREA

                PRECIPITATION DATA

  68 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .27     .75    3.35    3.95    4.40    5.40    6.60    7.80     .00     .00     .00     .00

                                                STORM AREA =      .01

  61 LS         SCS LOSS RATE
                      STRTL         .28  INITIAL ABSTRACTION
                     CRVNBR       87.82  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  62 UD         SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                    ***

                                                    UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
              20.       29.       13.       5.        2.        1.        0.        0.

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

  69 KP       PLAN  3 FOR STATION       E2
                                RUNOFF COMPUTATION 25-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

  60 BA         SUBBASIN CHARACTERISTICS
                      TAREA         .01  SUBBASIN AREA

                PRECIPITATION DATA

  71 PH                                 DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
                ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
                5-MIN  15-MIN  60-MIN    2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
                  .32     .90    3.62    4.65    5.25    6.50    7.70    9.20     .00     .00     .00     .00

                                                STORM AREA =      .01

  61 LS         SCS LOSS RATE
                      STRTL         .28  INITIAL ABSTRACTION
                     CRVNBR       87.82  CURVE NUMBER
                      RTIMP         .00  PERCENT IMPERVIOUS AREA

  62 UD         SCS DIMENSIONLESS UNITGRAPH
                       TLAG         .10  LAG

                                                    ***

                                                    UNIT HYDROGRAPH
                                                 8 END-OF-PERIOD ORDINATES
              20.       29.       13.       5.        2.        1.        0.        0.

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

  72 KP       PLAN  4 FOR STATION       E2
                                RUNOFF COMPUTATION 50-YRS STORM IN BASIN

              SUBBASIN RUNOFF DATA

  60 BA         SUBBASIN CHARACTERISTICS
```

```
          TAREA          .01  SUBBASIN AREA

      PRECIPITATION DATA

74 PH                             DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
      ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
      5-MIN  15-MIN  60-MIN     2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
        .34     .97    4.00     5.30    5.90    7.50    8.70   10.50     .00     .00     .00     .00

                                         STORM AREA =        .01

61 LS        SCS LOSS RATE
               STRTL          .28  INITIAL ABSTRACTION
              CRVNBR        87.82  CURVE NUMBER
               RTIMP          .00  PERCENT IMPERVIOUS AREA

62 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG          .10  LAG

                                                       ***

                                                 UNIT HYDROGRAPH
                                              8 END-OF-PERIOD ORDINATES
          20.        29.        13.         5.         2.         1.         0.         0.

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

75 KP       PLAN  5 FOR STATION         E2
                            RUNOFF COMPUTATION 100-YRS STORM IN BASIN

            SUBBASIN RUNOFF DATA

60 BA        SUBBASIN CHARACTERISTICS
               TAREA          .01  SUBBASIN AREA

             PRECIPITATION DATA

77 PH                             DEPTHS FOR   0-PERCENT HYPOTHETICAL STORM
      ..... HYDRO-35 ......   ............... TP-40 ...............   ........... TP-49 ...........
      5-MIN  15-MIN  60-MIN     2-HR    3-HR    6-HR   12-HR   24-HR   2-DAY   4-DAY   7-DAY  10-DAY
        .39    1.10    4.50     5.65    6.80    8.00    9.80   11.60     .00     .00     .00     .00

                                         STORM AREA =        .01

61 LS        SCS LOSS RATE
               STRTL          .28  INITIAL ABSTRACTION
              CRVNBR        87.82  CURVE NUMBER
               RTIMP          .00  PERCENT IMPERVIOUS AREA

62 UD        SCS DIMENSIONLESS UNITGRAPH
                TLAG          .10  LAG

                                                       ***

                                                 UNIT HYDROGRAPH
                                              8 END-OF-PERIOD ORDINATES
          20.        29.        13.         5.         2.         1.         0.         0.

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

          **************
          *            *
78 KK     *    COMB2   *
          *            *
          **************

79 HC        HYDROGRAPH COMBINATION
               ICOMP            2  NUMBER OF HYDROGRAPHS TO COMBINE

                                                       ***

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

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          *             *
80 KK     *     CHANN   *
          *             *
          **************

81 KO          OUTPUT CONTROL VARIABLES
                     IPRNT           3  PRINT CONTROL
                     IPLOT           0  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
                     IPNCH           0  PUNCH COMPUTED HYDROGRAPH
                      IOUT          21  SAVE HYDROGRAPH ON THIS UNIT
                     ISAV1           1  FIRST ORDINATE PUNCHED OR SAVED
                     ISAV2         289  LAST ORDINATE PUNCHED OR SAVED
                    TIMINT        .083  TIME INTERVAL IN HOURS


