THE RANCH PLAN PLANNED COMMUNITY

PLANNING AREAS 3 AND 4 RUNOFF MANAGEMENT PLAN

Michael Baker INTERNATIONAL

TECHNICAL APPENDIX C.2

Existing Rational Method Expected Value (2-, 5-, 10-, 25-, 50- and 100-year)

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******************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
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                          Analysis prepared by:




 ************************ DESCRIPTION OF STUDY *************************
* GOBERNADORA WATERSHED STUDY - RATIONAL METHOD                        *
* LOCAL WATERSHED S33 - FREE DRAINING - EXISITING CONDITION            *
* 2-YR EV JULY 2017 JMITAL                                             *
 ***********************************************************************

  FILE NAME: RE02EV33.DAT
  TIME/DATE OF STUDY: 14:36 07/26/2017
==============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =    2.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  36.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS = 14
   1)    5.00;  1.600
   2)   10.00;  1.060
   3)   15.00;  0.840
   4)   20.00;  0.720
   5)   25.00;  0.630
   6)   30.00;  0.560
   7)   40.00;  0.480
   8)   50.00;  0.420
   9)   60.00;  0.366
  10)   90.00;  0.300
  11)  120.00;  0.246
  12)  180.00;  0.190
  13)  360.00;  0.136
  14) 1200.00;  0.080
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
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    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: s31x02.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      170.71   51.55  0.60( 0.49) 0.81    2408.1   13100.00
      2      195.96   91.33  0.60( 0.48) 0.81    3776.6   13000.00
      3      193.82   94.72  0.60( 0.48) 0.81    3796.8   13010.00
    TOTAL AREA(ACRES) =     3796.8

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: s32x02.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       71.12   53.02  0.60( 0.49) 0.82    1091.1   13200.00
      2       65.38   59.51  0.60( 0.50) 0.83    1127.6   13210.00
    TOTAL AREA(ACRES) =     1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 14.0
------------------------------------------------------------------------------
  >>>>>MEMORY BANK #  2 COPIED ONTO MAIN-STREAM MEMORY<<<<<
==============================================================================

  MAIN-STREAM MEMORY DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       71.12   53.02  0.60( 0.49) 0.82    1091.1   13200.00
      2       65.38   59.51  0.60( 0.50) 0.83    1127.6   13210.00
    TOTAL AREA(ACRES) =      1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE =  11
------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       71.12   53.02    0.404  0.60( 0.49) 0.82    1091.1   13200.00
      2       65.38   59.51    0.369  0.60( 0.50) 0.83    1127.6   13210.00
  LONGEST FLOWPATH FROM NODE  13200.00 TO NODE  13222.00 =   16821.05 FEET.
```

```
 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       170.71   51.55     0.412  0.60( 0.49) 0.81     2408.1   13100.00
     2       195.96   91.33     0.298  0.60( 0.48) 0.81     3776.6   13000.00
     3       193.82   94.72     0.292  0.60( 0.48) 0.81     3796.8   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       241.22   51.55     0.412  0.60( 0.49) 0.81     3468.9   13100.00
     2       242.76   53.02     0.404  0.60( 0.49) 0.81     3549.8   13200.00
     3       241.14   59.51     0.369  0.60( 0.49) 0.81     3809.7   13210.00
     4       248.74   91.33     0.298  0.60( 0.49) 0.81     4904.2   13000.00
     5       245.52   94.72     0.292  0.60( 0.49) 0.81     4924.4   13010.00
   TOTAL AREA(ACRES) =      4924.4

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      248.74  Tc(MIN.) =   91.327
 EFFECTIVE AREA(ACRES) =   4904.24  AREA-AVERAGED Fm(INCH/HR) =  0.49
 AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.81
 TOTAL AREA(ACRES) =     4924.4
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13222.00 TO NODE  13223.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    427.51  DOWNSTREAM(FEET) =    416.40
 CHANNEL LENGTH THRU SUBAREA(FEET) =   864.00   CHANNEL SLOPE =  0.0129
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 CHANNEL FLOW THRU SUBAREA(CFS) =     248.74
 FLOW VELOCITY(FEET/SEC.) =   6.12   FLOW DEPTH(FEET) =   3.68
 TRAVEL TIME(MIN.) =   2.35   Tc(MIN.) =   93.68
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610301T.DNA
 MEMORY BANK #  1 DEFINED AS FOLLOWS:
  STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)  (MIN.)  (INCH/HR)           (ACRES)     NODE
     1        6.90   14.50  0.60( 0.60) 1.00       29.3   30100.00
     2        4.63   17.79  0.60( 0.60) 1.00       29.7   30110.00
   TOTAL AREA(ACRES) =       29.7
```



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****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       241.22   53.92     0.399  0.60( 0.49) 0.81     3468.9   13100.00
     2       242.76   55.39     0.391  0.60( 0.49) 0.81     3549.8   13200.00
     3       241.14   61.89     0.362  0.60( 0.49) 0.81     3809.7   13210.00
     4       248.74   93.68     0.293  0.60( 0.49) 0.81     4904.2   13000.00
     5       245.52   97.08     0.287  0.60( 0.49) 0.81     4924.4   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1         6.90   14.50     0.862  0.60( 0.60) 1.00       29.3   30100.00
     2         4.63   17.79     0.773  0.60( 0.60) 1.00       29.7   30110.00
 LONGEST FLOWPATH FROM NODE  30110.00 TO NODE  13223.00 =    2058.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       248.12   14.50     0.862  0.60( 0.49) 0.82      962.1   30100.00
     2       245.85   17.79     0.773  0.60( 0.49) 0.82     1173.9   30110.00
     3       241.22   53.92     0.399  0.60( 0.49) 0.82     3498.6   13100.00
     4       242.76   55.39     0.391  0.60( 0.49) 0.82     3579.4   13200.00
     5       241.14   61.89     0.362  0.60( 0.49) 0.82     3839.4   13210.00
     6       248.74   93.68     0.293  0.60( 0.49) 0.81     4933.9   13000.00
     7       245.52   97.08     0.287  0.60( 0.49) 0.81     4954.1   13010.00
   TOTAL AREA(ACRES) =      4954.1

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      248.74  Tc(MIN.) =   93.682
 EFFECTIVE AREA(ACRES) =   4933.91  AREA-AVERAGED Fm(INCH/HR) =  0.49
 AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.82
 TOTAL AREA(ACRES) =     4954.1
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13224.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    416.40  DOWNSTREAM(FEET) =    410.60
 CHANNEL LENGTH THRU SUBAREA(FEET) =   408.51   CHANNEL SLOPE =  0.0142
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 CHANNEL FLOW THRU SUBAREA(CFS) =     248.74
 FLOW VELOCITY(FEET/SEC.) =   6.35   FLOW DEPTH(FEET) =   3.61
 TRAVEL TIME(MIN.) =   1.07   Tc(MIN.) =   94.75
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.
```

```
 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       289.75   15.57    0.826  0.60( 0.49) 0.82     962.1   30100.00
     2       270.78   18.86    0.747  0.60( 0.49) 0.82    1173.9   30110.00
     3       241.22   55.00    0.393  0.60( 0.49) 0.82    3498.6   13100.00
     4       242.76   56.47    0.385  0.60( 0.49) 0.82    3579.4   13200.00
     5       241.14   62.97    0.359  0.60( 0.49) 0.82    3839.4   13210.00
     6       248.74   94.75    0.291  0.60( 0.49) 0.81    4933.9   13000.00
     7       245.52   98.16    0.285  0.60( 0.49) 0.81    4954.1   13010.00
 NEW PEAK FLOW DATA ARE:
 PEAK FLOW RATE(CFS) =     289.75  Tc(MIN.) =   15.57
 AREA-AVERAGED Fm(INCH/HR) =  0.49  AREA-AVERAGED Fp(INCH/HR) =  0.60
 AREA-AVERAGED Ap =  0.82  EFFECTIVE AREA(ACRES) =     962.13

****************************************************************************
 FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610302T.DNA
 MEMORY BANK #  1 DEFINED AS FOLLOWS:
  STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)  (MIN.)   (INCH/HR)           (ACRES)     NODE
     1         4.04   11.89  0.60( 0.60) 1.00       11.9   30210.00
     2         3.89   12.30  0.60( 0.60) 1.00       12.0   30200.00
   TOTAL AREA(ACRES) =       12.0

****************************************************************************
 FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       289.75   15.57    0.826  0.60( 0.49) 0.82     962.1   30100.00
     2       270.78   18.86    0.747  0.60( 0.49) 0.82    1173.9   30110.00
     3       241.22   55.00    0.393  0.60( 0.49) 0.82    3498.6   13100.00
     4       242.76   56.47    0.385  0.60( 0.49) 0.82    3579.4   13200.00
     5       241.14   62.97    0.359  0.60( 0.49) 0.82    3839.4   13210.00
     6       248.74   94.75    0.291  0.60( 0.49) 0.81    4933.9   13000.00
     7       245.52   98.16    0.285  0.60( 0.49) 0.81    4954.1   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1         4.04   11.89    0.977  0.60( 0.60) 1.00       11.9   30210.00
     2         3.89   12.30    0.959  0.60( 0.60) 1.00       12.0   30200.00
 LONGEST FLOWPATH FROM NODE  30200.00 TO NODE  13224.00 =    1209.00 FEET.
```



```
 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       293.79   11.89    0.977  0.60( 0.49) 0.82     746.5   30210.00
     2       293.64   12.30    0.959  0.60( 0.49) 0.82     771.9   30200.00
     3       292.20   15.57    0.826  0.60( 0.49) 0.82     974.2   30100.00
     4       272.37   18.86    0.747  0.60( 0.49) 0.82    1185.9   30110.00
     5       241.22   55.00    0.393  0.60( 0.49) 0.82    3510.6   13100.00
     6       242.76   56.47    0.385  0.60( 0.49) 0.82    3591.5   13200.00
     7       241.14   62.97    0.359  0.60( 0.49) 0.82    3851.4   13210.00
     8       248.74   94.75    0.291  0.60( 0.49) 0.81    4945.9   13000.00
     9       245.52   98.16    0.285  0.60( 0.49) 0.81    4966.1   13010.00
   TOTAL AREA(ACRES) =      4966.1

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      293.79  Tc(MIN.) =   11.891
 EFFECTIVE AREA(ACRES) =    746.50  AREA-AVERAGED Fm(INCH/HR) =  0.49
 AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.81
 TOTAL AREA(ACRES) =     4966.1
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13224.00 TO NODE  13301.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    410.60  DOWNSTREAM(FEET) =    382.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1260.70   CHANNEL SLOPE =  0.0227
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.860
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       61.66      0.60     0.998     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     301.05
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   7.93
 AVERAGE FLOW DEPTH(FEET) =   3.56   TRAVEL TIME(MIN.) =   2.65
 Tc(MIN.) =   14.54
 SUBAREA AREA(ACRES) =    61.66       SUBAREA RUNOFF(CFS) =   14.51
 EFFECTIVE AREA(ACRES) =    808.16     AREA-AVERAGED Fm(INCH/HR) =   0.50
 AREA-AVERAGED Fp(INCH/HR) =   0.60  AREA-AVERAGED Ap =   0.84
 TOTAL AREA(ACRES) =     5027.8         PEAK FLOW RATE(CFS) =     293.79
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  3.52   FLOW VELOCITY(FEET/SEC.) =   7.90
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       293.79   14.54    0.860  0.60( 0.50) 0.84     808.2   30210.00
     2       293.64   14.95    0.842  0.60( 0.50) 0.84     833.6   30200.00
```

```
      3      292.20   18.23    0.762  0.60( 0.50) 0.83    1035.8   30100.00
      4      272.37   21.57    0.692  0.60( 0.50) 0.83    1247.6   30110.00
      5      241.22   57.81    0.378  0.60( 0.49) 0.82    3572.3   13100.00
      6      242.76   59.27    0.370  0.60( 0.49) 0.82    3653.1   13200.00
      7      241.14   65.78    0.353  0.60( 0.49) 0.82    3913.1   13210.00
      8      248.74   97.54    0.286  0.60( 0.49) 0.82    5007.6   13000.00
      9      245.52  100.94    0.280  0.60( 0.49) 0.82    5027.8   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =     293.79  Tc(MIN.) =   14.54
  AREA-AVERAGED Fm(INCH/HR) =  0.50  AREA-AVERAGED Fp(INCH/HR) =  0.60
  AREA-AVERAGED Ap =  0.84  EFFECTIVE AREA(ACRES) =     808.16

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610303T.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)           (ACRES)    NODE
      1       12.47   31.31  0.60( 0.60) 1.00     166.2   30300.00
    TOTAL AREA(ACRES) =      166.2

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
      1      293.79   14.54    0.860  0.60( 0.50) 0.84     808.2   30210.00
      2      293.64   14.95    0.842  0.60( 0.50) 0.84     833.6   30200.00
      3      292.20   18.23    0.762  0.60( 0.50) 0.83    1035.8   30100.00
      4      272.37   21.57    0.692  0.60( 0.50) 0.83    1247.6   30110.00
      5      241.22   57.81    0.378  0.60( 0.49) 0.82    3572.3   13100.00
      6      242.76   59.27    0.370  0.60( 0.49) 0.82    3653.1   13200.00
      7      241.14   65.78    0.353  0.60( 0.49) 0.82    3913.1   13210.00
      8      248.74   97.54    0.286  0.60( 0.49) 0.82    5007.6   13000.00
      9      245.52  100.94    0.280  0.60( 0.49) 0.82    5027.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
      1       12.47   31.31    0.550  0.60( 0.60) 1.00     166.2   30300.00
  LONGEST FLOWPATH FROM NODE  30300.00 TO NODE  13301.00 =    6391.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
      1      302.85   14.54    0.860  0.60( 0.51) 0.85     885.4   30210.00
      2      302.76   14.95    0.842  0.60( 0.51) 0.85     913.0   30200.00
      3      302.27   18.23    0.762  0.60( 0.51) 0.85    1132.6   30100.00
      4      283.18   21.57    0.692  0.60( 0.51) 0.84    1362.1   30110.00
      5      276.47   31.31    0.550  0.60( 0.50) 0.84    2038.6   30300.00
```



```
      6      249.79   57.81    0.378  0.60( 0.50) 0.83    3738.5   13100.00
      7      251.16   59.27    0.370  0.60( 0.50) 0.83    3819.3   13200.00
      8      249.16   65.78    0.353  0.60( 0.50) 0.83    4079.3   13210.00
      9      255.24   97.54    0.286  0.60( 0.49) 0.82    5173.8   13000.00
     10      251.88  100.94    0.280  0.60( 0.49) 0.82    5194.0   13010.00
    TOTAL AREA(ACRES) =      5194.0

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      302.85  Tc(MIN.) =   14.542
  EFFECTIVE AREA(ACRES) =    885.37  AREA-AVERAGED Fm(INCH/HR) =  0.51
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.85
  TOTAL AREA(ACRES) =     5194.0
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    382.00  DOWNSTREAM(FEET) =    375.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1141.09   CHANNEL SLOPE =  0.0061
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.757
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -        9.42      0.60     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     303.52
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.87
  AVERAGE FLOW DEPTH(FEET) =   4.56   TRAVEL TIME(MIN.) =   3.91
  Tc(MIN.) =   18.45
  SUBAREA AREA(ACRES) =     9.42       SUBAREA RUNOFF(CFS) =    1.33
  EFFECTIVE AREA(ACRES) =    894.79     AREA-AVERAGED Fm(INCH/HR) =   0.51
  AREA-AVERAGED Fp(INCH/HR) =   0.60  AREA-AVERAGED Ap =   0.85
  TOTAL AREA(ACRES) =     5203.4          PEAK FLOW RATE(CFS) =     302.85
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  4.56   FLOW VELOCITY(FEET/SEC.) =   4.86
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
      1      302.85   18.45    0.757  0.60( 0.51) 0.85     894.8   30210.00
      2      302.76   18.86    0.747  0.60( 0.51) 0.85     922.4   30200.00
      3      302.27   22.14    0.682  0.60( 0.51) 0.85    1142.0   30100.00
      4      283.18   25.55    0.622  0.60( 0.51) 0.84    1371.5   30110.00
      5      276.47   35.31    0.517  0.60( 0.50) 0.84    2048.0   30300.00
      6      249.79   61.91    0.362  0.60( 0.50) 0.83    3747.9   13100.00
      7      251.16   63.36    0.359  0.60( 0.50) 0.83    3828.8   13200.00
      8      249.16   69.89    0.344  0.60( 0.50) 0.83    4088.7   13210.00
      9      255.24  101.62    0.279  0.60( 0.49) 0.82    5183.2   13000.00
     10      251.88  105.04    0.273  0.60( 0.49) 0.82    5203.4   13010.00
```

```
 NEW PEAK FLOW DATA ARE:
 PEAK FLOW RATE(CFS) =     302.85  Tc(MIN.) =   18.45
 AREA-AVERAGED Fm(INCH/HR) =  0.51  AREA-AVERAGED Fp(INCH/HR) =  0.60
 AREA-AVERAGED Ap =  0.85  EFFECTIVE AREA(ACRES) =     894.79

****************************************************************************
 FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610214T.DNA
 MEMORY BANK #  1 DEFINED AS FOLLOWS:
  STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
     1        5.48   40.25  0.60( 0.60) 1.00     227.7   21400.00
   TOTAL AREA(ACRES) =      227.7

****************************************************************************
 FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      302.85   18.45    0.757  0.60( 0.51) 0.85     894.8   30210.00
     2      302.76   18.86    0.747  0.60( 0.51) 0.85     922.4   30200.00
     3      302.27   22.14    0.682  0.60( 0.51) 0.85    1142.0   30100.00
     4      283.18   25.55    0.622  0.60( 0.51) 0.84    1371.5   30110.00
     5      276.47   35.31    0.517  0.60( 0.50) 0.84    2048.0   30300.00
     6      249.79   61.91    0.362  0.60( 0.50) 0.83    3747.9   13100.00
     7      251.16   63.36    0.359  0.60( 0.50) 0.83    3828.8   13200.00
     8      249.16   69.89    0.344  0.60( 0.50) 0.83    4088.7   13210.00
     9      255.24  101.62    0.279  0.60( 0.49) 0.82    5183.2   13000.00
    10      251.88  105.04    0.273  0.60( 0.49) 0.82    5203.4   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1        5.48   40.25    0.478  0.60( 0.60) 1.00     227.7   21400.00
 LONGEST FLOWPATH FROM NODE  21400.00 TO NODE  13302.00 =    6708.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      306.83   18.45    0.757  0.60( 0.52) 0.87     999.1   30210.00
     2      306.77   18.86    0.747  0.60( 0.52) 0.87    1029.0   30200.00
     3      306.57   22.14    0.682  0.60( 0.52) 0.86    1267.2   30100.00
     4      287.71   25.55    0.622  0.60( 0.52) 0.86    1516.0   30110.00
     5      281.67   35.31    0.517  0.60( 0.51) 0.86    2247.7   30300.00
```



```
     6      277.00   40.25    0.478  0.60( 0.51) 0.85    2591.1   21400.00
     7      253.93   61.91    0.362  0.60( 0.50) 0.84    3975.6   13100.00
     8      255.26   63.36    0.359  0.60( 0.50) 0.84    4056.4   13200.00
     9      253.10   69.89    0.344  0.60( 0.50) 0.84    4316.4   13210.00
    10      258.44  101.62    0.279  0.60( 0.50) 0.83    5410.9   13000.00
    11      255.00  105.04    0.273  0.60( 0.50) 0.83    5431.1   13010.00
  TOTAL AREA(ACRES) =      5431.1

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      306.83  Tc(MIN.) =   18.450
 EFFECTIVE AREA(ACRES) =    999.14  AREA-AVERAGED Fm(INCH/HR) =  0.52
 AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.87
 TOTAL AREA(ACRES) =     5431.1
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13302.00 TO NODE  13303.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    375.00  DOWNSTREAM(FEET) =    355.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  2193.96   CHANNEL SLOPE =  0.0091
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 CHANNEL FLOW THRU SUBAREA(CFS) =     306.83
 FLOW VELOCITY(FEET/SEC.) =   5.66   FLOW DEPTH(FEET) =   4.25
 TRAVEL TIME(MIN.) =   6.47   Tc(MIN.) =   24.92
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      306.83   24.92    0.632  0.60( 0.52) 0.87     999.1   30210.00
     2      306.77   25.33    0.625  0.60( 0.52) 0.87    1029.0   30200.00
     3      306.57   28.59    0.580  0.60( 0.52) 0.86    1267.2   30100.00
     4      287.71   32.11    0.543  0.60( 0.52) 0.86    1516.0   30110.00
     5      281.67   41.92    0.469  0.60( 0.51) 0.86    2247.7   30300.00
     6      277.00   46.88    0.439  0.60( 0.51) 0.85    2591.1   21400.00
     7      253.93   68.68    0.347  0.60( 0.50) 0.84    3975.6   13100.00
     8      255.26   70.12    0.344  0.60( 0.50) 0.84    4056.4   13200.00
     9      253.10   76.67    0.329  0.60( 0.50) 0.84    4316.4   13210.00
    10      258.44  108.36    0.267  0.60( 0.50) 0.83    5410.9   13000.00
    11      255.00  111.80    0.261  0.60( 0.50) 0.83    5431.1   13010.00
 NEW PEAK FLOW DATA ARE:
 PEAK FLOW RATE(CFS) =     306.83  Tc(MIN.) =   24.92
 AREA-AVERAGED Fm(INCH/HR) =  0.52  AREA-AVERAGED Fp(INCH/HR) =  0.60
 AREA-AVERAGED Ap =  0.87  EFFECTIVE AREA(ACRES) =     999.14

****************************************************************************
 FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE = 15.1
----------------------------------------------------------------------------
```

```
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
================================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610213T.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER     (CFS)  (MIN.)   (INCH/HR)          (ACRES)     NODE
      1       10.75   19.94  0.60( 0.60) 1.00       98.2   21300.00
    TOTAL AREA(ACRES) =       98.2

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
================================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)     NODE
      1      306.83   24.92    0.632  0.60( 0.52) 0.87     999.1   30210.00
      2      306.77   25.33    0.625  0.60( 0.52) 0.87    1029.0   30200.00
      3      306.57   28.59    0.580  0.60( 0.52) 0.86    1267.2   30100.00
      4      287.71   32.11    0.543  0.60( 0.52) 0.86    1516.0   30110.00
      5      281.67   41.92    0.469  0.60( 0.51) 0.86    2247.7   30300.00
      6      277.00   46.88    0.439  0.60( 0.51) 0.85    2591.1   21400.00
      7      253.93   68.68    0.347  0.60( 0.50) 0.84    3975.6   13100.00
      8      255.26   70.12    0.344  0.60( 0.50) 0.84    4056.4   13200.00
      9      253.10   76.67    0.329  0.60( 0.50) 0.84    4316.4   13210.00
     10      258.44  108.36    0.267  0.60( 0.50) 0.83    5410.9   13000.00
     11      255.00  111.80    0.261  0.60( 0.50) 0.83    5431.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)     NODE
      1       10.75   19.94    0.721  0.60( 0.60) 1.00       98.2   21300.00
  LONGEST FLOWPATH FROM NODE  21300.00 TO NODE  13303.00 =    2988.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)     NODE
      1      317.58   19.94    0.721  0.60( 0.53) 0.88     897.8   21300.00
      2      309.62   24.92    0.632  0.60( 0.53) 0.88    1097.4   30210.00
      3      309.03   25.33    0.625  0.60( 0.53) 0.88    1127.3   30200.00
      4      306.57   28.59    0.580  0.60( 0.52) 0.87    1365.5   30100.00
      5      287.71   32.11    0.543  0.60( 0.52) 0.87    1614.2   30110.00
      6      281.67   41.92    0.469  0.60( 0.52) 0.86    2346.0   30300.00
      7      277.00   46.88    0.439  0.60( 0.51) 0.86    2689.4   21400.00
      8      253.93   68.68    0.347  0.60( 0.50) 0.84    4073.8   13100.00
      9      255.26   70.12    0.344  0.60( 0.50) 0.84    4154.6   13200.00
     10      253.10   76.67    0.329  0.60( 0.50) 0.84    4414.6   13210.00
     11      258.44  108.36    0.267  0.60( 0.50) 0.83    5509.1   13000.00
     12      255.00  111.80    0.261  0.60( 0.50) 0.83    5529.3   13010.00
    TOTAL AREA(ACRES) =      5529.3

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      317.58  Tc(MIN.) =   19.938
  EFFECTIVE AREA(ACRES) =    897.75  AREA-AVERAGED Fm(INCH/HR) =  0.53
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.83
```



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  TOTAL AREA(ACRES) =     5529.3
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13304.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    355.00  DOWNSTREAM(FEET) =    350.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.40   CHANNEL SLOPE =  0.0054
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.662
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       13.84      0.60     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     317.97
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.70
  AVERAGE FLOW DEPTH(FEET) =   4.75   TRAVEL TIME(MIN.) =   3.28
  Tc(MIN.) =   23.22
  SUBAREA AREA(ACRES) =    13.84       SUBAREA RUNOFF(CFS) =    0.77
  EFFECTIVE AREA(ACRES) =    911.59     AREA-AVERAGED Fm(INCH/HR) =   0.53
  AREA-AVERAGED Fp(INCH/HR) =   0.60  AREA-AVERAGED Ap =   0.88
  TOTAL AREA(ACRES) =     5543.1          PEAK FLOW RATE(CFS) =     317.58
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  4.75   FLOW VELOCITY(FEET/SEC.) =   4.69
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)     NODE
      1      317.58   23.22    0.662  0.60( 0.53) 0.88     911.6   21300.00
      2      309.62   28.22    0.585  0.60( 0.53) 0.88    1111.2   30210.00
      3      309.03   28.64    0.579  0.60( 0.53) 0.88    1141.1   30200.00
      4      306.57   31.91    0.545  0.60( 0.52) 0.87    1379.3   30100.00
      5      287.71   35.47    0.516  0.60( 0.52) 0.87    1628.1   30110.00
      6      281.67   45.31    0.448  0.60( 0.52) 0.86    2359.8   30300.00
      7      277.00   50.28    0.418  0.60( 0.52) 0.86    2703.2   21400.00
      8      253.93   72.15    0.339  0.60( 0.51) 0.84    4087.6   13100.00
      9      255.26   73.59    0.336  0.60( 0.50) 0.84    4168.5   13200.00
     10      253.10   80.14    0.322  0.60( 0.50) 0.84    4428.4   13210.00
     11      258.44  111.83    0.261  0.60( 0.50) 0.83    5523.0   13000.00
     12      255.00  115.27    0.255  0.60( 0.50) 0.83    5543.1   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =     317.58  Tc(MIN.) =   23.22
  AREA-AVERAGED Fm(INCH/HR) =  0.53  AREA-AVERAGED Fp(INCH/HR) =  0.60
  AREA-AVERAGED Ap =  0.88  EFFECTIVE AREA(ACRES) =     911.59

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 3 <<<<<
```

```
================================================================================

********************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE = 15.1
--------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
================================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610304T.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       13.82   27.57  0.60( 0.60) 1.00     159.1   30410.00
      2        7.10   38.44  0.60( 0.60) 1.00     182.7   30400.00
    TOTAL AREA(ACRES) =      182.7

********************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  11
--------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
================================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
      1      317.58   23.22    0.662  0.60( 0.53) 0.88     911.6   21300.00
      2      309.62   28.22    0.585  0.60( 0.53) 0.88    1111.2   30210.00
      3      309.03   28.64    0.579  0.60( 0.53) 0.88    1141.1   30200.00
      4      306.57   31.91    0.545  0.60( 0.52) 0.87    1379.3   30100.00
      5      287.71   35.47    0.516  0.60( 0.52) 0.87    1628.1   30110.00
      6      281.67   45.31    0.448  0.60( 0.52) 0.86    2359.8   30300.00
      7      277.00   50.28    0.418  0.60( 0.52) 0.86    2703.2   21400.00
      8      253.93   72.15    0.339  0.60( 0.51) 0.84    4087.6   13100.00
      9      255.26   73.59    0.336  0.60( 0.50) 0.84    4168.5   13200.00
     10      253.10   80.14    0.322  0.60( 0.50) 0.84    4428.4   13210.00
     11      258.44  111.83    0.261  0.60( 0.50) 0.83    5523.0   13000.00
     12      255.00  115.27    0.255  0.60( 0.50) 0.83    5543.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
      1       13.82   27.57    0.594  0.60( 0.60) 1.00     159.1   30410.00
      2        7.10   38.44    0.492  0.60( 0.60) 1.00     182.7   30400.00
  LONGEST FLOWPATH FROM NODE  30400.00 TO NODE  13304.00 =    5899.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
      1      330.55   23.22    0.662  0.60( 0.54) 0.90    1045.6   21300.00
      2      324.49   27.57    0.594  0.60( 0.54) 0.90    1244.1   30410.00
      3      323.04   28.22    0.585  0.60( 0.54) 0.90    1271.7   30210.00
      4      322.19   28.64    0.579  0.60( 0.54) 0.89    1302.5   30200.00
      5      317.70   31.91    0.545  0.60( 0.53) 0.89    1547.8   30100.00
      6      296.64   35.47    0.516  0.60( 0.53) 0.88    1804.3   30110.00
      7      292.98   38.44    0.492  0.60( 0.53) 0.88    2031.9   30400.00
      8      288.12   45.31    0.448  0.60( 0.52) 0.87    2542.5   30300.00
      9      283.03   50.28    0.418  0.60( 0.52) 0.87    2885.9   21400.00
     10      258.82   72.15    0.339  0.60( 0.51) 0.85    4270.3   13100.00
```



```
     11      260.11   73.59    0.336  0.60( 0.51) 0.85    4351.2   13200.00
     12      257.74   80.14    0.322  0.60( 0.51) 0.85    4611.2   13210.00
     13      262.19  111.83    0.261  0.60( 0.50) 0.84    5705.7   13000.00
     14      258.67  115.27    0.255  0.60( 0.50) 0.84    5725.8   13010.00
   TOTAL AREA(ACRES) =      5725.8

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      330.55  Tc(MIN.) =   23.221
  EFFECTIVE AREA(ACRES) =   1045.60  AREA-AVERAGED Fm(INCH/HR) =  0.54
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.90
  TOTAL AREA(ACRES) =     5725.8
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13305.00 IS CODE =  51
--------------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    350.00  DOWNSTREAM(FEET) =    315.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2966.27   CHANNEL SLOPE =  0.0118
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.552
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
        LAND USE           GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       27.39      0.60     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  * RAINFALL INTENSITY IS LESS THAN AREA-AVERAGED Fp;
  * IMPERVIOUS AREA USED FOR RUNOFF ESTIMATES.
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     330.55
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.36
  AVERAGE FLOW DEPTH(FEET) =   4.16   TRAVEL TIME(MIN.) =   7.78
  Tc(MIN.) =   31.00
  SUBAREA AREA(ACRES) =    27.39       SUBAREA RUNOFF(CFS) =    0.00
  EFFECTIVE AREA(ACRES) =   1072.99     AREA-AVERAGED Fm(INCH/HR) =   0.54
  AREA-AVERAGED Fp(INCH/HR) =   0.60  AREA-AVERAGED Ap =   0.90
  * RAINFALL INTENSITY IS LESS THAN AREA-AVERAGED Fp;
  * IMPERVIOUS AREA USED FOR RUNOFF ESTIMATES.
  TOTAL AREA(ACRES) =     5753.2         PEAK FLOW RATE(CFS) =     330.55
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  4.16   FLOW VELOCITY(FEET/SEC.) =   6.36
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
      1      330.55   31.00    0.552  0.60( 0.54) 0.90    1073.0   21300.00
      2      324.49   35.39    0.517  0.60( 0.54) 0.90    1271.5   30410.00
      3      323.04   36.06    0.512  0.60( 0.54) 0.90    1299.1   30210.00
      4      322.19   36.47    0.508  0.60( 0.54) 0.90    1329.9   30200.00
      5      317.70   39.76    0.482  0.60( 0.53) 0.89    1575.2   30100.00
      6      296.64   43.47    0.459  0.60( 0.53) 0.88    1831.7   30110.00
      7      292.98   46.46    0.441  0.60( 0.53) 0.88    2059.3   30400.00
```

```
      8      288.12   53.36    0.402  0.60( 0.52) 0.87    2569.9   30300.00
      9      283.03   58.36    0.375  0.60( 0.52) 0.87    2913.3   21400.00
     10      258.82   80.43    0.321  0.60( 0.51) 0.85    4297.7   13100.00
     11      260.11   81.84    0.318  0.60( 0.51) 0.85    4378.6   13200.00
     12      257.74   88.43    0.303  0.60( 0.51) 0.85    4638.5   13210.00
     13      262.19  120.07    0.246  0.60( 0.50) 0.84    5733.1   13000.00
     14      258.67  123.54    0.243  0.60( 0.50) 0.84    5753.2   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =     330.55  Tc(MIN.) =   31.00
  AREA-AVERAGED Fm(INCH/HR) =  0.54  AREA-AVERAGED Fp(INCH/HR) =  0.60
  AREA-AVERAGED Ap =  0.90  EFFECTIVE AREA(ACRES) =    1072.99

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610305T.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       30.55   35.57  0.60( 0.60) 1.00     523.9   30520.00
      2       27.08   39.63  0.60( 0.60) 1.00     563.9   30540.00
      3       25.10   41.44  0.60( 0.60) 1.00     572.1   30510.00
      4       17.83   47.02  0.60( 0.60) 1.00     582.8   30500.00
    TOTAL AREA(ACRES) =      582.8

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      330.55   31.00    0.552  0.60( 0.54) 0.90    1073.0   21300.00
      2      324.49   35.39    0.517  0.60( 0.54) 0.90    1271.5   30410.00
      3      323.04   36.06    0.512  0.60( 0.54) 0.90    1299.1   30210.00
      4      322.19   36.47    0.508  0.60( 0.54) 0.90    1329.9   30200.00
      5      317.70   39.76    0.482  0.60( 0.53) 0.89    1575.2   30100.00
      6      296.64   43.47    0.459  0.60( 0.53) 0.88    1831.7   30110.00
      7      292.98   46.46    0.441  0.60( 0.53) 0.88    2059.3   30400.00
      8      288.12   53.36    0.402  0.60( 0.52) 0.87    2569.9   30300.00
      9      283.03   58.36    0.375  0.60( 0.52) 0.87    2913.3   21400.00
     10      258.82   80.43    0.321  0.60( 0.51) 0.85    4297.7   13100.00
     11      260.11   81.84    0.318  0.60( 0.51) 0.85    4378.6   13200.00
     12      257.74   88.43    0.303  0.60( 0.51) 0.85    4638.5   13210.00
     13      262.19  120.07    0.246  0.60( 0.50) 0.84    5733.1   13000.00
     14      258.67  123.54    0.243  0.60( 0.50) 0.84    5753.2   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.
```



```
  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       30.55   35.57    0.515  0.60( 0.60) 1.00     523.9   30520.00
      2       27.08   39.63    0.483  0.60( 0.60) 1.00     563.9   30540.00
      3       25.10   41.44    0.471  0.60( 0.60) 1.00     572.1   30510.00
      4       17.83   47.02    0.438  0.60( 0.60) 1.00     582.8   30500.00
  LONGEST FLOWPATH FROM NODE  30500.00 TO NODE  13305.00 =    9458.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      359.07   31.00    0.552  0.60( 0.56) 0.93    1529.6   21300.00
      2      354.97   35.39    0.517  0.60( 0.56) 0.93    1792.9   30410.00
      3      354.66   35.57    0.515  0.60( 0.56) 0.93    1802.6   30520.00
      4      353.17   36.06    0.512  0.60( 0.56) 0.93    1827.9   30210.00
      5      351.97   36.47    0.508  0.60( 0.56) 0.93    1862.7   30200.00
      6      344.96   39.63    0.483  0.60( 0.55) 0.92    2129.6   30540.00
      7      344.64   39.76    0.482  0.60( 0.55) 0.92    2139.7   30100.00
      8      333.31   41.44    0.471  0.60( 0.55) 0.92    2262.9   30510.00
      9      319.09   43.47    0.459  0.60( 0.55) 0.91    2407.7   30110.00
     10      311.54   46.46    0.441  0.60( 0.54) 0.91    2641.0   30400.00
     11      310.41   47.02    0.438  0.60( 0.54) 0.91    2683.8   30500.00
     12      304.49   53.36    0.402  0.60( 0.54) 0.90    3152.7   30300.00
     13      298.29   58.36    0.375  0.60( 0.53) 0.89    3496.1   21400.00
     14      271.89   80.43    0.321  0.60( 0.52) 0.87    4880.6   13100.00
     15      273.05   81.84    0.318  0.60( 0.52) 0.87    4961.4   13200.00
     16      270.09   88.43    0.303  0.60( 0.52) 0.86    5221.4   13210.00
     17      272.21  120.07    0.246  0.60( 0.51) 0.85    6315.9   13000.00
     18      268.55  123.54    0.243  0.60( 0.51) 0.85    6336.1   13010.00
    TOTAL AREA(ACRES) =      6336.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      359.07  Tc(MIN.) =   30.997
  EFFECTIVE AREA(ACRES) =   1529.63  AREA-AVERAGED Fm(INCH/HR) =  0.56
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.93
  TOTAL AREA(ACRES) =     6336.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.20 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    315.00  DOWNSTREAM(FEET) =    284.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1317.91   CHANNEL SLOPE =  0.0235
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  CHANNEL FLOW THRU SUBAREA(CFS) =     359.07
  FLOW VELOCITY(FEET/SEC.) =   8.40   FLOW DEPTH(FEET) =   3.77
  TRAVEL TIME(MIN.) =   2.61   Tc(MIN.) =   33.61
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      359.07   33.61    0.531  0.60( 0.56) 0.93    1529.6   21300.00
```

```
      2      354.97   38.01    0.496  0.60( 0.56) 0.93    1792.9   30410.00
      3      354.66   38.19    0.495  0.60( 0.56) 0.93    1802.6   30520.00
      4      353.17   38.68    0.491  0.60( 0.56) 0.93    1827.9   30210.00
      5      351.97   39.10    0.487  0.60( 0.56) 0.93    1862.7   30200.00
      6      344.96   42.28    0.466  0.60( 0.55) 0.92    2129.6   30540.00
      7      344.64   42.41    0.466  0.60( 0.55) 0.92    2139.7   30100.00
      8      333.31   44.10    0.455  0.60( 0.55) 0.92    2262.9   30510.00
      9      319.09   46.17    0.443  0.60( 0.55) 0.91    2407.7   30110.00
     10      311.54   49.17    0.425  0.60( 0.54) 0.91    2641.0   30400.00
     11      310.41   49.74    0.422  0.60( 0.54) 0.91    2683.8   30500.00
     12      304.49   56.08    0.387  0.60( 0.54) 0.90    3152.7   30300.00
     13      298.29   61.10    0.364  0.60( 0.53) 0.89    3496.1   21400.00
     14      271.89   83.24    0.315  0.60( 0.52) 0.87    4880.6   13100.00
     15      273.05   84.64    0.312  0.60( 0.52) 0.87    4961.4   13200.00
     16      270.09   91.24    0.298  0.60( 0.52) 0.86    5221.4   13210.00
     17      272.21  122.87    0.243  0.60( 0.51) 0.85    6315.9   13000.00
     18      268.55  126.35    0.240  0.60( 0.51) 0.85    6336.1   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =     359.07  Tc(MIN.) =   33.61
  AREA-AVERAGED Fm(INCH/HR) =  0.56  AREA-AVERAGED Fp(INCH/HR) =  0.60
  AREA-AVERAGED Ap =  0.93  EFFECTIVE AREA(ACRES) =    1529.63

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610306T.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1        1.89   25.32  0.60( 0.60) 1.00      40.4   30600.00
    TOTAL AREA(ACRES) =       40.4

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      359.07   33.61    0.531  0.60( 0.56) 0.93    1529.6   21300.00
      2      354.97   38.01    0.496  0.60( 0.56) 0.93    1792.9   30410.00
      3      354.66   38.19    0.495  0.60( 0.56) 0.93    1802.6   30520.00
      4      353.17   38.68    0.491  0.60( 0.56) 0.93    1827.9   30210.00
      5      351.97   39.10    0.487  0.60( 0.56) 0.93    1862.7   30200.00
      6      344.96   42.28    0.466  0.60( 0.55) 0.92    2129.6   30540.00
      7      344.64   42.41    0.466  0.60( 0.55) 0.92    2139.7   30100.00
      8      333.31   44.10    0.455  0.60( 0.55) 0.92    2262.9   30510.00
      9      319.09   46.17    0.443  0.60( 0.55) 0.91    2407.7   30110.00
```