            HYDROGRAPH ROUTING DATA

82 RD          MUSKINGUM-CUNGE CHANNEL ROUTING
                         L        593.  CHANNEL LENGTH
                         S       .0060  SLOPE
                         N        .013  CHANNEL ROUGHNESS COEFFICIENT
                        CA         .00  CONTRIBUTING AREA
                     SHAPE        TRAP  CHANNEL SHAPE
                        WD       12.00  BOTTOM WIDTH OR DIAMETER
                         Z        2.00  SIDE SLOPE

                                                  ***
                          COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                COMPUTATION TIME STEP
                ELEMENT    ALPHA       M        DT        DX      PEAK    TIME TO      VOLUME    MAXIMUM
                                                                          PEAK                   CELERITY
                                                (MIN)      (FT)    (CFS)    (MIN)       (IN)      (FPS)

                  MAIN      2.23      1.46      1.21    296.50    82.64   726.41       3.07      8.16

                                  INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                  MAIN      2.23      1.46      5.00              80.67   725.00       3.07

CONTINUITY SUMMARY (AC-FT) - INFLOW= .9997E+01 EXCESS= .0000E+00 OUTFLOW= .9991E+01 BASIN STORAGE= .1061E-01 PERCENT ERROR=     .0


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

                     HYDROGRAPH AT STATION    CHANN
                       FOR PLAN 1, RATIO = 1.00

  PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                      6-HR       24-HR       72-HR     24.00-HR
+   (CFS)       (HR)
                              (CFS)
+     81.      12.08                 16.         5.          5.          5.
                          (INCHES)     2.477      3.073       3.073       3.073
                           (AC-FT)       8.        10.         10.         10.

                          CUMULATIVE AREA =      .06 SQ MI


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

            PLAN  2 INPUT DATA FOR STATION    CHANN ARE SAME AS FOR PLAN  1
                          COMPUTED MUSKINGUM-CUNGE PARAMETERS
                                COMPUTATION TIME STEP
                ELEMENT    ALPHA       M        DT        DX      PEAK    TIME TO      VOLUME    MAXIMUM
                                                                          PEAK                   CELERITY
                                                (MIN)      (FT)    (CFS)    (MIN)       (IN)      (FPS)

                  MAIN      2.23      1.46      1.03    296.50   139.20   725.49       5.92      9.63

                                  INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL

                  MAIN      2.23      1.46      5.00             138.39   725.00       5.92
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CONTINUITY SUMMARY (AC-FT) - INFLOW= .1926E+02 EXCESS= .0000E+00 OUTFLOW= .1925E+02 BASIN STORAGE= .1680E-01 PERCENT ERROR= .0

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

HYDROGRAPH AT STATION CHANN
FOR PLAN 2, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
+	(CFS)	(HR)					
			(CFS)				
+	138.	12.08		30.	10.	10.	10.
			(INCHES)	4.574	5.918	5.918	5.918
			(AC-FT)	15.	19.	19.	19.

CUMULATIVE AREA = .06 SQ MI

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

PLAN 3 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1
COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	2.23	1.46	.99	296.50	157.36	726.34	7.26	10.00
INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL								
MAIN	2.23	1.46	5.00		155.77	725.00	7.26	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2362E+02 EXCESS= .0000E+00 OUTFLOW= .2361E+02 BASIN STORAGE= .1978E-01 PERCENT ERROR= .0

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

HYDROGRAPH AT STATION CHANN
FOR PLAN 3, RATIO = 1.00

	PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
+	(CFS)	(HR)					
			(CFS)				
+	156.	12.08		37.	12.	12.	12.
			(INCHES)	5.644	7.258	7.258	7.258
			(AC-FT)	18.	24.	24.	24.

CUMULATIVE AREA = .06 SQ MI

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

PLAN 4 INPUT DATA FOR STATION CHANN ARE SAME AS FOR PLAN 1
COMPUTED MUSKINGUM-CUNGE PARAMETERS
COMPUTATION TIME STEP

ELEMENT	ALPHA	M	DT (MIN)	DX (FT)	PEAK (CFS)	TIME TO PEAK (MIN)	VOLUME (IN)	MAXIMUM CELERITY (FPS)
MAIN	2.23	1.46	.95	296.50	178.62	725.85	8.51	10.40
INTERPOLATED TO SPECIFIED COMPUTATION INTERVAL								
MAIN	2.23	1.46	5.00		177.34	725.00	8.51	

CONTINUITY SUMMARY (AC-FT) - INFLOW= .2770E+02 EXCESS= .0000E+00 OUTFLOW= .2769E+02 BASIN STORAGE= .2258E-01 PERCENT ERROR= .0