```
     10      311.54   49.17    0.425  0.60( 0.54) 0.91    2641.0   30400.00
     11      310.41   49.74    0.422  0.60( 0.54) 0.91    2683.8   30500.00
     12      304.49   56.08    0.387  0.60( 0.54) 0.90    3152.7   30300.00
     13      298.29   61.10    0.364  0.60( 0.53) 0.89    3496.1   21400.00
     14      271.89   83.24    0.315  0.60( 0.52) 0.87    4880.6   13100.00
     15      273.05   84.64    0.312  0.60( 0.52) 0.87    4961.4   13200.00
     16      270.09   91.24    0.298  0.60( 0.52) 0.86    5221.4   13210.00
     17      272.21  122.87    0.243  0.60( 0.51) 0.85    6315.9   13000.00
     18      268.55  126.35    0.240  0.60( 0.51) 0.85    6336.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1        1.89   25.32    0.626  0.60( 0.60) 1.00      40.4   30600.00
  LONGEST FLOWPATH FROM NODE  30600.00 TO NODE  13305.20 =    2948.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      360.96   25.32    0.626  0.60( 0.56) 0.93    1192.6   30600.00
      2      359.07   33.61    0.531  0.60( 0.56) 0.93    1570.0   21300.00
      3      354.97   38.01    0.496  0.60( 0.56) 0.93    1833.2   30410.00
      4      354.66   38.19    0.495  0.60( 0.56) 0.93    1843.0   30520.00
      5      353.17   38.68    0.491  0.60( 0.56) 0.93    1868.2   30210.00
      6      351.97   39.10    0.487  0.60( 0.56) 0.93    1903.1   30200.00
      7      344.96   42.28    0.466  0.60( 0.55) 0.92    2169.9   30540.00
      8      344.64   42.41    0.466  0.60( 0.55) 0.92    2180.0   30100.00
      9      333.31   44.10    0.455  0.60( 0.55) 0.92    2303.2   30510.00
     10      319.09   46.17    0.443  0.60( 0.55) 0.91    2448.1   30110.00
     11      311.54   49.17    0.425  0.60( 0.54) 0.91    2681.4   30400.00
     12      310.41   49.74    0.422  0.60( 0.54) 0.91    2724.2   30500.00
     13      304.49   56.08    0.387  0.60( 0.54) 0.90    3193.1   30300.00
     14      298.29   61.10    0.364  0.60( 0.54) 0.89    3536.5   21400.00
     15      271.89   83.24    0.315  0.60( 0.52) 0.87    4920.9   13100.00
     16      273.05   84.64    0.312  0.60( 0.52) 0.87    5001.8   13200.00
     17      270.09   91.24    0.298  0.60( 0.52) 0.87    5261.7   13210.00
     18      272.21  122.87    0.243  0.60( 0.51) 0.86    6356.2   13000.00
     19      268.55  126.35    0.240  0.60( 0.51) 0.85    6376.4   13010.00
    TOTAL AREA(ACRES) =      6376.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      360.96  Tc(MIN.) =   25.318
  EFFECTIVE AREA(ACRES) =   1192.58  AREA-AVERAGED Fm(INCH/HR) =  0.56
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.85
  TOTAL AREA(ACRES) =     6376.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.40 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    284.00  DOWNSTREAM(FEET) =    274.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   826.37   CHANNEL SLOPE =  0.0121
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
```

CHANNEL FLOW THRU SUBAREA(CFS) = 360.96
FLOW VELOCITY(FEET/SEC.) = 6.56 FLOW DEPTH(FEET) = 4.28
TRAVEL TIME(MIN.) = 2.10 Tc(MIN.) = 27.42
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.40 = 44030.70 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	360.96	27.42	0.596	0.60(0.56)	0.93	1192.6	30600.00
2	359.07	35.71	0.514	0.60(0.56)	0.93	1570.0	21300.00
3	354.97	40.12	0.479	0.60(0.56)	0.93	1833.2	30410.00
4	354.66	40.30	0.478	0.60(0.56)	0.93	1843.0	30520.00
5	353.17	40.79	0.475	0.60(0.56)	0.93	1868.2	30210.00
6	351.97	41.21	0.473	0.60(0.56)	0.93	1903.1	30200.00
7	344.96	44.40	0.454	0.60(0.55)	0.92	2169.9	30540.00
8	344.64	44.53	0.453	0.60(0.55)	0.92	2180.0	30100.00
9	333.31	46.24	0.443	0.60(0.55)	0.92	2303.2	30510.00
10	319.09	48.34	0.430	0.60(0.55)	0.91	2448.1	30110.00
11	311.54	51.35	0.413	0.60(0.54)	0.91	2681.4	30400.00
12	310.41	51.92	0.410	0.60(0.54)	0.91	2724.2	30500.00
13	304.49	58.28	0.375	0.60(0.54)	0.90	3193.1	30300.00
14	298.29	63.30	0.359	0.60(0.54)	0.89	3536.5	21400.00
15	271.89	85.49	0.310	0.60(0.52)	0.87	4920.9	13100.00
16	273.05	86.89	0.307	0.60(0.52)	0.87	5001.8	13200.00
17	270.09	93.49	0.294	0.60(0.52)	0.87	5261.7	13210.00
18	272.21	125.13	0.241	0.60(0.51)	0.86	6356.2	13000.00
19	268.55	128.61	0.238	0.60(0.51)	0.85	6376.4	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 360.96 Tc(MIN.) = 27.42
AREA-AVERAGED Fm(INCH/HR) = 0.56 AREA-AVERAGED Fp(INCH/HR) = 0.60
AREA-AVERAGED Ap = 0.93 EFFECTIVE AREA(ACRES) = 1192.58

****
FLOW PROCESS FROM NODE 13305.40 TO NODE 13305.40 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13305.40 TO NODE 13305.40 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610307T.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	8.27	25.65	0.60(0.60)	1.00	98.0	30700.00

TOTAL AREA(ACRES) = 98.0

****
FLOW PROCESS FROM NODE 13305.40 TO NODE 13305.40 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	360.96	27.42	0.596	0.60(0.56)	0.93	1192.6	30600.00
2	359.07	35.71	0.514	0.60(0.56)	0.93	1570.0	21300.00
3	354.97	40.12	0.479	0.60(0.56)	0.93	1833.2	30410.00
4	354.66	40.30	0.478	0.60(0.56)	0.93	1843.0	30520.00
5	353.17	40.79	0.475	0.60(0.56)	0.93	1868.2	30210.00
6	351.97	41.21	0.473	0.60(0.56)	0.93	1903.1	30200.00
7	344.96	44.40	0.454	0.60(0.55)	0.92	2169.9	30540.00
8	344.64	44.53	0.453	0.60(0.55)	0.92	2180.0	30100.00
9	333.31	46.24	0.443	0.60(0.55)	0.92	2303.2	30510.00
10	319.09	48.34	0.430	0.60(0.55)	0.91	2448.1	30110.00
11	311.54	51.35	0.413	0.60(0.54)	0.91	2681.4	30400.00
12	310.41	51.92	0.410	0.60(0.54)	0.91	2724.2	30500.00
13	304.49	58.28	0.375	0.60(0.54)	0.90	3193.1	30300.00
14	298.29	63.30	0.359	0.60(0.54)	0.89	3536.5	21400.00
15	271.89	85.49	0.310	0.60(0.52)	0.87	4920.9	13100.00
16	273.05	86.89	0.307	0.60(0.52)	0.87	5001.8	13200.00
17	270.09	93.49	0.294	0.60(0.52)	0.87	5261.7	13210.00
18	272.21	125.13	0.241	0.60(0.51)	0.86	6356.2	13000.00
19	268.55	128.61	0.238	0.60(0.51)	0.85	6376.4	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.40 = 44030.70 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	8.27	25.65	0.621	0.60(0.60)	1.00	98.0	30700.00

LONGEST FLOWPATH FROM NODE 30700.00 TO NODE 13305.40 = 5192.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	369.23	25.65	0.621	0.60(0.56)	0.94	1213.6	30700.00
2	360.95	27.42	0.596	0.60(0.56)	0.94	1290.6	30600.00
3	359.06	35.71	0.514	0.60(0.56)	0.94	1668.0	21300.00
4	354.97	40.12	0.479	0.60(0.56)	0.93	1931.2	30410.00
5	354.66	40.30	0.478	0.60(0.56)	0.93	1941.0	30520.00
6	353.17	40.79	0.475	0.60(0.56)	0.93	1966.2	30210.00
7	351.97	41.21	0.473	0.60(0.56)	0.93	2001.1	30200.00
8	344.96	44.40	0.454	0.60(0.55)	0.92	2267.9	30540.00
9	344.64	44.53	0.453	0.60(0.55)	0.92	2278.0	30100.00
10	333.31	46.24	0.443	0.60(0.55)	0.92	2401.2	30510.00
11	319.08	48.34	0.430	0.60(0.55)	0.92	2546.1	30110.00
12	311.54	51.35	0.413	0.60(0.55)	0.91	2779.4	30400.00
13	310.41	51.92	0.410	0.60(0.55)	0.91	2822.2	30500.00
14	304.49	58.28	0.375	0.60(0.54)	0.90	3291.1	30300.00
15	298.29	63.30	0.359	0.60(0.54)	0.90	3634.5	21400.00
16	271.89	85.49	0.310	0.60(0.52)	0.87	5018.9	13100.00
17	273.05	86.89	0.307	0.60(0.52)	0.87	5099.8	13200.00
18	270.09	93.49	0.294	0.60(0.52)	0.87	5359.7	13210.00
19	272.21	125.13	0.241	0.60(0.51)	0.86	6454.2	13000.00
20	268.55	128.61	0.238	0.60(0.51)	0.86	6474.4	13010.00

TOTAL AREA(ACRES) = 6474.4

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 369.23 Tc(MIN.) = 25.647
EFFECTIVE AREA(ACRES) = 1213.58 AREA-AVERAGED Fm(INCH/HR) = 0.56
AREA-AVERAGED Fp(INCH/HR) = 0.60 AREA-AVERAGED Ap = 0.86
TOTAL AREA(ACRES) = 6474.4

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.40 = 44030.70 FEET.

****
FLOW PROCESS FROM NODE 13305.40 TO NODE 13305.60 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==
ELEVATION DATA: UPSTREAM(FEET) = 274.00 DOWNSTREAM(FEET) = 258.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 733.85 CHANNEL SLOPE = 0.0218
CHANNEL BASE(FEET) = 0.00 "Z" FACTOR = 3.000
MANNING'S FACTOR = 0.040 MAXIMUM DEPTH(FEET) = 20.00
CHANNEL FLOW THRU SUBAREA(CFS) = 369.23
FLOW VELOCITY(FEET/SEC.) = 8.21 FLOW DEPTH(FEET) = 3.87
TRAVEL TIME(MIN.) = 1.49 Tc(MIN.) = 27.14
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	369.23	27.14	0.600	0.60(0.56)	0.94	1213.6	30700.00
2	360.95	28.91	0.575	0.60(0.56)	0.94	1290.6	30600.00
3	359.06	37.21	0.502	0.60(0.56)	0.94	1668.0	21300.00
4	354.97	41.62	0.470	0.60(0.56)	0.93	1931.2	30410.00
5	354.66	41.80	0.469	0.60(0.56)	0.93	1941.0	30520.00
6	353.17	42.29	0.466	0.60(0.56)	0.93	1966.2	30210.00
7	351.97	42.72	0.464	0.60(0.56)	0.93	2001.1	30200.00
8	344.96	45.92	0.445	0.60(0.55)	0.92	2267.9	30540.00
9	344.64	46.04	0.444	0.60(0.55)	0.92	2278.0	30100.00
10	333.31	47.77	0.433	0.60(0.55)	0.92	2401.2	30510.00
11	319.08	49.88	0.421	0.60(0.55)	0.92	2546.1	30110.00
12	311.54	52.90	0.404	0.60(0.55)	0.91	2779.4	30400.00
13	310.41	53.47	0.401	0.60(0.55)	0.91	2822.2	30500.00
14	304.49	59.84	0.367	0.60(0.54)	0.90	3291.1	30300.00
15	298.29	64.87	0.355	0.60(0.54)	0.90	3634.5	21400.00
16	271.89	87.10	0.306	0.60(0.52)	0.87	5018.9	13100.00
17	273.05	88.49	0.303	0.60(0.52)	0.87	5099.8	13200.00
18	270.09	95.10	0.291	0.60(0.52)	0.87	5359.7	13210.00
19	272.21	126.73	0.240	0.60(0.51)	0.86	6454.2	13000.00
20	268.55	130.22	0.236	0.60(0.51)	0.86	6474.4	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 369.23 Tc(MIN.) = 27.14
AREA-AVERAGED Fm(INCH/HR) = 0.56 AREA-AVERAGED Fp(INCH/HR) = 0.60
AREA-AVERAGED Ap = 0.94 EFFECTIVE AREA(ACRES) = 1213.58

****
FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.60 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==

****
FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.60 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==
PEAK FLOWRATE TABLE FILE NAME: 0610308T.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	5.60	23.58	0.60(0.60)	1.00	64.8	30800.00

TOTAL AREA(ACRES) = 64.8

****
FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.60 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	369.23	27.14	0.600	0.60(0.56)	0.94	1213.6	30700.00
2	360.95	28.91	0.575	0.60(0.56)	0.94	1290.6	30600.00
3	359.06	37.21	0.502	0.60(0.56)	0.94	1668.0	21300.00
4	354.97	41.62	0.470	0.60(0.56)	0.93	1931.2	30410.00
5	354.66	41.80	0.469	0.60(0.56)	0.93	1941.0	30520.00
6	353.17	42.29	0.466	0.60(0.56)	0.93	1966.2	30210.00
7	351.97	42.72	0.464	0.60(0.56)	0.93	2001.1	30200.00
8	344.96	45.92	0.445	0.60(0.55)	0.92	2267.9	30540.00
9	344.64	46.04	0.444	0.60(0.55)	0.92	2278.0	30100.00
10	333.31	47.77	0.433	0.60(0.55)	0.92	2401.2	30510.00
11	319.08	49.88	0.421	0.60(0.55)	0.92	2546.1	30110.00
12	311.54	52.90	0.404	0.60(0.55)	0.91	2779.4	30400.00
13	310.41	53.47	0.401	0.60(0.55)	0.91	2822.2	30500.00
14	304.49	59.84	0.367	0.60(0.54)	0.90	3291.1	30300.00
15	298.29	64.87	0.355	0.60(0.54)	0.90	3634.5	21400.00
16	271.89	87.10	0.306	0.60(0.52)	0.87	5018.9	13100.00
17	273.05	88.49	0.303	0.60(0.52)	0.87	5099.8	13200.00
18	270.09	95.10	0.291	0.60(0.52)	0.87	5359.7	13210.00
19	272.21	126.73	0.240	0.60(0.51)	0.86	6454.2	13000.00
20	268.55	130.22	0.236	0.60(0.51)	0.86	6474.4	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	5.60	23.58	0.656	0.60(0.60)	1.00	64.8	30800.00

LONGEST FLOWPATH FROM NODE 30800.00 TO NODE 13305.60 = 4165.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	374.83	23.58	0.656	0.60(0.56)	0.94	1119.3	30800.00
2	369.25	27.14	0.600	0.60(0.56)	0.94	1278.4	30700.00
3	360.95	28.91	0.575	0.60(0.56)	0.94	1355.4	30600.00
4	359.06	37.21	0.502	0.60(0.56)	0.94	1732.8	21300.00
5	354.97	41.62	0.470	0.60(0.56)	0.94	1996.1	30410.00
6	354.66	41.80	0.469	0.60(0.56)	0.94	2005.8	30520.00
7	353.17	42.29	0.466	0.60(0.56)	0.93	2031.0	30210.00
8	351.97	42.72	0.464	0.60(0.56)	0.93	2065.9	30200.00
9	344.96	45.92	0.445	0.60(0.56)	0.93	2332.7	30540.00
10	344.64	46.04	0.444	0.60(0.56)	0.93	2342.9	30100.00
11	333.31	47.77	0.433	0.60(0.55)	0.92	2466.1	30510.00
12	319.08	49.88	0.421	0.60(0.55)	0.92	2610.9	30110.00
13	311.54	52.90	0.404	0.60(0.55)	0.91	2844.2	30400.00

14	310.41	53.47	0.401	0.60(0.55)	0.91	2887.0	30500.00
15	304.49	59.84	0.367	0.60(0.54)	0.90	3355.9	30300.00
16	298.29	64.87	0.355	0.60(0.54)	0.90	3699.3	21400.00
17	271.89	87.10	0.306	0.60(0.52)	0.87	5083.8	13100.00
18	273.05	88.49	0.303	0.60(0.52)	0.87	5164.6	13200.00
19	270.09	95.10	0.291	0.60(0.52)	0.87	5424.6	13210.00
20	272.21	126.73	0.240	0.60(0.52)	0.86	6519.1	13000.00
21	268.55	130.22	0.236	0.60(0.51)	0.86	6539.3	13010.00

TOTAL AREA(ACRES) = 6539.3

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 374.83 Tc(MIN.) = 23.579
EFFECTIVE AREA(ACRES) = 1119.31 AREA-AVERAGED Fm(INCH/HR) = 0.56
AREA-AVERAGED Fp(INCH/HR) = 0.60 AREA-AVERAGED Ap = 0.86
TOTAL AREA(ACRES) = 6539.3
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

****
FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.80 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 258.00 DOWNSTREAM(FEET) = 254.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 947.16 CHANNEL SLOPE = 0.0042
CHANNEL BASE(FEET) = 0.00 "Z" FACTOR = 3.000
MANNING'S FACTOR = 0.040 MAXIMUM DEPTH(FEET) = 20.00
CHANNEL FLOW THRU SUBAREA(CFS) = 374.83
FLOW VELOCITY(FEET/SEC.) = 4.46 FLOW DEPTH(FEET) = 5.29
TRAVEL TIME(MIN.) = 3.54 Tc(MIN.) = 27.12
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	374.83	27.12	0.600	0.60(0.56)	0.94	1119.3	30800.00
2	369.25	30.69	0.555	0.60(0.56)	0.94	1278.4	30700.00
3	360.95	32.49	0.540	0.60(0.56)	0.94	1355.4	30600.00
4	359.06	40.79	0.475	0.60(0.56)	0.94	1732.8	21300.00
5	354.97	45.21	0.449	0.60(0.56)	0.94	1996.1	30410.00
6	354.66	45.39	0.448	0.60(0.56)	0.94	2005.8	30520.00
7	353.17	45.89	0.445	0.60(0.56)	0.93	2031.0	30210.00
8	351.97	46.32	0.442	0.60(0.56)	0.93	2065.9	30200.00
9	344.96	49.53	0.423	0.60(0.56)	0.93	2332.7	30540.00
10	344.64	49.66	0.422	0.60(0.56)	0.93	2342.9	30100.00
11	333.31	51.41	0.412	0.60(0.55)	0.92	2466.1	30510.00
12	319.08	53.57	0.401	0.60(0.55)	0.92	2610.9	30110.00
13	311.54	56.61	0.384	0.60(0.55)	0.91	2844.2	30400.00
14	310.41	57.18	0.381	0.60(0.55)	0.91	2887.0	30500.00
15	304.49	63.56	0.358	0.60(0.54)	0.90	3355.9	30300.00
16	298.29	68.62	0.347	0.60(0.54)	0.90	3699.3	21400.00
17	271.89	90.94	0.298	0.60(0.52)	0.87	5083.8	13100.00
18	273.05	92.33	0.296	0.60(0.52)	0.87	5164.6	13200.00
19	270.09	98.94	0.284	0.60(0.52)	0.87	5424.6	13210.00
20	272.21	130.57	0.236	0.60(0.52)	0.86	6519.1	13000.00
21	268.55	134.07	0.233	0.60(0.51)	0.86	6539.3	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 374.83 Tc(MIN.) = 27.12

AREA-AVERAGED Fm(INCH/HR) = 0.56 AREA-AVERAGED Fp(INCH/HR) = 0.60
AREA-AVERAGED Ap = 0.94 EFFECTIVE AREA(ACRES) = 1119.31

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610309T.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	7.15	22.19	0.60(0.60)	1.00	65.9	30900.00
2	7.09	22.25	0.60(0.60)	1.00	65.9	30910.00

TOTAL AREA(ACRES) = 65.9

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	374.83	27.12	0.600	0.60(0.56)	0.94	1119.3	30800.00
2	369.25	30.69	0.555	0.60(0.56)	0.94	1278.4	30700.00
3	360.95	32.49	0.540	0.60(0.56)	0.94	1355.4	30600.00
4	359.06	40.79	0.475	0.60(0.56)	0.94	1732.8	21300.00
5	354.97	45.21	0.449	0.60(0.56)	0.94	1996.1	30410.00
6	354.66	45.39	0.448	0.60(0.56)	0.94	2005.8	30520.00
7	353.17	45.89	0.445	0.60(0.56)	0.93	2031.0	30210.00
8	351.97	46.32	0.442	0.60(0.56)	0.93	2065.9	30200.00
9	344.96	49.53	0.423	0.60(0.56)	0.93	2332.7	30540.00
10	344.64	49.66	0.422	0.60(0.56)	0.93	2342.9	30100.00
11	333.31	51.41	0.412	0.60(0.55)	0.92	2466.1	30510.00
12	319.08	53.57	0.401	0.60(0.55)	0.92	2610.9	30110.00
13	311.54	56.61	0.384	0.60(0.55)	0.91	2844.2	30400.00
14	310.41	57.18	0.381	0.60(0.55)	0.91	2887.0	30500.00
15	304.49	63.56	0.358	0.60(0.54)	0.90	3355.9	30300.00
16	298.29	68.62	0.347	0.60(0.54)	0.90	3699.3	21400.00
17	271.89	90.94	0.298	0.60(0.52)	0.87	5083.8	13100.00
18	273.05	92.33	0.296	0.60(0.52)	0.87	5164.6	13200.00
19	270.09	98.94	0.284	0.60(0.52)	0.87	5424.6	13210.00
20	272.21	130.57	0.236	0.60(0.52)	0.86	6519.1	13000.00
21	268.55	134.07	0.233	0.60(0.51)	0.86	6539.3	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	7.15	22.19	0.680	0.60(0.60)	1.00	65.9	30900.00

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     2        7.09   22.25    0.680  0.60( 0.60) 1.00      65.9   30910.00
  LONGEST FLOWPATH FROM NODE  30900.00 TO NODE  13305.80 =    3403.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      381.97   22.19    0.680  0.60( 0.57) 0.95     982.0   30900.00
      2      381.91   22.25    0.680  0.60( 0.57) 0.95     984.2   30910.00
      3      374.87   27.12    0.600  0.60( 0.57) 0.95    1185.2   30800.00
      4      369.25   30.69    0.555  0.60( 0.57) 0.94    1344.3   30700.00
      5      360.95   32.49    0.540  0.60( 0.57) 0.94    1421.3   30600.00
      6      359.06   40.79    0.475  0.60( 0.56) 0.94    1798.7   21300.00
      7      354.97   45.21    0.449  0.60( 0.56) 0.94    2062.0   30410.00
      8      354.66   45.39    0.448  0.60( 0.56) 0.94    2071.7   30520.00
      9      353.17   45.89    0.445  0.60( 0.56) 0.94    2096.9   30210.00
     10      351.97   46.32    0.442  0.60( 0.56) 0.94    2131.8   30200.00
     11      344.96   49.53    0.423  0.60( 0.56) 0.93    2398.7   30540.00
     12      344.64   49.66    0.422  0.60( 0.56) 0.93    2408.8   30100.00
     13      333.31   51.41    0.412  0.60( 0.55) 0.92    2532.0   30510.00
     14      319.08   53.57    0.401  0.60( 0.55) 0.92    2676.8   30110.00
     15      311.54   56.61    0.384  0.60( 0.55) 0.92    2910.1   30400.00
     16      310.41   57.18    0.381  0.60( 0.55) 0.91    2952.9   30500.00
     17      304.49   63.56    0.358  0.60( 0.54) 0.91    3421.8   30300.00
     18      298.29   68.62    0.347  0.60( 0.54) 0.90    3765.2   21400.00
     19      271.89   90.94    0.298  0.60( 0.52) 0.87    5149.7   13100.00
     20      273.05   92.33    0.296  0.60( 0.52) 0.87    5230.5   13200.00
     21      270.09   98.94    0.284  0.60( 0.52) 0.87    5490.5   13210.00
     22      272.21  130.57    0.236  0.60( 0.52) 0.86    6585.0   13000.00
     23      268.55  134.07    0.233  0.60( 0.52) 0.86    6605.2   13010.00
    TOTAL AREA(ACRES) =      6605.2

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      381.97  Tc(MIN.) =   22.195
  EFFECTIVE AREA(ACRES) =    982.00  AREA-AVERAGED Fm(INCH/HR) =  0.57
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.86
  TOTAL AREA(ACRES) =     6605.2
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.80 =   45711.71 FEET.

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  FLOW PROCESS FROM NODE  13305.80 TO NODE  13306.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    254.00  DOWNSTREAM(FEET) =    245.50
  CHANNEL LENGTH THRU SUBAREA(FEET) =   583.12   CHANNEL SLOPE =  0.0146
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  *   2 YEAR RAINFALL INTENSITY(INCH/HR) =  0.656
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       68.77      0.60     0.998     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.60
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     383.75
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   7.14
  AVERAGE FLOW DEPTH(FEET) =   4.23   TRAVEL TIME(MIN.) =   1.36
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  Tc(MIN.) =   23.55
  SUBAREA AREA(ACRES) =    68.77       SUBAREA RUNOFF(CFS) =    3.55
  EFFECTIVE AREA(ACRES) =   1050.77     AREA-AVERAGED Fm(INCH/HR) =   0.57
  AREA-AVERAGED Fp(INCH/HR) =   0.60  AREA-AVERAGED Ap =   0.95
  TOTAL AREA(ACRES) =     6673.9         PEAK FLOW RATE(CFS) =     381.97
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  4.22   FLOW VELOCITY(FEET/SEC.) =   7.14
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13306.00 =   46294.83 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      381.97   23.55    0.656  0.60( 0.57) 0.95    1050.8   30900.00
      2      381.91   23.61    0.655  0.60( 0.57) 0.95    1053.0   30910.00
      3      374.87   28.49    0.581  0.60( 0.57) 0.95    1254.0   30800.00
      4      369.25   32.06    0.544  0.60( 0.57) 0.95    1413.1   30700.00
      5      360.95   33.87    0.529  0.60( 0.57) 0.95    1490.1   30600.00
      6      359.06   42.17    0.467  0.60( 0.57) 0.94    1867.5   21300.00
      7      354.97   46.60    0.440  0.60( 0.56) 0.94    2130.7   30410.00
      8      354.66   46.78    0.439  0.60( 0.56) 0.94    2140.5   30520.00
      9      353.17   47.27    0.436  0.60( 0.56) 0.94    2165.7   30210.00
     10      351.97   47.71    0.434  0.60( 0.56) 0.94    2200.6   30200.00
     11      344.96   50.93    0.415  0.60( 0.56) 0.93    2467.4   30540.00
     12      344.64   51.06    0.414  0.60( 0.56) 0.93    2477.5   30100.00
     13      333.31   52.82    0.405  0.60( 0.56) 0.93    2600.8   30510.00
     14      319.08   54.99    0.393  0.60( 0.55) 0.92    2745.6   30110.00
     15      311.54   58.05    0.377  0.60( 0.55) 0.92    2978.9   30400.00
     16      310.41   58.62    0.373  0.60( 0.55) 0.92    3021.7   30500.00
     17      304.49   65.00    0.355  0.60( 0.54) 0.91    3490.6   30300.00
     18      298.29   70.07    0.344  0.60( 0.54) 0.90    3834.0   21400.00
     19      271.89   92.42    0.296  0.60( 0.53) 0.88    5218.4   13100.00
     20      273.05   93.81    0.293  0.60( 0.52) 0.88    5299.3   13200.00
     21      270.09  100.43    0.281  0.60( 0.52) 0.87    5559.3   13210.00
     22      272.21  132.05    0.235  0.60( 0.52) 0.86    6653.8   13000.00
     23      268.55  135.56    0.231  0.60( 0.52) 0.86    6673.9   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =     381.97  Tc(MIN.) =   23.55
  AREA-AVERAGED Fm(INCH/HR) =  0.57  AREA-AVERAGED Fp(INCH/HR) =  0.60
  AREA-AVERAGED Ap =  0.95  EFFECTIVE AREA(ACRES) =    1050.77

****************************************************************************
  FLOW PROCESS FROM NODE  13306.00 TO NODE  13307.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    245.50  DOWNSTREAM(FEET) =    220.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1543.21   CHANNEL SLOPE =  0.0165
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  CHANNEL FLOW THRU SUBAREA(CFS) =     381.97
  FLOW VELOCITY(FEET/SEC.) =   7.48   FLOW DEPTH(FEET) =   4.12
  TRAVEL TIME(MIN.) =   3.44   Tc(MIN.) =   26.99
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

  ** PEAK FLOW RATE TABLE **
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STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	381.97	26.99	0.602	0.60(0.57)	0.95	1050.8	30900.00
2	381.91	27.05	0.601	0.60(0.57)	0.95	1053.0	30910.00
3	374.87	31.95	0.544	0.60(0.57)	0.95	1254.0	30800.00
4	369.25	35.53	0.516	0.60(0.57)	0.95	1413.1	30700.00
5	360.95	37.36	0.501	0.60(0.57)	0.95	1490.1	30600.00
6	359.06	45.67	0.446	0.60(0.57)	0.94	1867.5	21300.00
7	354.97	50.10	0.419	0.60(0.56)	0.94	2130.7	30410.00
8	354.66	50.29	0.418	0.60(0.56)	0.94	2140.5	30520.00
9	353.17	50.78	0.416	0.60(0.56)	0.94	2165.7	30210.00
10	351.97	51.22	0.413	0.60(0.56)	0.94	2200.6	30200.00
11	344.96	54.46	0.396	0.60(0.56)	0.93	2467.4	30540.00
12	344.64	54.59	0.395	0.60(0.56)	0.93	2477.5	30100.00
13	333.31	56.39	0.386	0.60(0.56)	0.93	2600.8	30510.00
14	319.08	58.59	0.374	0.60(0.55)	0.92	2745.6	30110.00
15	311.54	61.67	0.362	0.60(0.55)	0.92	2978.9	30400.00
16	310.41	62.24	0.361	0.60(0.55)	0.92	3021.7	30500.00
17	304.49	68.64	0.347	0.60(0.54)	0.91	3490.6	30300.00
18	298.29	73.73	0.336	0.60(0.54)	0.90	3834.0	21400.00
19	271.89	96.17	0.289	0.60(0.53)	0.88	5218.4	13100.00
20	273.05	97.56	0.286	0.60(0.52)	0.88	5299.3	13200.00
21	270.09	104.19	0.274	0.60(0.52)	0.87	5559.3	13210.00
22	272.21	135.79	0.231	0.60(0.52)	0.86	6653.8	13000.00
23	268.55	139.32	0.228	0.60(0.52)	0.86	6673.9	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 381.97 Tc(MIN.) = 26.99
AREA-AVERAGED Fm(INCH/HR) = 0.57 AREA-AVERAGED Fp(INCH/HR) = 0.60
AREA-AVERAGED Ap = 0.95 EFFECTIVE AREA(ACRES) = 1050.77

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13307.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<
==========

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13307.00 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 2 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610310T.DNA
MEMORY BANK # 2 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2.56	33.94	0.60(0.60)	1.00	97.9	31000.00

TOTAL AREA(ACRES) = 97.9

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13307.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	381.97	26.99	0.602	0.60(0.57)	0.95	1050.8	30900.00

2	381.91	27.05	0.601	0.60(0.57)	0.95	1053.0	30910.00
3	374.87	31.95	0.544	0.60(0.57)	0.95	1254.0	30800.00
4	369.25	35.53	0.516	0.60(0.57)	0.95	1413.1	30700.00
5	360.95	37.36	0.501	0.60(0.57)	0.95	1490.1	30600.00
6	359.06	45.67	0.446	0.60(0.57)	0.94	1867.5	21300.00
7	354.97	50.10	0.419	0.60(0.56)	0.94	2130.7	30410.00
8	354.66	50.29	0.418	0.60(0.56)	0.94	2140.5	30520.00
9	353.17	50.78	0.416	0.60(0.56)	0.94	2165.7	30210.00
10	351.97	51.22	0.413	0.60(0.56)	0.94	2200.6	30200.00
11	344.96	54.46	0.396	0.60(0.56)	0.93	2467.4	30540.00
12	344.64	54.59	0.395	0.60(0.56)	0.93	2477.5	30100.00
13	333.31	56.39	0.386	0.60(0.56)	0.93	2600.8	30510.00
14	319.08	58.59	0.374	0.60(0.55)	0.92	2745.6	30110.00
15	311.54	61.67	0.362	0.60(0.55)	0.92	2978.9	30400.00
16	310.41	62.24	0.361	0.60(0.55)	0.92	3021.7	30500.00
17	304.49	68.64	0.347	0.60(0.54)	0.91	3490.6	30300.00
18	298.29	73.73	0.336	0.60(0.54)	0.90	3834.0	21400.00
19	271.89	96.17	0.289	0.60(0.53)	0.88	5218.4	13100.00
20	273.05	97.56	0.286	0.60(0.52)	0.88	5299.3	13200.00
21	270.09	104.19	0.274	0.60(0.52)	0.87	5559.3	13210.00
22	272.21	135.79	0.231	0.60(0.52)	0.86	6653.8	13000.00
23	268.55	139.32	0.228	0.60(0.52)	0.86	6673.9	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13307.00 = 47838.04 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2.56	33.94	0.528	0.60(0.60)	1.00	97.9	31000.00

LONGEST FLOWPATH FROM NODE 31000.00 TO NODE 13307.00 = 5162.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	384.29	26.99	0.602	0.60(0.57)	0.95	1128.6	30900.00
2	384.24	27.05	0.601	0.60(0.57)	0.95	1131.0	30910.00
3	377.35	31.95	0.544	0.60(0.57)	0.95	1346.1	30800.00
4	374.31	33.94	0.528	0.60(0.57)	0.95	1440.2	31000.00
5	371.75	35.53	0.516	0.60(0.57)	0.95	1511.0	30700.00
6	363.38	37.36	0.501	0.60(0.57)	0.95	1588.0	30600.00
7	361.22	45.67	0.446	0.60(0.57)	0.95	1965.4	21300.00
8	357.00	50.10	0.419	0.60(0.56)	0.94	2228.6	30410.00
9	356.69	50.29	0.418	0.60(0.56)	0.94	2238.4	30520.00
10	355.18	50.78	0.416	0.60(0.56)	0.94	2263.6	30210.00
11	353.97	51.22	0.413	0.60(0.56)	0.94	2298.4	30200.00
12	346.87	54.46	0.396	0.60(0.56)	0.93	2565.3	30540.00
13	346.55	54.59	0.395	0.60(0.56)	0.93	2575.4	30100.00
14	335.17	56.39	0.386	0.60(0.56)	0.93	2698.6	30510.00
15	320.89	58.59	0.374	0.60(0.55)	0.92	2843.5	30110.00
16	313.29	61.67	0.362	0.60(0.55)	0.92	3076.8	30400.00
17	312.16	62.24	0.361	0.60(0.55)	0.92	3119.6	30500.00
18	306.17	68.64	0.347	0.60(0.55)	0.91	3588.5	30300.00
19	299.91	73.73	0.336	0.60(0.54)	0.90	3931.9	21400.00
20	273.29	96.17	0.289	0.60(0.53)	0.88	5316.3	13100.00
21	274.44	97.56	0.286	0.60(0.53)	0.88	5397.2	13200.00
22	271.42	104.19	0.274	0.60(0.53)	0.88	5657.1	13210.00
23	273.33	135.79	0.231	0.60(0.52)	0.86	6751.6	13000.00
24	269.66	139.32	0.228	0.60(0.52)	0.86	6771.8	13010.00

TOTAL AREA(ACRES) = 6771.8

```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      384.29  Tc(MIN.) =   26.992
  EFFECTIVE AREA(ACRES) =   1128.62  AREA-AVERAGED Fm(INCH/HR) =  0.57
  AREA-AVERAGED Fp(INCH/HR) =  0.60  AREA-AVERAGED Ap =  0.95
  TOTAL AREA(ACRES) =     6771.8
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    220.00  DOWNSTREAM(FEET) =    215.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.62   CHANNEL SLOPE =  0.0054
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  CHANNEL FLOW THRU SUBAREA(CFS) =     384.29
  FLOW VELOCITY(FEET/SEC.) =   4.92   FLOW DEPTH(FEET) =   5.10
  TRAVEL TIME(MIN.) =   3.13   Tc(MIN.) =   30.13
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      384.29   30.13    0.559  0.60( 0.57) 0.95    1128.6   30900.00
      2      384.24   30.18    0.559  0.60( 0.57) 0.95    1131.0   30910.00
      3      377.35   35.10    0.519  0.60( 0.57) 0.95    1346.1   30800.00
      4      374.31   37.10    0.503  0.60( 0.57) 0.95    1440.2   31000.00
      5      371.75   38.69    0.490  0.60( 0.57) 0.95    1511.0   30700.00
      6      363.38   40.54    0.477  0.60( 0.57) 0.95    1588.0   30600.00
      7      361.22   48.85    0.427  0.60( 0.57) 0.95    1965.4   21300.00
      8      357.00   53.29    0.402  0.60( 0.56) 0.94    2228.6   30410.00
      9      356.69   53.48    0.401  0.60( 0.56) 0.94    2238.4   30520.00
     10      355.18   53.98    0.398  0.60( 0.56) 0.94    2263.6   30210.00
     11      353.97   54.42    0.396  0.60( 0.56) 0.94    2298.4   30200.00
     12      346.87   57.67    0.379  0.60( 0.56) 0.93    2565.3   30540.00
     13      346.55   57.81    0.378  0.60( 0.56) 0.93    2575.4   30100.00
     14      335.17   59.63    0.368  0.60( 0.56) 0.93    2698.6   30510.00
     15      320.89   61.87    0.362  0.60( 0.55) 0.92    2843.5   30110.00
     16      313.29   64.97    0.355  0.60( 0.55) 0.92    3076.8   30400.00
     17      312.16   65.55    0.354  0.60( 0.55) 0.92    3119.6   30500.00
     18      306.17   71.96    0.340  0.60( 0.55) 0.91    3588.5   30300.00
     19      299.91   77.07    0.328  0.60( 0.54) 0.90    3931.9   21400.00
     20      273.29   99.58    0.283  0.60( 0.53) 0.88    5316.3   13100.00
     21      274.44  100.97    0.280  0.60( 0.53) 0.88    5397.2   13200.00
     22      271.42  107.60    0.268  0.60( 0.53) 0.88    5657.1   13210.00
     23      273.33  139.20    0.228  0.60( 0.52) 0.86    6751.6   13000.00
     24      269.66  142.75    0.225  0.60( 0.52) 0.86    6771.8   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =     384.29  Tc(MIN.) =   30.13
  AREA-AVERAGED Fm(INCH/HR) =  0.57  AREA-AVERAGED Fp(INCH/HR) =  0.60
  AREA-AVERAGED Ap =  0.95  EFFECTIVE AREA(ACRES) =    1128.62

****************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE =  12
----------------------------------------------------------------------------
```



```
  >>>>>CLEAR MEMORY BANK # 3 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610212T.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1        5.41   68.56  0.60( 0.60) 1.00     342.8   21200.00
    TOTAL AREA(ACRES) =      342.8

****************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      384.29   30.13    0.559  0.60( 0.57) 0.95    1128.6   30900.00
      2      384.24   30.18    0.559  0.60( 0.57) 0.95    1131.0   30910.00
      3      377.35   35.10    0.519  0.60( 0.57) 0.95    1346.1   30800.00
      4      374.31   37.10    0.503  0.60( 0.57) 0.95    1440.2   31000.00
      5      371.75   38.69    0.490  0.60( 0.57) 0.95    1511.0   30700.00
      6      363.38   40.54    0.477  0.60( 0.57) 0.95    1588.0   30600.00
      7      361.22   48.85    0.427  0.60( 0.57) 0.95    1965.4   21300.00
      8      357.00   53.29    0.402  0.60( 0.56) 0.94    2228.6   30410.00
      9      356.69   53.48    0.401  0.60( 0.56) 0.94    2238.4   30520.00
     10      355.18   53.98    0.398  0.60( 0.56) 0.94    2263.6   30210.00
     11      353.97   54.42    0.396  0.60( 0.56) 0.94    2298.4   30200.00
     12      346.87   57.67    0.379  0.60( 0.56) 0.93    2565.3   30540.00
     13      346.55   57.81    0.378  0.60( 0.56) 0.93    2575.4   30100.00
     14      335.17   59.63    0.368  0.60( 0.56) 0.93    2698.6   30510.00
     15      320.89   61.87    0.362  0.60( 0.55) 0.92    2843.5   30110.00
     16      313.29   64.97    0.355  0.60( 0.55) 0.92    3076.8   30400.00
     17      312.16   65.55    0.354  0.60( 0.55) 0.92    3119.6   30500.00
     18      306.17   71.96    0.340  0.60( 0.55) 0.91    3588.5   30300.00
     19      299.91   77.07    0.328  0.60( 0.54) 0.90    3931.9   21400.00
     20      273.29   99.58    0.283  0.60( 0.53) 0.88    5316.3   13100.00
     21      274.44  100.97    0.280  0.60( 0.53) 0.88    5397.2   13200.00
     22      271.42  107.60    0.268  0.60( 0.53) 0.88    5657.1   13210.00
     23      273.33  139.20    0.228  0.60( 0.52) 0.86    6751.6   13000.00
     24      269.66  142.75    0.225  0.60( 0.52) 0.86    6771.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1        5.41   68.56    0.347  0.60( 0.60) 1.00     342.8   21200.00
  LONGEST FLOWPATH FROM NODE  21200.00 TO NODE  13308.00 =   11049.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
```

NUMBER	(CFS)	(MIN.)	(INCH/HR)	(INCH/HR)		(ACRES)	NODE
1	388.12	30.13	0.559	0.60(0.57)	0.96	1279.2	30900.00
2	388.07	30.18	0.559	0.60(0.57)	0.96	1281.9	30910.00
3	381.50	35.10	0.519	0.60(0.57)	0.96	1521.6	30800.00
4	378.56	37.10	0.503	0.60(0.57)	0.96	1625.6	31000.00
5	376.07	38.69	0.490	0.60(0.57)	0.96	1704.4	30700.00
6	367.78	40.54	0.477	0.60(0.57)	0.96	1790.7	30600.00
7	365.97	48.85	0.427	0.60(0.57)	0.95	2209.6	21300.00
8	361.88	53.29	0.402	0.60(0.57)	0.95	2495.1	30410.00
9	361.57	53.48	0.401	0.60(0.57)	0.95	2505.7	30520.00
10	360.07	53.98	0.398	0.60(0.57)	0.95	2533.5	30210.00
11	358.87	54.42	0.396	0.60(0.57)	0.95	2570.5	30200.00
12	351.84	57.67	0.379	0.60(0.56)	0.94	2853.7	30540.00
13	351.52	57.81	0.378	0.60(0.56)	0.94	2864.4	30100.00
14	340.16	59.63	0.368	0.60(0.56)	0.94	2996.8	30510.00
15	325.98	61.87	0.362	0.60(0.56)	0.93	3152.8	30110.00
16	318.54	64.97	0.355	0.60(0.56)	0.93	3401.6	30400.00
17	317.43	65.55	0.354	0.60(0.56)	0.93	3447.3	30500.00
18	314.76	68.56	0.347	0.60(0.55)	0.92	3682.6	21200.00
19	311.46	71.96	0.340	0.60(0.55)	0.92	3931.3	30300.00
20	305.03	77.07	0.328	0.60(0.55)	0.91	4274.7	21400.00
21	277.70	99.58	0.283	0.60(0.53)	0.89	5659.1	13100.00
22	278.81	100.97	0.280	0.60(0.53)	0.88	5740.0	13200.00
23	275.60	107.60	0.268	0.60(0.53)	0.88	5999.9	13210.00
24	276.88	139.20	0.228	0.60(0.52)	0.87	7094.4	13000.00
25	273.16	142.75	0.225	0.60(0.52)	0.87	7114.6	13010.00

TOTAL AREA(ACRES) = 7114.6

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 388.12 Tc(MIN.) = 30.126
EFFECTIVE AREA(ACRES) = 1279.24 AREA-AVERAGED Fm(INCH/HR) = 0.57
AREA-AVERAGED Fp(INCH/HR) = 0.60 AREA-AVERAGED Ap = 0.96
TOTAL AREA(ACRES) = 7114.6
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13308.00 = 48763.66 FEET.

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13308.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13308.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
==========
==========
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 7114.6 TC(MIN.) = 30.13
EFFECTIVE AREA(ACRES) = 1279.24 AREA-AVERAGED Fm(INCH/HR)= 0.57
AREA-AVERAGED Fp(INCH/HR) = 0.60 AREA-AVERAGED Ap = 0.958
PEAK FLOW RATE(CFS) = 388.12

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	388.12	30.13	0.559	0.60(0.57)	0.96	1279.2	30900.00
2	388.07	30.18	0.559	0.60(0.57)	0.96	1281.9	30910.00

3	381.50	35.10	0.519	0.60(0.57)	0.96	1521.6	30800.00
4	378.56	37.10	0.503	0.60(0.57)	0.96	1625.6	31000.00
5	376.07	38.69	0.490	0.60(0.57)	0.96	1704.4	30700.00
6	367.78	40.54	0.477	0.60(0.57)	0.96	1790.7	30600.00
7	365.97	48.85	0.427	0.60(0.57)	0.95	2209.6	21300.00
8	361.88	53.29	0.402	0.60(0.57)	0.95	2495.1	30410.00
9	361.57	53.48	0.401	0.60(0.57)	0.95	2505.7	30520.00
10	360.07	53.98	0.398	0.60(0.57)	0.95	2533.5	30210.00
11	358.87	54.42	0.396	0.60(0.57)	0.95	2570.5	30200.00
12	351.84	57.67	0.379	0.60(0.56)	0.94	2853.7	30540.00
13	351.52	57.81	0.378	0.60(0.56)	0.94	2864.4	30100.00
14	340.16	59.63	0.368	0.60(0.56)	0.94	2996.8	30510.00
15	325.98	61.87	0.362	0.60(0.56)	0.93	3152.8	30110.00
16	318.54	64.97	0.355	0.60(0.56)	0.93	3401.6	30400.00
17	317.43	65.55	0.354	0.60(0.56)	0.93	3447.3	30500.00
18	314.76	68.56	0.347	0.60(0.55)	0.92	3682.6	21200.00
19	311.46	71.96	0.340	0.60(0.55)	0.92	3931.3	30300.00
20	305.03	77.07	0.328	0.60(0.55)	0.91	4274.7	21400.00
21	277.70	99.58	0.283	0.60(0.53)	0.89	5659.1	13100.00
22	278.81	100.97	0.280	0.60(0.53)	0.88	5740.0	13200.00
23	275.60	107.60	0.268	0.60(0.53)	0.88	5999.9	13210.00
24	276.88	139.20	0.228	0.60(0.52)	0.87	7094.4	13000.00
25	273.16	142.75	0.225	0.60(0.52)	0.87	7114.6	13010.00

==========
==========
END OF RATIONAL METHOD ANALYSIS

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****************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
          (c) Copyright 1983-2013 Advanced Engineering Software (aes)
              Ver. 20.0  Release Date: 06/01/2013  License ID 1264

                          Analysis prepared by:




 ************************ DESCRIPTION OF STUDY *************************
* GOBERNADORA WATERSHED STUDY - RATIONAL METHOD                        *
* LOCAL WATERSHED S33 - FREE DRAINING - EXISITING CONDITION            *
* 5-YR EV JULY 2017 JMITAL                                             *
 ***********************************************************************

  FILE NAME: RE05EV33.DAT
  TIME/DATE OF STUDY: 13:56 07/26/2017
============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =    5.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  36.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS = 14
   1)    5.00;  2.180
   2)   10.00;  1.510
   3)   15.00;  1.200
   4)   20.00;  1.020
   5)   25.00;  0.900
   6)   30.00;  0.830
   7)   40.00;  0.690
   8)   50.00;  0.610
   9)   60.00;  0.550
  10)   90.00;  0.440
  11)  120.00;  0.370
  12)  180.00;  0.310
  13)  360.00;  0.210
  14) 1200.00;  0.090
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
```



```
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

****************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S31X05.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      769.41   39.09  0.50( 0.41) 0.81    2485.8   13100.00
      2      520.65   70.06  0.50( 0.40) 0.81    3771.2   13000.00
      3      475.41   73.99  0.50( 0.40) 0.81    3796.8   13010.00
    TOTAL AREA(ACRES) =     3796.8

****************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S32X05.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      284.46   41.45  0.50( 0.41) 0.83    1124.2   13200.00
      2      281.20   41.90  0.50( 0.41) 0.83    1127.6   13210.00
    TOTAL AREA(ACRES) =     1127.6

****************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 14.0
----------------------------------------------------------------------------
  >>>>>MEMORY BANK #  2 COPIED ONTO MAIN-STREAM MEMORY<<<<<
============================================================================

  MAIN-STREAM MEMORY DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      284.46   41.45  0.50( 0.41) 0.83    1124.2   13200.00
      2      281.20   41.90  0.50( 0.41) 0.83    1127.6   13210.00
    TOTAL AREA(ACRES) =      1127.6

****************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      284.46   41.45    0.678  0.50( 0.41) 0.83    1124.2   13200.00
      2      281.20   41.90    0.675  0.50( 0.41) 0.83    1127.6   13210.00
  LONGEST FLOWPATH FROM NODE  13200.00 TO NODE  13222.00 =   16821.05 FEET.
```

```
 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM        Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1       769.41   39.09    0.703  0.50( 0.41) 0.81    2485.8   13100.00
     2       520.65   70.06    0.513  0.50( 0.40) 0.81    3771.2   13000.00
     3       475.41   73.99    0.499  0.50( 0.40) 0.81    3796.8   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      1053.87   39.09    0.703  0.50( 0.41) 0.82    3545.8   13100.00
     2      1034.86   41.45    0.678  0.50( 0.41) 0.82    3708.2   13200.00
     3      1027.99   41.90    0.675  0.50( 0.41) 0.82    3730.4   13210.00
     4       627.59   70.06    0.513  0.50( 0.41) 0.81    4898.8   13000.00
     5       568.13   73.99    0.499  0.50( 0.41) 0.81    4924.4   13010.00
   TOTAL AREA(ACRES) =      4924.4

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     1053.87  Tc(MIN.) =   39.087
 EFFECTIVE AREA(ACRES) =   3545.82  AREA-AVERAGED Fm(INCH/HR) =  0.41
 AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.82
 TOTAL AREA(ACRES) =     4924.4
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13222.00 TO NODE  13223.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    427.51  DOWNSTREAM(FEET) =    416.40
 CHANNEL LENGTH THRU SUBAREA(FEET) =   864.00   CHANNEL SLOPE =  0.0129
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 CHANNEL FLOW THRU SUBAREA(CFS) =    1053.87
 FLOW VELOCITY(FEET/SEC.) =   8.77   FLOW DEPTH(FEET) =   6.33
 TRAVEL TIME(MIN.) =   1.64   Tc(MIN.) =   40.73
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610301U.DNA
 MEMORY BANK #  1 DEFINED AS FOLLOWS:
  STREAM        Q      Tc      Fp(Fm)     Ap      Ae     HEADWATER
  NUMBER      (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
     1       21.03   13.41  0.50( 0.50) 1.00      29.3   30100.00
     2       17.48   16.26  0.50( 0.50) 1.00      29.7   30110.00
   TOTAL AREA(ACRES) =       29.7
```



```
****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM        Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      1053.87   40.73    0.684  0.50( 0.41) 0.82    3545.8   13100.00
     2      1034.86   43.11    0.665  0.50( 0.41) 0.82    3708.2   13200.00
     3      1027.99   43.55    0.662  0.50( 0.41) 0.82    3730.4   13210.00
     4       627.59   71.93    0.506  0.50( 0.41) 0.81    4898.8   13000.00
     5       568.13   75.91    0.492  0.50( 0.41) 0.81    4924.4   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM        Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1       21.03   13.41    1.298  0.50( 0.50) 1.00      29.3   30100.00
     2       17.48   16.26    1.155  0.50( 0.50) 1.00      29.7   30110.00
 LONGEST FLOWPATH FROM NODE  30110.00 TO NODE  13223.00 =    2058.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      1074.91   13.41    1.298  0.50( 0.41) 0.82    1197.2   30100.00
     2      1071.36   16.26    1.155  0.50( 0.41) 0.82    1444.9   30110.00
     3      1058.79   40.73    0.684  0.50( 0.41) 0.82    3575.5   13100.00
     4      1039.27   43.11    0.665  0.50( 0.41) 0.82    3737.9   13200.00
     5      1032.30   43.55    0.662  0.50( 0.41) 0.82    3760.0   13210.00
     6       627.75   71.93    0.506  0.50( 0.41) 0.81    4928.5   13000.00
     7       568.13   75.91    0.492  0.50( 0.41) 0.81    4954.1   13010.00
   TOTAL AREA(ACRES) =      4954.1

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     1074.91  Tc(MIN.) =   13.415
 EFFECTIVE AREA(ACRES) =   1197.15  AREA-AVERAGED Fm(INCH/HR) =  0.41
 AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.81
 TOTAL AREA(ACRES) =     4954.1
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13224.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    416.40  DOWNSTREAM(FEET) =    410.60
 CHANNEL LENGTH THRU SUBAREA(FEET) =   408.51   CHANNEL SLOPE =  0.0142
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 CHANNEL FLOW THRU SUBAREA(CFS) =    1074.91
 FLOW VELOCITY(FEET/SEC.) =   9.15   FLOW DEPTH(FEET) =   6.26
 TRAVEL TIME(MIN.) =   0.74   Tc(MIN.) =   14.16
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610302U.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)   (INCH/HR)          (ACRES)    NODE
      1       10.04   11.20  0.50( 0.50) 1.00      11.9   30210.00
      2        9.91   11.52  0.50( 0.50) 1.00      12.0   30200.00
    TOTAL AREA(ACRES) =       12.0

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1074.91   14.16    1.252  0.50( 0.41) 0.82    1197.2   30100.00
      2     1071.36   17.00    1.128  0.50( 0.41) 0.82    1444.9   30110.00
      3     1058.79   41.48    0.678  0.50( 0.41) 0.82    3575.5   13100.00
      4     1039.27   43.86    0.659  0.50( 0.41) 0.82    3737.9   13200.00
      5     1032.30   44.31    0.656  0.50( 0.41) 0.82    3760.0   13210.00
      6      627.75   72.78    0.503  0.50( 0.41) 0.81    4928.5   13000.00
      7      568.13   76.79    0.488  0.50( 0.41) 0.81    4954.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       10.04   11.20    1.436  0.50( 0.50) 1.00      11.9   30210.00
      2        9.91   11.52    1.416  0.50( 0.50) 1.00      12.0   30200.00
  LONGEST FLOWPATH FROM NODE  30200.00 TO NODE  13224.00 =    1209.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1045.54   11.20    1.436  0.50( 0.41) 0.82     958.9   30210.00
      2     1054.38   11.52    1.416  0.50( 0.41) 0.82     986.0   30200.00
      3     1083.05   14.16    1.252  0.50( 0.41) 0.82    1209.2   30100.00
      4     1078.15   17.00    1.128  0.50( 0.41) 0.82    1456.9   30110.00
      5     1060.71   41.48    0.678  0.50( 0.41) 0.82    3587.5   13100.00
      6     1040.99   43.86    0.659  0.50( 0.41) 0.82    3750.0   13200.00
      7     1033.98   44.31    0.656  0.50( 0.41) 0.82    3772.1   13210.00
      8      627.79   72.78    0.503  0.50( 0.41) 0.81    4940.5   13000.00
      9      568.13   76.79    0.488  0.50( 0.41) 0.81    4966.1   13010.00
    TOTAL AREA(ACRES) =      4966.1
```



```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     1083.05  Tc(MIN.) =   14.159
  EFFECTIVE AREA(ACRES) =   1209.18  AREA-AVERAGED Fm(INCH/HR) =  0.41
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.82
  TOTAL AREA(ACRES) =     4966.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13301.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    410.60  DOWNSTREAM(FEET) =    382.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1260.70   CHANNEL SLOPE =  0.0227
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  1.161
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap     SCS
        LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED                -       61.66      0.50     0.998     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.50
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    1101.42
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  10.97
  AVERAGE FLOW DEPTH(FEET) =   5.79   TRAVEL TIME(MIN.) =   1.92
  Tc(MIN.) =   16.08
  SUBAREA AREA(ACRES) =    61.66       SUBAREA RUNOFF(CFS) =   36.74
  EFFECTIVE AREA(ACRES) =   1270.84     AREA-AVERAGED Fm(INCH/HR) =   0.42
  AREA-AVERAGED Fp(INCH/HR) =   0.50  AREA-AVERAGED Ap =   0.83
  TOTAL AREA(ACRES) =     5027.8         PEAK FLOW RATE(CFS) =    1083.05
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  5.75   FLOW VELOCITY(FEET/SEC.) =  10.92
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610303U.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)   (INCH/HR)          (ACRES)    NODE
      1       64.69   24.77  0.50( 0.50) 1.00     166.2   30300.00
    TOTAL AREA(ACRES) =      166.2

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
```

```
 NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
    1     1045.54   13.13    1.316  0.50( 0.42) 0.83    1020.6   30210.00
    2     1054.38   13.45    1.296  0.50( 0.42) 0.83    1047.7   30200.00
    3     1083.05   16.08    1.161  0.50( 0.42) 0.83    1270.8   30100.00
    4     1078.15   18.92    1.059  0.50( 0.41) 0.83    1518.6   30110.00
    5     1060.71   43.41    0.663  0.50( 0.41) 0.82    3649.2   13100.00
    6     1040.99   45.80    0.644  0.50( 0.41) 0.82    3811.6   13200.00
    7     1033.98   46.25    0.640  0.50( 0.41) 0.82    3833.7   13210.00
    8      627.79   74.98    0.495  0.50( 0.41) 0.82    5002.2   13000.00
    9      568.13   79.05    0.480  0.50( 0.41) 0.82    5027.8   13010.00
LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

** MEMORY BANK #  3 CONFLUENCE DATA **
 STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
 NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
    1       64.69   24.77    0.906  0.50( 0.50) 1.00     166.2   30300.00
LONGEST FLOWPATH FROM NODE  30300.00 TO NODE  13301.00 =    6391.00 FEET.

** PEAK FLOW RATE TABLE **
 STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
 NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
    1     1110.24   13.13    1.316  0.50( 0.42) 0.85    1108.7   30210.00
    2     1119.07   13.45    1.296  0.50( 0.42) 0.85    1137.9   30200.00
    3     1147.74   16.08    1.161  0.50( 0.42) 0.84    1378.7   30100.00
    4     1142.85   18.92    1.059  0.50( 0.42) 0.84    1645.5   30110.00
    5     1138.68   24.77    0.906  0.50( 0.42) 0.84    2193.8   30300.00
    6     1086.66   43.41    0.663  0.50( 0.41) 0.83    3815.4   13100.00
    7     1063.88   45.80    0.644  0.50( 0.41) 0.83    3977.8   13200.00
    8     1056.29   46.25    0.640  0.50( 0.41) 0.83    3999.9   13210.00
    9      627.79   74.98    0.495  0.50( 0.41) 0.82    5168.4   13000.00
   10      568.13   79.05    0.480  0.50( 0.41) 0.82    5194.0   13010.00
  TOTAL AREA(ACRES) =      5194.0

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     1147.74  Tc(MIN.) =   16.075
 EFFECTIVE AREA(ACRES) =   1378.71  AREA-AVERAGED Fm(INCH/HR) =  0.42
 AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.84
 TOTAL AREA(ACRES) =     5194.0
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    382.00  DOWNSTREAM(FEET) =    375.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1141.09   CHANNEL SLOPE =  0.0061
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  1.061
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -        9.42      0.50     1.000     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.50
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    1150.12
```



```
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.79
 AVERAGE FLOW DEPTH(FEET) =   7.51   TRAVEL TIME(MIN.) =   2.80
 Tc(MIN.) =   18.87
 SUBAREA AREA(ACRES) =     9.42       SUBAREA RUNOFF(CFS) =    4.75
 EFFECTIVE AREA(ACRES) =   1388.13     AREA-AVERAGED Fm(INCH/HR) =   0.42
 AREA-AVERAGED Fp(INCH/HR) =   0.50  AREA-AVERAGED Ap =   0.84
 TOTAL AREA(ACRES) =     5203.4         PEAK FLOW RATE(CFS) =    1147.74
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  7.51   FLOW VELOCITY(FEET/SEC.) =   6.78
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610214U.DNA
 MEMORY BANK #  1 DEFINED AS FOLLOWS:
  STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
     1       69.43   29.38  0.50( 0.50) 1.00     227.7   21400.00
   TOTAL AREA(ACRES) =      227.7

****************************************************************************
 FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     1110.24   15.95    1.166  0.50( 0.42) 0.85    1118.1   30210.00
     2     1119.07   16.26    1.155  0.50( 0.42) 0.85    1147.3   30200.00
     3     1147.74   18.87    1.061  0.50( 0.42) 0.84    1388.1   30100.00
     4     1142.85   21.73    0.979  0.50( 0.42) 0.84    1654.9   30110.00
     5     1138.68   27.58    0.864  0.50( 0.42) 0.84    2203.2   30300.00
     6     1086.66   46.25    0.640  0.50( 0.41) 0.83    3824.8   13100.00
     7     1063.88   48.65    0.621  0.50( 0.41) 0.83    3987.3   13200.00
     8     1056.29   49.11    0.617  0.50( 0.41) 0.83    4009.4   13210.00
     9      627.79   78.24    0.483  0.50( 0.41) 0.82    5177.8   13000.00
    10      568.13   82.39    0.468  0.50( 0.41) 0.82    5203.4   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1       69.43   29.38    0.839  0.50( 0.50) 1.00     227.7   21400.00
 LONGEST FLOWPATH FROM NODE  21400.00 TO NODE  13302.00 =    6708.00 FEET.
```

```
 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1      1179.67   15.95    1.166  0.50( 0.43) 0.86    1241.7   30210.00
     2      1188.51   16.26    1.155  0.50( 0.43) 0.86    1273.4   30200.00
     3      1217.17   18.87    1.061  0.50( 0.43) 0.86    1534.4   30100.00
     4      1212.28   21.73    0.979  0.50( 0.43) 0.86    1823.3   30110.00
     5      1208.11   27.58    0.864  0.50( 0.43) 0.85    2416.9   30300.00
     6      1203.10   29.38    0.839  0.50( 0.43) 0.85    2587.2   21400.00
     7      1115.37   46.25    0.640  0.50( 0.42) 0.84    4052.5   13100.00
     8      1088.65   48.65    0.621  0.50( 0.42) 0.84    4214.9   13200.00
     9      1080.31   49.11    0.617  0.50( 0.42) 0.84    4237.0   13210.00
    10       627.85   78.24    0.483  0.50( 0.42) 0.83    5405.5   13000.00
    11       568.19   82.39    0.468  0.50( 0.41) 0.83    5431.1   13010.00
   TOTAL AREA(ACRES) =      5431.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     1217.17  Tc(MIN.) =   18.874
  EFFECTIVE AREA(ACRES) =   1534.40  AREA-AVERAGED Fm(INCH/HR) =  0.43
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.86
  TOTAL AREA(ACRES) =     5431.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13303.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    375.00  DOWNSTREAM(FEET) =    355.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2193.96   CHANNEL SLOPE =  0.0091
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  CHANNEL FLOW THRU SUBAREA(CFS) =    1217.17
  FLOW VELOCITY(FEET/SEC.) =   7.98   FLOW DEPTH(FEET) =   7.13
  TRAVEL TIME(MIN.) =   4.58   Tc(MIN.) =   23.45
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610213U.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)  (MIN.)  (INCH/HR)           (ACRES)     NODE
      1       53.89   17.50  0.50( 0.50) 1.00       98.2   21300.00
    TOTAL AREA(ACRES) =       98.2

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  11
```



```
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1      1179.67   20.57    1.006  0.50( 0.43) 0.86    1241.7   30210.00
      2      1188.51   20.87    0.999  0.50( 0.43) 0.86    1273.4   30200.00
      3      1217.17   23.45    0.937  0.50( 0.43) 0.86    1534.4   30100.00
      4      1212.28   26.31    0.882  0.50( 0.43) 0.86    1823.3   30110.00
      5      1208.11   32.16    0.800  0.50( 0.43) 0.85    2416.9   30300.00
      6      1203.10   33.96    0.775  0.50( 0.43) 0.85    2587.2   21400.00
      7      1115.37   50.92    0.604  0.50( 0.42) 0.84    4052.5   13100.00
      8      1088.65   53.36    0.590  0.50( 0.42) 0.84    4214.9   13200.00
      9      1080.31   53.83    0.587  0.50( 0.42) 0.84    4237.0   13210.00
     10       627.85   83.64    0.463  0.50( 0.42) 0.83    5405.5   13000.00
     11       568.19   87.92    0.448  0.50( 0.41) 0.83    5431.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1       53.89   17.50    1.110  0.50( 0.50) 1.00       98.2   21300.00
  LONGEST FLOWPATH FROM NODE  21300.00 TO NODE  13303.00 =    2988.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1      1233.56   17.50    1.110  0.50( 0.44) 0.87    1155.0   21300.00
      2      1224.41   20.57    1.006  0.50( 0.44) 0.87    1340.0   30210.00
      3      1232.62   20.87    0.999  0.50( 0.44) 0.87    1371.6   30200.00
      4      1255.79   23.45    0.937  0.50( 0.43) 0.87    1632.6   30100.00
      5      1246.00   26.31    0.882  0.50( 0.43) 0.86    1921.5   30110.00
      6      1234.59   32.16    0.800  0.50( 0.43) 0.86    2515.2   30300.00
      7      1227.35   33.96    0.775  0.50( 0.43) 0.86    2685.4   21400.00
      8      1124.59   50.92    0.604  0.50( 0.42) 0.84    4150.7   13100.00
      9      1096.57   53.36    0.590  0.50( 0.42) 0.84    4313.1   13200.00
     10      1087.98   53.83    0.587  0.50( 0.42) 0.84    4335.2   13210.00
     11       627.85   83.64    0.463  0.50( 0.42) 0.83    5503.7   13000.00
     12       568.19   87.92    0.448  0.50( 0.42) 0.83    5529.3   13010.00
    TOTAL AREA(ACRES) =      5529.3

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     1255.79  Tc(MIN.) =   23.454
  EFFECTIVE AREA(ACRES) =   1632.62  AREA-AVERAGED Fm(INCH/HR) =  0.43
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.87
  TOTAL AREA(ACRES) =     5529.3
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13304.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    355.00  DOWNSTREAM(FEET) =    350.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.40   CHANNEL SLOPE =  0.0054
```

```
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  0.889
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       13.84      0.50     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.50
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    1258.21
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.62
  AVERAGE FLOW DEPTH(FEET) =   7.96   TRAVEL TIME(MIN.) =   2.33
  Tc(MIN.) =   25.78
  SUBAREA AREA(ACRES) =    13.84       SUBAREA RUNOFF(CFS) =    4.84
  EFFECTIVE AREA(ACRES) =   1646.46     AREA-AVERAGED Fm(INCH/HR) =   0.43
  AREA-AVERAGED Fp(INCH/HR) =   0.50  AREA-AVERAGED Ap =   0.87
  TOTAL AREA(ACRES) =     5543.1         PEAK FLOW RATE(CFS) =    1255.79
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  7.95   FLOW VELOCITY(FEET/SEC.) =   6.62
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 3 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610304U.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)   (INCH/HR)          (ACRES)    NODE
      1       67.91   22.29  0.50( 0.50) 1.00     162.3   30410.00
      2       56.58   28.98  0.50( 0.50) 1.00     182.7   30400.00
    TOTAL AREA(ACRES) =      182.7

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1233.56   19.84    1.026  0.50( 0.44) 0.88    1168.9   21300.00
      2     1224.41   22.91    0.950  0.50( 0.44) 0.87    1353.8   30210.00
      3     1232.62   23.21    0.943  0.50( 0.44) 0.87    1385.4   30200.00
      4     1255.79   25.78    0.889  0.50( 0.43) 0.87    1646.5   30100.00
      5     1246.00   28.64    0.849  0.50( 0.43) 0.86    1935.4   30110.00
      6     1234.59   34.50    0.767  0.50( 0.43) 0.86    2529.0   30300.00
      7     1227.35   36.30    0.742  0.50( 0.43) 0.86    2699.2   21400.00
```



```
      8     1124.59   53.32    0.590  0.50( 0.42) 0.84    4164.5   13100.00
      9     1096.57   55.77    0.575  0.50( 0.42) 0.84    4327.0   13200.00
     10     1087.98   56.25    0.573  0.50( 0.42) 0.84    4349.1   13210.00
     11      627.85   86.41    0.453  0.50( 0.42) 0.83    5517.5   13000.00
     12      568.19   90.76    0.438  0.50( 0.42) 0.83    5543.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       67.91   22.29    0.965  0.50( 0.50) 1.00     162.3   30410.00
      2       56.58   28.98    0.844  0.50( 0.50) 1.00     182.7   30400.00
  LONGEST FLOWPATH FROM NODE  30400.00 TO NODE  13304.00 =    5899.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1301.47   19.84    1.026  0.50( 0.44) 0.89    1313.4   21300.00
      2     1294.18   22.29    0.965  0.50( 0.44) 0.89    1478.6   30410.00
      3     1291.27   22.91    0.950  0.50( 0.44) 0.89    1518.0   30210.00
      4     1298.98   23.21    0.943  0.50( 0.44) 0.89    1550.6   30200.00
      5     1317.78   25.78    0.889  0.50( 0.44) 0.88    1819.4   30100.00
      6     1303.15   28.64    0.849  0.50( 0.44) 0.88    2117.0   30110.00
      7     1301.92   28.98    0.844  0.50( 0.44) 0.88    2152.5   30400.00
      8     1278.46   34.50    0.767  0.50( 0.44) 0.87    2711.7   30300.00
      9     1267.06   36.30    0.742  0.50( 0.43) 0.87    2881.9   21400.00
     10     1139.37   53.32    0.590  0.50( 0.42) 0.85    4347.2   13100.00
     11     1108.94   55.77    0.575  0.50( 0.42) 0.85    4509.7   13200.00
     12     1099.87   56.25    0.573  0.50( 0.42) 0.85    4531.8   13210.00
     13      627.85   86.41    0.453  0.50( 0.42) 0.84    5700.2   13000.00
     14      568.19   90.76    0.438  0.50( 0.42) 0.84    5725.8   13010.00
    TOTAL AREA(ACRES) =      5725.8

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     1317.78  Tc(MIN.) =   25.785
  EFFECTIVE AREA(ACRES) =   1819.44  AREA-AVERAGED Fm(INCH/HR) =  0.44
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.89
  TOTAL AREA(ACRES) =     5725.8
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13305.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    350.00  DOWNSTREAM(FEET) =    315.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2966.27   CHANNEL SLOPE =  0.0118
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  0.812
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       27.39      0.50     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.50
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    1321.63
```

```
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.99
  AVERAGE FLOW DEPTH(FEET) =   7.00   TRAVEL TIME(MIN.) =   5.50
  Tc(MIN.) =   31.29
  SUBAREA AREA(ACRES) =    27.39       SUBAREA RUNOFF(CFS) =    7.69
  EFFECTIVE AREA(ACRES) =   1846.83     AREA-AVERAGED Fm(INCH/HR) =   0.44
  AREA-AVERAGED Fp(INCH/HR) =   0.50  AREA-AVERAGED Ap =   0.88
  TOTAL AREA(ACRES) =     5753.2         PEAK FLOW RATE(CFS) =    1317.78
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  6.99   FLOW VELOCITY(FEET/SEC.) =   8.98
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610305U.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      177.53   27.70  0.50( 0.50) 1.00     537.6   30520.00
      2      173.90   29.63  0.50( 0.50) 1.00     563.9   30540.00
      3      166.25   31.35  0.50( 0.50) 1.00     575.2   30510.00
      4      155.01   33.39  0.50( 0.50) 1.00     582.8   30500.00
    TOTAL AREA(ACRES) =      582.8

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1301.47   25.36    0.895  0.50( 0.45) 0.89    1340.8   21300.00
      2     1294.18   27.81    0.861  0.50( 0.45) 0.89    1506.0   30410.00
      3     1291.27   28.45    0.852  0.50( 0.44) 0.89    1545.4   30210.00
      4     1298.98   28.73    0.848  0.50( 0.44) 0.89    1577.9   30200.00
      5     1317.78   31.29    0.812  0.50( 0.44) 0.88    1846.8   30100.00
      6     1303.15   34.16    0.772  0.50( 0.44) 0.88    2144.4   30110.00
      7     1301.92   34.50    0.767  0.50( 0.44) 0.88    2179.9   30400.00
      8     1278.46   40.05    0.690  0.50( 0.44) 0.87    2739.1   30300.00
      9     1267.06   41.87    0.675  0.50( 0.43) 0.87    2909.3   21400.00
     10     1139.37   59.03    0.556  0.50( 0.43) 0.85    4374.6   13100.00
     11     1108.94   61.52    0.544  0.50( 0.42) 0.85    4537.1   13200.00
     12     1099.87   62.00    0.543  0.50( 0.42) 0.85    4559.2   13210.00
     13      627.85   93.04    0.433  0.50( 0.42) 0.84    5727.6   13000.00
     14      568.19   97.56    0.422  0.50( 0.42) 0.84    5753.2   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.
```



```
  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      177.53   27.70    0.862  0.50( 0.50) 1.00     537.6   30520.00
      2      173.90   29.63    0.835  0.50( 0.50) 1.00     563.9   30540.00
      3      166.25   31.35    0.811  0.50( 0.50) 1.00     575.2   30510.00
      4      155.01   33.39    0.783  0.50( 0.50) 1.00     582.8   30500.00
  LONGEST FLOWPATH FROM NODE  30500.00 TO NODE  13305.00 =    9458.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1478.72   25.36    0.895  0.50( 0.46) 0.92    1833.0   21300.00
      2     1472.07   27.70    0.862  0.50( 0.46) 0.92    2035.6   30520.00
      3     1471.49   27.81    0.861  0.50( 0.46) 0.92    2045.1   30410.00
      4     1467.39   28.45    0.852  0.50( 0.46) 0.92    2093.2   30210.00
      5     1474.56   28.73    0.848  0.50( 0.46) 0.92    2129.7   30200.00
      6     1479.48   29.63    0.835  0.50( 0.46) 0.92    2236.3   30540.00
      7     1484.30   31.29    0.812  0.50( 0.46) 0.91    2421.6   30100.00
      8     1483.72   31.35    0.811  0.50( 0.46) 0.91    2428.3   30510.00
      9     1462.09   33.39    0.783  0.50( 0.45) 0.91    2647.4   30500.00
     10     1452.24   34.16    0.772  0.50( 0.45) 0.90    2727.3   30110.00
     11     1448.36   34.50    0.767  0.50( 0.45) 0.90    2762.7   30400.00
     12     1382.42   40.05    0.690  0.50( 0.45) 0.89    3321.9   30300.00
     13     1363.05   41.87    0.675  0.50( 0.45) 0.89    3492.2   21400.00
     14     1169.91   59.03    0.556  0.50( 0.43) 0.87    4957.5   13100.00
     15     1133.22   61.52    0.544  0.50( 0.43) 0.87    5119.9   13200.00
     16     1123.18   62.00    0.543  0.50( 0.43) 0.87    5142.0   13210.00
     17      627.85   93.04    0.433  0.50( 0.43) 0.85    6310.5   13000.00
     18      568.19   97.56    0.422  0.50( 0.43) 0.85    6336.1   13010.00
    TOTAL AREA(ACRES) =      6336.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     1484.30  Tc(MIN.) =   31.285
  EFFECTIVE AREA(ACRES) =   2421.63  AREA-AVERAGED Fm(INCH/HR) =  0.46
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.92
  TOTAL AREA(ACRES) =     6336.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.20 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    315.00  DOWNSTREAM(FEET) =    284.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1317.91   CHANNEL SLOPE =  0.0235
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  CHANNEL FLOW THRU SUBAREA(CFS) =    1484.30
  FLOW VELOCITY(FEET/SEC.) =  11.98   FLOW DEPTH(FEET) =   6.43
  TRAVEL TIME(MIN.) =   1.83   Tc(MIN.) =   33.12
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  12
----------------------------------------------------------------------------
```

```
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
================================================================================

********************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE = 15.1
--------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
================================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610306U.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)  (MIN.)  (INCH/HR)           (ACRES)     NODE
      1       17.89   21.13  0.50( 0.50) 1.00       40.4   30600.00
    TOTAL AREA(ACRES) =       40.4

********************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  11
--------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
================================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1     1478.72   27.20     0.869  0.50( 0.46) 0.92    1833.0   21300.00
      2     1472.07   29.53     0.837  0.50( 0.46) 0.92    2035.6   30520.00
      3     1471.49   29.65     0.835  0.50( 0.46) 0.92    2045.1   30410.00
      4     1467.39   30.28     0.826  0.50( 0.46) 0.92    2093.2   30210.00
      5     1474.56   30.57     0.822  0.50( 0.46) 0.92    2129.7   30200.00
      6     1479.48   31.47     0.809  0.50( 0.46) 0.92    2236.3   30540.00
      7     1484.30   33.12     0.786  0.50( 0.46) 0.91    2421.6   30100.00
      8     1483.72   33.18     0.785  0.50( 0.46) 0.91    2428.3   30510.00
      9     1462.09   35.23     0.757  0.50( 0.45) 0.91    2647.4   30500.00
     10     1452.24   36.00     0.746  0.50( 0.45) 0.90    2727.3   30110.00
     11     1448.36   36.35     0.741  0.50( 0.45) 0.90    2762.7   30400.00
     12     1382.42   41.92     0.675  0.50( 0.45) 0.89    3321.9   30300.00
     13     1363.05   43.74     0.660  0.50( 0.45) 0.89    3492.2   21400.00
     14     1169.91   60.97     0.546  0.50( 0.43) 0.87    4957.5   13100.00
     15     1133.22   63.48     0.537  0.50( 0.43) 0.87    5119.9   13200.00
     16     1123.18   63.97     0.535  0.50( 0.43) 0.87    5142.0   13210.00
     17      627.85   95.32     0.428  0.50( 0.43) 0.85    6310.5   13000.00
     18      568.19   99.89     0.417  0.50( 0.43) 0.85    6336.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1       17.89   21.13     0.993  0.50( 0.50) 1.00       40.4   30600.00
  LONGEST FLOWPATH FROM NODE  30600.00 TO NODE  13305.20 =    2948.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1     1496.61   21.13     0.993  0.50( 0.46) 0.92    1464.6   30600.00
      2     1492.12   27.20     0.869  0.50( 0.46) 0.92    1873.4   21300.00
      3     1484.28   29.53     0.837  0.50( 0.46) 0.92    2076.0   30520.00
      4     1483.65   29.65     0.835  0.50( 0.46) 0.92    2085.5   30410.00
      5     1479.22   30.28     0.826  0.50( 0.46) 0.92    2133.6   30210.00
```



```
      6     1486.24   30.57     0.822  0.50( 0.46) 0.92    2170.0   30200.00
      7     1490.71   31.47     0.809  0.50( 0.46) 0.92    2276.7   30540.00
      8     1494.69   33.12     0.786  0.50( 0.46) 0.91    2462.0   30100.00
      9     1494.08   33.18     0.785  0.50( 0.46) 0.91    2468.7   30510.00
     10     1471.41   35.23     0.757  0.50( 0.45) 0.91    2687.8   30500.00
     11     1461.17   36.00     0.746  0.50( 0.45) 0.91    2767.6   30110.00
     12     1457.10   36.35     0.741  0.50( 0.45) 0.90    2803.1   30400.00
     13     1388.76   41.92     0.675  0.50( 0.45) 0.89    3362.3   30300.00
     14     1368.86   43.74     0.660  0.50( 0.45) 0.89    3532.5   21400.00
     15     1171.59   60.97     0.546  0.50( 0.43) 0.87    4997.8   13100.00
     16     1134.57   63.48     0.537  0.50( 0.43) 0.87    5160.3   13200.00
     17     1124.46   63.97     0.535  0.50( 0.43) 0.87    5182.4   13210.00
     18      627.85   95.32     0.428  0.50( 0.43) 0.86    6350.8   13000.00
     19      568.19   99.89     0.417  0.50( 0.43) 0.85    6376.4   13010.00
   TOTAL AREA(ACRES) =      6376.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     1496.61  Tc(MIN.) =   21.132
  EFFECTIVE AREA(ACRES) =   1464.62  AREA-AVERAGED Fm(INCH/HR) =  0.46
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.85
  TOTAL AREA(ACRES) =     6376.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.40 IS CODE =  51
--------------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    284.00  DOWNSTREAM(FEET) =    274.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   826.37   CHANNEL SLOPE =  0.0121
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  CHANNEL FLOW THRU SUBAREA(CFS) =    1496.61
  FLOW VELOCITY(FEET/SEC.) =   9.35   FLOW DEPTH(FEET) =   7.30
  TRAVEL TIME(MIN.) =   1.47   Tc(MIN.) =   22.61
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE =  12
--------------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
================================================================================

********************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE = 15.1
--------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
================================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610307U.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)  (MIN.)  (INCH/HR)           (ACRES)     NODE
      1       43.38   21.17  0.50( 0.50) 1.00       98.0   30700.00
    TOTAL AREA(ACRES) =       98.0

********************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE =  11
```

```
--------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
================================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1496.61   22.61    0.957  0.50( 0.46) 0.92    1464.6   30600.00
      2     1492.12   28.67    0.849  0.50( 0.46) 0.92    1873.4   21300.00
      3     1484.28   31.01    0.816  0.50( 0.46) 0.92    2076.0   30520.00
      4     1483.65   31.13    0.814  0.50( 0.46) 0.92    2085.5   30410.00
      5     1479.22   31.76    0.805  0.50( 0.46) 0.92    2133.6   30210.00
      6     1486.24   32.05    0.801  0.50( 0.46) 0.92    2170.0   30200.00
      7     1490.71   32.94    0.789  0.50( 0.46) 0.92    2276.7   30540.00
      8     1494.69   34.59    0.766  0.50( 0.46) 0.91    2462.0   30100.00
      9     1494.08   34.65    0.765  0.50( 0.46) 0.91    2468.7   30510.00
     10     1471.41   36.71    0.736  0.50( 0.45) 0.91    2687.8   30500.00
     11     1461.17   37.48    0.725  0.50( 0.45) 0.91    2767.6   30110.00
     12     1457.10   37.83    0.720  0.50( 0.45) 0.90    2803.1   30400.00
     13     1388.76   43.42    0.663  0.50( 0.45) 0.89    3362.3   30300.00
     14     1368.86   45.24    0.648  0.50( 0.45) 0.89    3532.5   21400.00
     15     1171.59   62.54    0.541  0.50( 0.43) 0.87    4997.8   13100.00
     16     1134.57   65.06    0.531  0.50( 0.43) 0.87    5160.3   13200.00
     17     1124.46   65.55    0.530  0.50( 0.43) 0.87    5182.4   13210.00
     18      627.85   97.15    0.423  0.50( 0.43) 0.86    6350.8   13000.00
     19      568.19  101.76    0.413  0.50( 0.43) 0.85    6376.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       43.38   21.17    0.992  0.50( 0.50) 1.00      98.0   30700.00
  LONGEST FLOWPATH FROM NODE  30700.00 TO NODE  13305.40 =    5192.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1539.98   21.17    0.992  0.50( 0.46) 0.93    1469.4   30700.00
      2     1536.94   22.61    0.957  0.50( 0.46) 0.93    1562.6   30600.00
      3     1522.85   28.67    0.849  0.50( 0.46) 0.93    1971.4   21300.00
      4     1512.12   31.01    0.816  0.50( 0.46) 0.92    2174.0   30520.00
      5     1511.35   31.13    0.814  0.50( 0.46) 0.92    2183.5   30410.00
      6     1506.14   31.76    0.805  0.50( 0.46) 0.92    2231.6   30210.00
      7     1512.81   32.05    0.801  0.50( 0.46) 0.92    2268.0   30200.00
      8     1516.17   32.94    0.789  0.50( 0.46) 0.92    2374.7   30540.00
      9     1518.11   34.59    0.766  0.50( 0.46) 0.92    2560.0   30100.00
     10     1517.42   34.65    0.765  0.50( 0.46) 0.92    2566.7   30510.00
     11     1492.22   36.71    0.736  0.50( 0.46) 0.91    2785.8   30500.00
     12     1481.02   37.48    0.725  0.50( 0.45) 0.91    2865.6   30110.00
     13     1476.53   37.83    0.720  0.50( 0.45) 0.91    2901.1   30400.00
     14     1403.09   43.42    0.663  0.50( 0.45) 0.90    3460.3   30300.00
     15     1381.90   45.24    0.648  0.50( 0.45) 0.90    3630.5   21400.00
     16     1175.16   62.54    0.541  0.50( 0.44) 0.87    5095.8   13100.00
     17     1137.32   65.06    0.531  0.50( 0.43) 0.87    5258.3   13200.00
     18     1127.06   65.55    0.530  0.50( 0.43) 0.87    5280.4   13210.00
     19      627.85   97.15    0.423  0.50( 0.43) 0.86    6448.8   13000.00
     20      568.19  101.76    0.413  0.50( 0.43) 0.86    6474.4   13010.00
    TOTAL AREA(ACRES) =      6474.4
```



```
  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     1539.98  Tc(MIN.) =   21.167
  EFFECTIVE AREA(ACRES) =   1469.44  AREA-AVERAGED Fm(INCH/HR) =  0.46
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.86
  TOTAL AREA(ACRES) =     6474.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.60 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    274.00  DOWNSTREAM(FEET) =    258.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   733.85   CHANNEL SLOPE =  0.0218
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  CHANNEL FLOW THRU SUBAREA(CFS) =    1539.98
  FLOW VELOCITY(FEET/SEC.) =  11.75   FLOW DEPTH(FEET) =   6.61
  TRAVEL TIME(MIN.) =   1.04   Tc(MIN.) =   22.21
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.60 =   44764.55 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610308U.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       30.32   20.01  0.50( 0.50) 1.00      64.8   30800.00
    TOTAL AREA(ACRES) =       64.8

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1539.98   22.21    0.967  0.50( 0.46) 0.93    1469.4   30700.00
      2     1536.94   23.65    0.932  0.50( 0.46) 0.93    1562.6   30600.00
      3     1522.85   29.72    0.834  0.50( 0.46) 0.93    1971.4   21300.00
      4     1512.12   32.05    0.801  0.50( 0.46) 0.92    2174.0   30520.00
      5     1511.35   32.17    0.800  0.50( 0.46) 0.92    2183.5   30410.00
      6     1506.14   32.81    0.791  0.50( 0.46) 0.92    2231.6   30210.00
      7     1512.81   33.09    0.787  0.50( 0.46) 0.92    2268.0   30200.00
      8     1516.17   33.98    0.774  0.50( 0.46) 0.92    2374.7   30540.00
```

```
      9     1518.11   35.64    0.751  0.50( 0.46) 0.92    2560.0   30100.00
     10     1517.42   35.70    0.750  0.50( 0.46) 0.92    2566.7   30510.00
     11     1492.22   37.76    0.721  0.50( 0.46) 0.91    2785.8   30500.00
     12     1481.02   38.53    0.711  0.50( 0.45) 0.91    2865.6   30110.00
     13     1476.53   38.88    0.706  0.50( 0.45) 0.91    2901.1   30400.00
     14     1403.09   44.48    0.654  0.50( 0.45) 0.90    3460.3   30300.00
     15     1381.90   46.31    0.639  0.50( 0.45) 0.90    3630.5   21400.00
     16     1175.16   63.65    0.537  0.50( 0.44) 0.87    5095.8   13100.00
     17     1137.32   66.18    0.527  0.50( 0.43) 0.87    5258.3   13200.00
     18     1127.06   66.67    0.526  0.50( 0.43) 0.87    5280.4   13210.00
     19      627.85   98.45    0.420  0.50( 0.43) 0.86    6448.8   13000.00
     20      568.19  103.10    0.409  0.50( 0.43) 0.86    6474.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.60 =   44764.55 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       30.32   20.01    1.020  0.50( 0.50) 1.00      64.8   30800.00
  LONGEST FLOWPATH FROM NODE  30800.00 TO NODE  13305.60 =    4165.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1563.40   20.01    1.020  0.50( 0.47) 0.93    1388.5   30800.00
      2     1567.22   22.21    0.967  0.50( 0.47) 0.93    1534.3   30700.00
      3     1562.16   23.65    0.932  0.50( 0.47) 0.93    1627.5   30600.00
      4     1542.32   29.72    0.834  0.50( 0.46) 0.93    2036.2   21300.00
      5     1529.69   32.05    0.801  0.50( 0.46) 0.93    2238.8   30520.00
      6     1528.82   32.17    0.800  0.50( 0.46) 0.93    2248.3   30410.00
      7     1523.09   32.81    0.791  0.50( 0.46) 0.93    2296.4   30210.00
      8     1529.52   33.09    0.787  0.50( 0.46) 0.92    2332.8   30200.00
      9     1532.16   33.98    0.774  0.50( 0.46) 0.92    2439.5   30540.00
     10     1532.75   35.64    0.751  0.50( 0.46) 0.92    2624.8   30100.00
     11     1532.01   35.70    0.750  0.50( 0.46) 0.92    2631.5   30510.00
     12     1505.13   37.76    0.721  0.50( 0.46) 0.91    2850.6   30500.00
     13     1493.29   38.53    0.711  0.50( 0.46) 0.91    2930.4   30110.00
     14     1488.51   38.88    0.706  0.50( 0.46) 0.91    2965.9   30400.00
     15     1412.07   44.48    0.654  0.50( 0.45) 0.90    3525.1   30300.00
     16     1390.03   46.31    0.639  0.50( 0.45) 0.90    3695.3   21400.00
     17     1177.29   63.65    0.537  0.50( 0.44) 0.87    5160.7   13100.00
     18     1138.91   66.18    0.527  0.50( 0.44) 0.87    5323.1   13200.00
     19     1128.53   66.67    0.526  0.50( 0.44) 0.87    5345.2   13210.00
     20      627.85   98.45    0.420  0.50( 0.43) 0.86    6513.6   13000.00
     21      568.19  103.10    0.409  0.50( 0.43) 0.86    6539.3   13010.00
    TOTAL AREA(ACRES) =      6539.3

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     1567.22  Tc(MIN.) =   22.208
  EFFECTIVE AREA(ACRES) =   1534.27  AREA-AVERAGED Fm(INCH/HR) =  0.47
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.93
  TOTAL AREA(ACRES) =     6539.3
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.60 =   44764.55 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.80 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
```



```
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    258.00  DOWNSTREAM(FEET) =    254.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   947.16   CHANNEL SLOPE =  0.0042
  CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
  CHANNEL FLOW THRU SUBAREA(CFS) =    1567.22
  FLOW VELOCITY(FEET/SEC.) =   6.38   FLOW DEPTH(FEET) =   9.05
  TRAVEL TIME(MIN.) =   2.48   Tc(MIN.) =   24.68
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.80 =   45711.71 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.80 TO NODE  13305.80 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.80 TO NODE  13305.80 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610309U.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)   (INCH/HR)          (ACRES)    NODE
      1       32.42   19.25  0.50( 0.50) 1.00      65.9   30900.00
      2       32.35   19.29  0.50( 0.50) 1.00      65.9   30910.00
    TOTAL AREA(ACRES) =       65.9

****************************************************************************
  FLOW PROCESS FROM NODE  13305.80 TO NODE  13305.80 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1563.40   22.48    0.960  0.50( 0.47) 0.93    1388.5   30800.00
      2     1567.22   24.68    0.908  0.50( 0.47) 0.93    1534.3   30700.00
      3     1562.16   26.12    0.884  0.50( 0.47) 0.93    1627.5   30600.00
      4     1542.32   32.20    0.799  0.50( 0.46) 0.93    2036.2   21300.00
      5     1529.69   34.54    0.766  0.50( 0.46) 0.93    2238.8   30520.00
      6     1528.82   34.66    0.765  0.50( 0.46) 0.93    2248.3   30410.00
      7     1523.09   35.30    0.756  0.50( 0.46) 0.93    2296.4   30210.00
      8     1529.52   35.58    0.752  0.50( 0.46) 0.92    2332.8   30200.00
      9     1532.16   36.47    0.739  0.50( 0.46) 0.92    2439.5   30540.00
     10     1532.75   38.12    0.716  0.50( 0.46) 0.92    2624.8   30100.00
     11     1532.01   38.19    0.715  0.50( 0.46) 0.92    2631.5   30510.00
     12     1505.13   40.26    0.688  0.50( 0.46) 0.91    2850.6   30500.00
     13     1493.29   41.04    0.682  0.50( 0.46) 0.91    2930.4   30110.00
     14     1488.51   41.39    0.679  0.50( 0.46) 0.91    2965.9   30400.00
     15     1412.07   47.02    0.634  0.50( 0.45) 0.90    3525.1   30300.00
     16     1390.03   48.87    0.619  0.50( 0.45) 0.90    3695.3   21400.00
     17     1177.29   66.31    0.527  0.50( 0.44) 0.87    5160.7   13100.00
     18     1138.91   68.86    0.518  0.50( 0.44) 0.87    5323.1   13200.00
     19     1128.53   69.36    0.516  0.50( 0.44) 0.87    5345.2   13210.00
     20      627.85  101.56    0.413  0.50( 0.43) 0.86    6513.6   13000.00
```

```
    21      568.19  106.29    0.402  0.50( 0.43) 0.86    6539.3   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.80 =   45711.71 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM        Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1       32.42   19.25    1.047  0.50( 0.50) 1.00      65.9   30900.00
     2       32.35   19.29    1.046  0.50( 0.50) 1.00      65.9   30910.00
 LONGEST FLOWPATH FROM NODE  30900.00 TO NODE  13305.80 =    3403.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     1595.82   19.25    1.047  0.50( 0.47) 0.93    1254.6   30900.00
     2     1595.76   19.29    1.046  0.50( 0.47) 0.93    1257.2   30910.00
     3     1590.70   22.48    0.960  0.50( 0.47) 0.93    1454.5   30800.00
     4     1591.38   24.68    0.908  0.50( 0.47) 0.93    1600.2   30700.00
     5     1584.94   26.12    0.884  0.50( 0.47) 0.93    1693.4   30600.00
     6     1560.06   32.20    0.799  0.50( 0.47) 0.93    2102.1   21300.00
     7     1545.48   34.54    0.766  0.50( 0.46) 0.93    2304.7   30520.00
     8     1544.51   34.66    0.765  0.50( 0.46) 0.93    2314.2   30410.00
     9     1538.25   35.30    0.756  0.50( 0.46) 0.93    2362.3   30210.00
    10     1544.45   35.58    0.752  0.50( 0.46) 0.93    2398.8   30200.00
    11     1546.34   36.47    0.739  0.50( 0.46) 0.92    2505.4   30540.00
    12     1545.57   38.12    0.716  0.50( 0.46) 0.92    2690.7   30100.00
    13     1544.77   38.19    0.715  0.50( 0.46) 0.92    2697.4   30510.00
    14     1516.26   40.26    0.688  0.50( 0.46) 0.91    2916.5   30500.00
    15     1504.06   41.04    0.682  0.50( 0.46) 0.91    2996.4   30110.00
    16     1499.11   41.39    0.679  0.50( 0.46) 0.91    3031.8   30400.00
    17     1419.99   47.02    0.634  0.50( 0.45) 0.90    3591.0   30300.00
    18     1397.08   48.87    0.619  0.50( 0.45) 0.90    3761.3   21400.00
    19     1178.87   66.31    0.527  0.50( 0.44) 0.87    5226.6   13100.00
    20     1139.93   68.86    0.518  0.50( 0.44) 0.87    5389.0   13200.00
    21     1129.45   69.36    0.516  0.50( 0.44) 0.87    5411.1   13210.00
    22      627.85  101.56    0.413  0.50( 0.43) 0.86    6579.6   13000.00
    23      568.19  106.29    0.402  0.50( 0.43) 0.86    6605.2   13010.00
   TOTAL AREA(ACRES) =      6605.2

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     1595.82  Tc(MIN.) =   19.248
 EFFECTIVE AREA(ACRES) =   1254.63  AREA-AVERAGED Fm(INCH/HR) =  0.47
 AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.86
 TOTAL AREA(ACRES) =     6605.2
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.80 =   45711.71 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13305.80 TO NODE  13306.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    254.00  DOWNSTREAM(FEET) =    245.50
 CHANNEL LENGTH THRU SUBAREA(FEET) =   583.12   CHANNEL SLOPE =  0.0146
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  1.015
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
```



```
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       68.77      0.50      0.998     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.50
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    1611.79
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  10.22
 AVERAGE FLOW DEPTH(FEET) =   7.25   TRAVEL TIME(MIN.) =   0.95
 Tc(MIN.) =   20.20
 SUBAREA AREA(ACRES) =    68.77       SUBAREA RUNOFF(CFS) =   31.94
 EFFECTIVE AREA(ACRES) =   1323.40     AREA-AVERAGED Fm(INCH/HR) =   0.47
 AREA-AVERAGED Fp(INCH/HR) =   0.50  AREA-AVERAGED Ap =   0.94
 TOTAL AREA(ACRES) =     6673.9         PEAK FLOW RATE(CFS) =    1595.82
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  7.22   FLOW VELOCITY(FEET/SEC.) =  10.20
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13306.00 =   46294.83 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13306.00 TO NODE  13307.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    245.50  DOWNSTREAM(FEET) =    220.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1543.21   CHANNEL SLOPE =  0.0165
 CHANNEL BASE(FEET) =    0.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  20.00
 CHANNEL FLOW THRU SUBAREA(CFS) =    1595.82
 FLOW VELOCITY(FEET/SEC.) =  10.69   FLOW DEPTH(FEET) =   7.05
 TRAVEL TIME(MIN.) =   2.41   Tc(MIN.) =   22.61
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610310U.DNA
 MEMORY BANK #  2 DEFINED AS FOLLOWS:
  STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
     1       34.44   25.73  0.50( 0.50) 1.00      97.9   31000.00
   TOTAL AREA(ACRES) =       97.9

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
```

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	1595.82	22.61	0.957	0.50(0.47)	0.94	1323.4	30900.00
2	1595.76	22.65	0.956	0.50(0.47)	0.94	1326.0	30910.00
3	1590.70	25.84	0.888	0.50(0.47)	0.94	1523.2	30800.00
4	1591.38	28.04	0.857	0.50(0.47)	0.94	1669.0	30700.00
5	1584.94	29.49	0.837	0.50(0.47)	0.94	1762.1	30600.00
6	1560.06	35.58	0.752	0.50(0.47)	0.93	2170.9	21300.00
7	1545.48	37.93	0.719	0.50(0.47)	0.93	2373.5	30520.00
8	1544.51	38.05	0.717	0.50(0.47)	0.93	2383.0	30410.00
9	1538.25	38.69	0.708	0.50(0.46)	0.93	2431.1	30210.00
10	1544.45	38.97	0.704	0.50(0.46)	0.93	2467.5	30200.00
11	1546.34	39.86	0.692	0.50(0.46)	0.93	2574.2	30540.00
12	1545.57	41.51	0.678	0.50(0.46)	0.92	2759.5	30100.00
13	1544.77	41.57	0.677	0.50(0.46)	0.92	2766.2	30510.00
14	1516.26	43.66	0.661	0.50(0.46)	0.92	2985.3	30500.00
15	1504.06	44.45	0.654	0.50(0.46)	0.91	3065.1	30110.00
16	1499.11	44.80	0.652	0.50(0.46)	0.91	3100.6	30400.00
17	1419.99	50.48	0.607	0.50(0.45)	0.90	3659.8	30300.00
18	1397.08	52.34	0.596	0.50(0.45)	0.90	3830.0	21400.00
19	1178.87	69.94	0.514	0.50(0.44)	0.88	5295.3	13100.00
20	1139.93	72.52	0.504	0.50(0.44)	0.87	5457.8	13200.00
21	1129.45	73.02	0.502	0.50(0.44)	0.87	5479.9	13210.00
22	627.85	105.80	0.403	0.50(0.43)	0.86	6648.3	13000.00
23	568.19	110.64	0.392	0.50(0.43)	0.86	6673.9	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13307.00 = 47838.04 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	34.44	25.73	0.890	0.50(0.50)	1.00	97.9	31000.00

LONGEST FLOWPATH FROM NODE 31000.00 TO NODE 13307.00 = 5162.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	1630.26	22.61	0.957	0.50(0.47)	0.94	1409.4	30900.00
2	1630.19	22.65	0.956	0.50(0.47)	0.94	1412.1	30910.00
3	1625.33	25.73	0.890	0.50(0.47)	0.94	1613.8	31000.00
4	1624.99	25.84	0.888	0.50(0.47)	0.94	1621.1	30800.00
5	1622.96	28.04	0.857	0.50(0.47)	0.94	1766.8	30700.00
6	1614.74	29.49	0.837	0.50(0.47)	0.94	1860.0	30600.00
7	1582.34	35.58	0.752	0.50(0.47)	0.94	2268.8	21300.00
8	1564.86	37.93	0.719	0.50(0.47)	0.93	2471.4	30520.00
9	1563.74	38.05	0.717	0.50(0.47)	0.93	2480.9	30410.00
10	1556.69	38.69	0.708	0.50(0.47)	0.93	2529.0	30210.00
11	1562.55	38.97	0.704	0.50(0.47)	0.93	2565.4	30200.00
12	1563.35	39.86	0.692	0.50(0.46)	0.93	2672.1	30540.00
13	1561.33	41.51	0.678	0.50(0.46)	0.92	2857.4	30100.00
14	1560.50	41.57	0.677	0.50(0.46)	0.92	2864.1	30510.00
15	1530.51	43.66	0.661	0.50(0.46)	0.92	3083.2	30500.00
16	1517.76	44.45	0.654	0.50(0.46)	0.92	3163.0	30110.00
17	1512.56	44.80	0.652	0.50(0.46)	0.92	3198.5	30400.00
18	1429.52	50.48	0.607	0.50(0.45)	0.91	3757.7	30300.00
19	1405.63	52.34	0.596	0.50(0.45)	0.90	3927.9	21400.00
20	1180.16	69.94	0.514	0.50(0.44)	0.88	5393.2	13100.00
21	1140.39	72.52	0.504	0.50(0.44)	0.88	5555.7	13200.00
22	1129.74	73.02	0.502	0.50(0.44)	0.88	5577.8	13210.00

23	627.94	105.80	0.403	0.50(0.43)	0.86	6746.2	13000.00
24	568.28	110.64	0.392	0.50(0.43)	0.86	6771.8	13010.00

TOTAL AREA(ACRES) = 6771.8

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 1630.26 Tc(MIN.) = 22.605
EFFECTIVE AREA(ACRES) = 1409.41 AREA-AVERAGED Fm(INCH/HR) = 0.47
AREA-AVERAGED Fp(INCH/HR) = 0.50 AREA-AVERAGED Ap = 0.94
TOTAL AREA(ACRES) = 6771.8
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13307.00 = 47838.04 FEET.

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13308.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 220.00 DOWNSTREAM(FEET) = 215.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 925.62 CHANNEL SLOPE = 0.0054
CHANNEL BASE(FEET) = 0.00 "Z" FACTOR = 3.000
MANNING'S FACTOR = 0.040 MAXIMUM DEPTH(FEET) = 20.00
CHANNEL FLOW THRU SUBAREA(CFS) = 1630.26
FLOW VELOCITY(FEET/SEC.) = 7.06 FLOW DEPTH(FEET) = 8.77
TRAVEL TIME(MIN.) = 2.18 Tc(MIN.) = 24.79
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13308.00 = 48763.66 FEET.

****
FLOW PROCESS FROM NODE 13308.00 TO NODE 13308.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<
==========

****
FLOW PROCESS FROM NODE 13308.00 TO NODE 13308.00 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 3 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610212U.DNA
MEMORY BANK # 3 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	61.45	45.13	0.50(0.50)	1.00	342.8	21200.00

TOTAL AREA(ACRES) = 342.8

****
FLOW PROCESS FROM NODE 13308.00 TO NODE 13308.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	1630.26	24.79	0.905	0.50(0.47)	0.94	1409.4	30900.00
2	1630.19	24.83	0.904	0.50(0.47)	0.94	1412.1	30910.00
3	1625.33	27.91	0.859	0.50(0.47)	0.94	1613.8	31000.00
4	1624.99	28.03	0.858	0.50(0.47)	0.94	1621.1	30800.00
5	1622.96	30.23	0.827	0.50(0.47)	0.94	1766.8	30700.00

```
     6     1614.74   31.68    0.807  0.50( 0.47) 0.94    1860.0   30600.00
     7     1582.34   37.78    0.721  0.50( 0.47) 0.94    2268.8   21300.00
     8     1564.86   40.14    0.689  0.50( 0.47) 0.93    2471.4   30520.00
     9     1563.74   40.26    0.688  0.50( 0.47) 0.93    2480.9   30410.00
    10     1556.69   40.90    0.683  0.50( 0.47) 0.93    2529.0   30210.00
    11     1562.55   41.18    0.681  0.50( 0.47) 0.93    2565.4   30200.00
    12     1563.35   42.06    0.673  0.50( 0.46) 0.93    2672.1   30540.00
    13     1561.33   43.72    0.660  0.50( 0.46) 0.92    2857.4   30100.00
    14     1560.50   43.78    0.660  0.50( 0.46) 0.92    2864.1   30510.00
    15     1530.51   45.88    0.643  0.50( 0.46) 0.92    3083.2   30500.00
    16     1517.76   46.67    0.637  0.50( 0.46) 0.92    3163.0   30110.00
    17     1512.56   47.03    0.634  0.50( 0.46) 0.92    3198.5   30400.00
    18     1429.52   52.74    0.594  0.50( 0.45) 0.91    3757.7   30300.00
    19     1405.63   54.60    0.582  0.50( 0.45) 0.90    3927.9   21400.00
    20     1180.16   72.30    0.505  0.50( 0.44) 0.88    5393.2   13100.00
    21     1140.39   74.90    0.495  0.50( 0.44) 0.88    5555.7   13200.00
    22     1129.74   75.41    0.493  0.50( 0.44) 0.88    5577.8   13210.00
    23      627.94  108.57    0.397  0.50( 0.43) 0.86    6746.2   13000.00
    24      568.28  113.48    0.385  0.50( 0.43) 0.86    6771.8   13010.00
LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

** MEMORY BANK #  3 CONFLUENCE DATA **
 STREAM       Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
 NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
    1       61.45   45.13    0.649  0.50( 0.50) 1.00     342.8   21200.00
LONGEST FLOWPATH FROM NODE  21200.00 TO NODE  13308.00 =   11049.00 FEET.

** PEAK FLOW RATE TABLE **
 STREAM       Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
 NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
    1     1691.70   24.79    0.905  0.50( 0.47) 0.95    1597.7   30900.00
    2     1691.64   24.83    0.904  0.50( 0.47) 0.95    1600.7   30910.00
    3     1686.77   27.91    0.859  0.50( 0.47) 0.95    1825.8   31000.00
    4     1686.44   28.03    0.858  0.50( 0.47) 0.95    1834.0   30800.00
    5     1684.41   30.23    0.827  0.50( 0.47) 0.95    1996.4   30700.00
    6     1676.19   31.68    0.807  0.50( 0.47) 0.95    2100.6   30600.00
    7     1643.79   37.78    0.721  0.50( 0.47) 0.94    2555.7   21300.00
    8     1626.31   40.14    0.689  0.50( 0.47) 0.94    2776.2   30520.00
    9     1625.19   40.26    0.688  0.50( 0.47) 0.94    2786.6   30410.00
   10     1618.14   40.90    0.683  0.50( 0.47) 0.94    2839.6   30210.00
   11     1624.00   41.18    0.681  0.50( 0.47) 0.94    2878.2   30200.00
   12     1624.80   42.06    0.673  0.50( 0.47) 0.94    2991.5   30540.00
   13     1622.78   43.72    0.660  0.50( 0.47) 0.93    3189.4   30100.00
   14     1621.94   43.78    0.660  0.50( 0.47) 0.93    3196.6   30510.00
   15     1602.64   45.13    0.649  0.50( 0.46) 0.93    3347.9   21200.00
   16     1589.49   45.88    0.643  0.50( 0.46) 0.93    3425.9   30500.00
   17     1574.12   46.67    0.637  0.50( 0.46) 0.93    3505.8   30110.00
   18     1567.75   47.03    0.634  0.50( 0.46) 0.92    3541.2   30400.00
   19     1468.09   52.74    0.594  0.50( 0.46) 0.91    4100.5   30300.00
   20     1439.57   54.60    0.582  0.50( 0.46) 0.91    4270.7   21400.00
   21     1182.09   72.30    0.505  0.50( 0.44) 0.89    5736.0   13100.00
   22     1140.39   74.90    0.495  0.50( 0.44) 0.88    5898.4   13200.00
   23     1129.74   75.41    0.493  0.50( 0.44) 0.88    5920.5   13210.00
   24      627.94  108.57    0.397  0.50( 0.44) 0.87    7089.0   13000.00
   25      568.28  113.48    0.385  0.50( 0.44) 0.87    7114.6   13010.00
  TOTAL AREA(ACRES) =      7114.6

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
```



```
  PEAK FLOW RATE(CFS) =     1691.70  Tc(MIN.) =   24.789
  EFFECTIVE AREA(ACRES) =   1597.68  AREA-AVERAGED Fm(INCH/HR) =  0.47
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap =  0.95
  TOTAL AREA(ACRES) =     7114.6
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =     7114.6  TC(MIN.) =     24.79
  EFFECTIVE AREA(ACRES) =   1597.68  AREA-AVERAGED Fm(INCH/HR)=  0.47
  AREA-AVERAGED Fp(INCH/HR) =  0.50  AREA-AVERAGED Ap = 0.949
  PEAK FLOW RATE(CFS)   =    1691.70

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap      Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1691.70   24.79    0.905  0.50( 0.47) 0.95    1597.7   30900.00
      2     1691.64   24.83    0.904  0.50( 0.47) 0.95    1600.7   30910.00
      3     1686.77   27.91    0.859  0.50( 0.47) 0.95    1825.8   31000.00
      4     1686.44   28.03    0.858  0.50( 0.47) 0.95    1834.0   30800.00
      5     1684.41   30.23    0.827  0.50( 0.47) 0.95    1996.4   30700.00
      6     1676.19   31.68    0.807  0.50( 0.47) 0.95    2100.6   30600.00
      7     1643.79   37.78    0.721  0.50( 0.47) 0.94    2555.7   21300.00
      8     1626.31   40.14    0.689  0.50( 0.47) 0.94    2776.2   30520.00
      9     1625.19   40.26    0.688  0.50( 0.47) 0.94    2786.6   30410.00
     10     1618.14   40.90    0.683  0.50( 0.47) 0.94    2839.6   30210.00
     11     1624.00   41.18    0.681  0.50( 0.47) 0.94    2878.2   30200.00
     12     1624.80   42.06    0.673  0.50( 0.47) 0.94    2991.5   30540.00
     13     1622.78   43.72    0.660  0.50( 0.47) 0.93    3189.4   30100.00
     14     1621.94   43.78    0.660  0.50( 0.47) 0.93    3196.6   30510.00
     15     1602.64   45.13    0.649  0.50( 0.46) 0.93    3347.9   21200.00
     16     1589.49   45.88    0.643  0.50( 0.46) 0.93    3425.9   30500.00
     17     1574.12   46.67    0.637  0.50( 0.46) 0.93    3505.8   30110.00
     18     1567.75   47.03    0.634  0.50( 0.46) 0.92    3541.2   30400.00
     19     1468.09   52.74    0.594  0.50( 0.46) 0.91    4100.5   30300.00
     20     1439.57   54.60    0.582  0.50( 0.46) 0.91    4270.7   21400.00
     21     1182.09   72.30    0.505  0.50( 0.44) 0.89    5736.0   13100.00
     22     1140.39   74.90    0.495  0.50( 0.44) 0.88    5898.4   13200.00
     23     1129.74   75.41    0.493  0.50( 0.44) 0.88    5920.5   13210.00
     24      627.94  108.57    0.397  0.50( 0.44) 0.87    7089.0   13000.00
     25      568.28  113.48    0.385  0.50( 0.44) 0.87    7114.6   13010.00
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
******************************************************************************
            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
           (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
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             Ver. 20.0  Release Date: 06/01/2013  License ID 1264

                          Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* GOBERNADORA WATERSHED STUDY - RATIONAL METHOD                         *
* LOCAL WATERSHED S33 - FREE DRAINING - EXISITING CONDITION             *
* 10-YR EV JULY 2017 JMITAL                                             *
 ************************************************************************

  FILE NAME: RE10EV33.DAT
  TIME/DATE OF STUDY: 16:50 08/23/2017
==============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =    5.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  36.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S31X10.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     1716.43   38.97  0.30( 0.24) 0.81    2485.3   13100.00
      2     1689.97   68.04  0.30( 0.24) 0.81    3778.1   13000.00
      3     1658.02   70.38  0.30( 0.24) 0.81    3796.8   13010.00
    TOTAL AREA(ACRES) =     3796.8

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S32X10.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      822.07   36.32  0.30( 0.25) 0.83    1125.3   13210.00
      2      821.63   36.43  0.30( 0.25) 0.83    1127.6   13200.00
    TOTAL AREA(ACRES) =     1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 14.0
------------------------------------------------------------------------------
  >>>>>MEMORY BANK #  2 COPIED ONTO MAIN-STREAM MEMORY<<<<<
==============================================================================

  MAIN-STREAM MEMORY DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      822.07   36.32  0.30( 0.25) 0.83    1125.3   13210.00
      2      821.63   36.43  0.30( 0.25) 0.83    1127.6   13200.00
    TOTAL AREA(ACRES) =      1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE =  11
------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      822.07   36.32    1.045  0.30( 0.25) 0.83    1125.3   13210.00
      2      821.63   36.43    1.043  0.30( 0.25) 0.83    1127.6   13200.00
  LONGEST FLOWPATH FROM NODE  13200.00 TO NODE  13222.00 =   16821.05 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1716.43   38.97    1.005  0.30( 0.24) 0.81    2485.3   13100.00
      2     1689.97   68.04    0.734  0.30( 0.24) 0.81    3778.1   13000.00
      3     1658.02   70.38    0.721  0.30( 0.24) 0.81    3796.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2506.94   36.32    1.045  0.30( 0.24) 0.82    3441.4   13210.00
      2     2507.88   36.43    1.043  0.30( 0.24) 0.82    3450.8   13200.00
      3     2497.97   38.97    1.005  0.30( 0.24) 0.82    3612.9   13100.00
      4     2192.43   68.04    0.734  0.30( 0.24) 0.81    4905.7   13000.00
```

```
      5     2146.19   70.38    0.721  0.30( 0.24) 0.81    4924.4   13010.00
    TOTAL AREA(ACRES) =      4924.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     2507.88  Tc(MIN.) =   36.430
  EFFECTIVE AREA(ACRES) =   3450.80  AREA-AVERAGED Fm(INCH/HR) =  0.24
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
  TOTAL AREA(ACRES) =     4924.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13222.00 TO NODE  13223.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    427.51  DOWNSTREAM(FEET) =    416.40
  CHANNEL LENGTH THRU SUBAREA(FEET) =   864.00   CHANNEL SLOPE =  0.0129
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.19
  CHANNEL FLOW THRU SUBAREA(CFS) =    2507.88
  FLOW VELOCITY(FEET/SEC.) =   9.58   FLOW DEPTH(FEET) =   4.19
  TRAVEL TIME(MIN.) =   1.50   Tc(MIN.) =   37.93
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610301V.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       41.66   12.77  0.30( 0.30) 1.00      29.3   30100.00
      2       37.07   15.48  0.30( 0.30) 1.00      29.7   30110.00
    TOTAL AREA(ACRES) =       29.7

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2506.94   37.82    1.022  0.30( 0.24) 0.82    3441.4   13210.00
      2     2507.88   37.93    1.020  0.30( 0.24) 0.82    3450.8   13200.00
      3     2497.97   40.48    0.983  0.30( 0.24) 0.82    3612.9   13100.00
      4     2192.43   69.61    0.725  0.30( 0.24) 0.81    4905.7   13000.00
```



```
      5     2146.19   71.96    0.712  0.30( 0.24) 0.81    4924.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       41.66   12.77    1.880  0.30( 0.30) 1.00      29.3   30100.00
      2       37.07   15.48    1.688  0.30( 0.30) 1.00      29.7   30110.00
  LONGEST FLOWPATH FROM NODE  30110.00 TO NODE  13223.00 =    2058.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1823.98   12.77    1.880  0.30( 0.25) 0.82    1191.4   30100.00
      2     1942.98   15.48    1.688  0.30( 0.25) 0.82    1438.3   30110.00
      3     2526.21   37.82    1.022  0.30( 0.25) 0.82    3471.1   13210.00
      4     2527.11   37.93    1.020  0.30( 0.25) 0.82    3480.5   13200.00
      5     2516.22   40.48    0.983  0.30( 0.25) 0.82    3642.5   13100.00
      6     2203.78   69.61    0.725  0.30( 0.24) 0.81    4935.4   13000.00
      7     2157.18   71.96    0.712  0.30( 0.24) 0.81    4954.1   13010.00
    TOTAL AREA(ACRES) =      4954.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     2527.11  Tc(MIN.) =   37.934
  EFFECTIVE AREA(ACRES) =   3480.48  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
  TOTAL AREA(ACRES) =     4954.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13224.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    416.40  DOWNSTREAM(FEET) =    410.60
  CHANNEL LENGTH THRU SUBAREA(FEET) =   408.51   CHANNEL SLOPE =  0.0142
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.09
  CHANNEL FLOW THRU SUBAREA(CFS) =    2527.11
  FLOW VELOCITY(FEET/SEC.) =   9.92   FLOW DEPTH(FEET) =   4.09
  TRAVEL TIME(MIN.) =   0.69   Tc(MIN.) =   38.62
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610302V.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
```

```
 STREAM        Q      Tc      Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.)   (INCH/HR)           (ACRES)    NODE
    1       19.00   10.75  0.30( 0.30) 1.00       11.9   30210.00
    2       18.80   11.08  0.30( 0.30) 1.00       12.0   30200.00
  TOTAL AREA(ACRES) =       12.0

****************************************************************************
 FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
    1     1823.98   13.54    1.820  0.30( 0.25) 0.82    1191.4   30100.00
    2     1942.98   16.23    1.644  0.30( 0.25) 0.82    1438.3   30110.00
    3     2526.21   38.51    1.011  0.30( 0.25) 0.82    3471.1   13210.00
    4     2527.11   38.62    1.010  0.30( 0.25) 0.82    3480.5   13200.00
    5     2516.22   41.16    0.974  0.30( 0.25) 0.82    3642.5   13100.00
    6     2203.78   70.32    0.721  0.30( 0.24) 0.81    4935.4   13000.00
    7     2157.18   72.68    0.708  0.30( 0.24) 0.81    4954.1   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
    1       19.00   10.75    2.072  0.30( 0.30) 1.00       11.9   30210.00
    2       18.80   11.08    2.037  0.30( 0.30) 1.00       12.0   30200.00
 LONGEST FLOWPATH FROM NODE  30200.00 TO NODE  13224.00 =    1209.00 FEET.

 ** PEAK FLOW RATE TABLE **
 STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
    1     1698.93   10.75    2.072  0.30( 0.25) 0.82     957.7   30210.00
    2     1717.42   11.08    2.037  0.30( 0.25) 0.82     987.2   30200.00
    3     1840.44   13.54    1.820  0.30( 0.25) 0.82    1203.4   30100.00
    4     1957.53   16.23    1.644  0.30( 0.25) 0.82    1450.3   30110.00
    5     2533.91   38.51    1.011  0.30( 0.25) 0.82    3483.1   13210.00
    6     2534.79   38.62    1.010  0.30( 0.25) 0.82    3492.5   13200.00
    7     2523.52   41.16    0.974  0.30( 0.25) 0.82    3654.6   13100.00
    8     2208.34   70.32    0.721  0.30( 0.24) 0.81    4947.4   13000.00
    9     2161.60   72.68    0.708  0.30( 0.24) 0.81    4966.1   13010.00
  TOTAL AREA(ACRES) =      4966.1

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     2534.79  Tc(MIN.) =   38.620
 EFFECTIVE AREA(ACRES) =   3492.51  AREA-AVERAGED Fm(INCH/HR) =  0.25
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
 TOTAL AREA(ACRES) =     4966.1
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13224.00 TO NODE  13301.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
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 ELEVATION DATA: UPSTREAM(FEET) =    410.60  DOWNSTREAM(FEET) =    382.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1260.70   CHANNEL SLOPE =  0.0227
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   3.60
 *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  0.984
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       61.66      0.30     0.998     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    2553.79
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  11.65
 AVERAGE FLOW DEPTH(FEET) =   3.60   TRAVEL TIME(MIN.) =   1.80
 Tc(MIN.) =   40.42
 SUBAREA AREA(ACRES) =    61.66       SUBAREA RUNOFF(CFS) =   38.00
 EFFECTIVE AREA(ACRES) =   3554.17     AREA-AVERAGED Fm(INCH/HR) =   0.25
 AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.82
 TOTAL AREA(ACRES) =     5027.8          PEAK FLOW RATE(CFS) =    2534.79
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   3.59

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  3.59   FLOW VELOCITY(FEET/SEC.) =  11.62
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610303V.DNA
 MEMORY BANK #  3 DEFINED AS FOLLOWS:
  STREAM        Q      Tc      Fp(Fm)      Ap      Ae     HEADWATER
  NUMBER      (CFS)  (MIN.)   (INCH/HR)           (ACRES)    NODE
     1      162.23   22.03  0.30( 0.30) 1.00      166.2   30300.00
   TOTAL AREA(ACRES) =      166.2

****************************************************************************
 FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
    1     1698.93   12.79    1.879  0.30( 0.25) 0.83    1019.4   30210.00
    2     1717.42   13.12    1.852  0.30( 0.25) 0.83    1048.9   30200.00
    3     1840.44   15.53    1.685  0.30( 0.25) 0.83    1265.1   30100.00
    4     1957.53   18.19    1.542  0.30( 0.25) 0.83    1512.0   30110.00
    5     2533.91   40.31    0.986  0.30( 0.25) 0.82    3544.8   13210.00
    6     2534.79   40.42    0.984  0.30( 0.25) 0.82    3554.2   13200.00
    7     2523.52   42.97    0.951  0.30( 0.25) 0.82    3716.2   13100.00
    8     2208.34   72.21    0.710  0.30( 0.24) 0.82    5009.1   13000.00
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     9     2161.60   74.58    0.698  0.30( 0.24) 0.82    5027.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      162.23   22.03    1.384  0.30( 0.30) 1.00     166.2   30300.00
  LONGEST FLOWPATH FROM NODE  30300.00 TO NODE  13301.00 =    6391.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1836.11   12.79    1.879  0.30( 0.25) 0.85    1115.9   30210.00
      2     1855.74   13.12    1.852  0.30( 0.25) 0.85    1147.9   30200.00
      3     1986.50   15.53    1.685  0.30( 0.25) 0.84    1382.2   30100.00
      4     2110.91   18.19    1.542  0.30( 0.25) 0.84    1649.2   30110.00
      5     2219.80   22.03    1.384  0.30( 0.25) 0.84    2031.1   30300.00
      6     2636.50   40.31    0.986  0.30( 0.25) 0.83    3711.0   13210.00
      7     2637.14   40.42    0.984  0.30( 0.25) 0.83    3720.4   13200.00
      8     2620.91   42.97    0.951  0.30( 0.25) 0.83    3882.4   13100.00
      9     2269.73   72.21    0.710  0.30( 0.25) 0.82    5175.3   13000.00
     10     2221.07   74.58    0.698  0.30( 0.25) 0.82    5194.0   13010.00
    TOTAL AREA(ACRES) =      5194.0

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     2637.14  Tc(MIN.) =   40.424
  EFFECTIVE AREA(ACRES) =   3720.39  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.83
  TOTAL AREA(ACRES) =     5194.0
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    382.00  DOWNSTREAM(FEET) =    375.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1141.09   CHANNEL SLOPE =  0.0061
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.31
  *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  0.951
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -        9.42      0.30     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    2639.90
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   7.56
  AVERAGE FLOW DEPTH(FEET) =   5.30   TRAVEL TIME(MIN.) =   2.52
  Tc(MIN.) =   42.94
  SUBAREA AREA(ACRES) =     9.42       SUBAREA RUNOFF(CFS) =    5.52
  EFFECTIVE AREA(ACRES) =   3729.81     AREA-AVERAGED Fm(INCH/HR) =   0.25
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.83
  TOTAL AREA(ACRES) =     5203.4         PEAK FLOW RATE(CFS) =    2637.14
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
```



```
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.30

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  5.30   FLOW VELOCITY(FEET/SEC.) =   7.55
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610214V.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      198.16   25.79  0.30( 0.30) 1.00     227.7   21400.00
    TOTAL AREA(ACRES) =      227.7

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1836.11   15.61    1.680  0.30( 0.25) 0.85    1125.3   30210.00
      2     1855.74   15.93    1.661  0.30( 0.25) 0.85    1157.3   30200.00
      3     1986.50   18.28    1.537  0.30( 0.25) 0.85    1391.7   30100.00
      4     2110.91   20.88    1.426  0.30( 0.25) 0.84    1658.6   30110.00
      5     2219.80   24.68    1.299  0.30( 0.25) 0.84    2040.5   30300.00
      6     2636.50   42.83    0.953  0.30( 0.25) 0.83    3720.4   13210.00
      7     2637.14   42.94    0.951  0.30( 0.25) 0.83    3729.8   13200.00
      8     2620.91   45.49    0.921  0.30( 0.25) 0.83    3891.9   13100.00
      9     2269.73   74.85    0.696  0.30( 0.25) 0.82    5184.7   13000.00
     10     2221.07   77.24    0.684  0.30( 0.25) 0.82    5203.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      198.16   25.79    1.267  0.30( 0.30) 1.00     227.7   21400.00
  LONGEST FLOWPATH FROM NODE  21400.00 TO NODE  13302.00 =    6708.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2007.28   15.61    1.680  0.30( 0.26) 0.87    1263.2   30210.00
      2     2027.99   15.93    1.661  0.30( 0.26) 0.86    1297.9   30200.00
```

```
      3     2166.22   18.28    1.537  0.30( 0.26) 0.86    1553.0   30100.00
      4     2297.83   20.88    1.426  0.30( 0.26) 0.86    1843.0   30110.00
      5     2415.66   24.68    1.299  0.30( 0.26) 0.86    2258.4   30300.00
      6     2443.42   25.79    1.267  0.30( 0.26) 0.86    2370.8   21400.00
      7     2770.28   42.83    0.953  0.30( 0.25) 0.84    3948.1   13210.00
      8     2770.64   42.94    0.951  0.30( 0.25) 0.84    3957.5   13200.00
      9     2748.18   45.49    0.921  0.30( 0.25) 0.84    4119.5   13100.00
     10     2350.94   74.85    0.696  0.30( 0.25) 0.83    5412.4   13000.00
     11     2299.79   77.24    0.684  0.30( 0.25) 0.83    5431.1   13010.00
    TOTAL AREA(ACRES) =      5431.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     2770.64  Tc(MIN.) =   42.939
  EFFECTIVE AREA(ACRES) =   3957.46  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.84
  TOTAL AREA(ACRES) =     5431.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13303.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    375.00  DOWNSTREAM(FEET) =    355.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2193.96   CHANNEL SLOPE =  0.0091
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.88
  CHANNEL FLOW THRU SUBAREA(CFS) =    2770.64
  FLOW VELOCITY(FEET/SEC.) =   8.79   FLOW DEPTH(FEET) =   4.88
  TRAVEL TIME(MIN.) =   4.16   Tc(MIN.) =   47.10
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610213V.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      118.56   16.27  0.30( 0.30) 1.00      98.2   21300.00
    TOTAL AREA(ACRES) =       98.2

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================
```



```
  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2007.28   20.23    1.452  0.30( 0.26) 0.87    1263.2   30210.00
      2     2027.99   20.52    1.440  0.30( 0.26) 0.86    1297.9   30200.00
      3     2166.22   22.78    1.359  0.30( 0.26) 0.86    1553.0   30100.00
      4     2297.83   25.30    1.281  0.30( 0.26) 0.86    1843.0   30110.00
      5     2415.66   29.03    1.185  0.30( 0.26) 0.86    2258.4   30300.00
      6     2443.42   30.12    1.161  0.30( 0.26) 0.86    2370.8   21400.00
      7     2770.28   46.99    0.904  0.30( 0.25) 0.84    3948.1   13210.00
      8     2770.64   47.10    0.903  0.30( 0.25) 0.84    3957.5   13200.00
      9     2748.18   49.66    0.877  0.30( 0.25) 0.84    4119.5   13100.00
     10     2350.94   79.24    0.674  0.30( 0.25) 0.83    5412.4   13000.00
     11     2299.79   81.65    0.663  0.30( 0.25) 0.83    5431.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      118.56   16.27    1.641  0.30( 0.30) 1.00      98.2   21300.00
  LONGEST FLOWPATH FROM NODE  21300.00 TO NODE  13303.00 =    2988.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1989.12   16.27    1.641  0.30( 0.26) 0.88    1114.4   21300.00
      2     2109.15   20.23    1.452  0.30( 0.26) 0.87    1361.4   30210.00
      3     2128.81   20.52    1.440  0.30( 0.26) 0.87    1396.1   30200.00
      4     2259.80   22.78    1.359  0.30( 0.26) 0.87    1651.2   30100.00
      5     2384.53   25.30    1.281  0.30( 0.26) 0.87    1941.2   30110.00
      6     2493.93   29.03    1.185  0.30( 0.26) 0.86    2356.6   30300.00
      7     2519.55   30.12    1.161  0.30( 0.26) 0.86    2469.0   21400.00
      8     2823.71   46.99    0.904  0.30( 0.25) 0.84    4046.3   13210.00
      9     2823.96   47.10    0.903  0.30( 0.25) 0.84    4055.7   13200.00
     10     2799.16   49.66    0.877  0.30( 0.25) 0.84    4217.7   13100.00
     11     2384.03   79.24    0.674  0.30( 0.25) 0.83    5510.6   13000.00
     12     2331.88   81.65    0.663  0.30( 0.25) 0.83    5529.3   13010.00
    TOTAL AREA(ACRES) =      5529.3

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     2823.96  Tc(MIN.) =   47.101
  EFFECTIVE AREA(ACRES) =   4055.68  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.84
  TOTAL AREA(ACRES) =     5529.3
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13304.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    355.00  DOWNSTREAM(FEET) =    350.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.40   CHANNEL SLOPE =  0.0054
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.70
  *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  0.881
```

```
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       13.84      0.30      1.000     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    2827.58
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   7.39
 AVERAGE FLOW DEPTH(FEET) =   5.70   TRAVEL TIME(MIN.) =   2.09
 Tc(MIN.) =   49.19
 SUBAREA AREA(ACRES) =    13.84       SUBAREA RUNOFF(CFS) =    7.24
 EFFECTIVE AREA(ACRES) =   4069.52     AREA-AVERAGED Fm(INCH/HR) =   0.25
 AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.84
 TOTAL AREA(ACRES) =     5543.1         PEAK FLOW RATE(CFS) =    2823.96
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   5.70

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  5.70   FLOW VELOCITY(FEET/SEC.) =   7.38
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 3 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610304V.DNA
 MEMORY BANK #  3 DEFINED AS FOLLOWS:
  STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
     1      171.79   19.95  0.30( 0.30) 1.00     164.0   30410.00
     2      161.41   25.27  0.30( 0.30) 1.00     182.7   30400.00
   TOTAL AREA(ACRES) =      182.7

****************************************************************************
 FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     1989.12   18.60    1.522  0.30( 0.26) 0.88    1128.3   21300.00
     2     2109.15   22.51    1.368  0.30( 0.26) 0.88    1375.2   30210.00
     3     2128.81   22.80    1.358  0.30( 0.26) 0.88    1409.9   30200.00
     4     2259.80   25.01    1.289  0.30( 0.26) 0.87    1665.1   30100.00
     5     2384.53   27.50    1.222  0.30( 0.26) 0.87    1955.1   30110.00
     6     2493.93   31.20    1.138  0.30( 0.26) 0.86    2370.4   30300.00
     7     2519.55   32.28    1.117  0.30( 0.26) 0.86    2482.8   21400.00
```



```
     8     2823.71   49.08    0.882  0.30( 0.25) 0.84    4060.2   13210.00
     9     2823.96   49.19    0.881  0.30( 0.25) 0.84    4069.5   13200.00
    10     2799.16   51.76    0.856  0.30( 0.25) 0.84    4231.6   13100.00
    11     2384.03   81.44    0.664  0.30( 0.25) 0.83    5524.5   13000.00
    12     2331.88   83.87    0.653  0.30( 0.25) 0.83    5543.1   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

 ** MEMORY BANK #  3 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      171.79   19.95    1.463  0.30( 0.30) 1.00     164.0   30410.00
     2      161.41   25.27    1.282  0.30( 0.30) 1.00     182.7   30400.00
 LONGEST FLOWPATH FROM NODE  30400.00 TO NODE  13304.00 =    5899.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     2157.37   18.60    1.522  0.30( 0.27) 0.89    1281.2   21300.00
     2     2202.39   19.95    1.463  0.30( 0.27) 0.89    1377.7   30410.00
     3     2275.94   22.51    1.368  0.30( 0.27) 0.89    1548.2   30210.00
     4     2295.03   22.80    1.358  0.30( 0.27) 0.89    1584.0   30200.00
     5     2421.70   25.01    1.289  0.30( 0.27) 0.88    1846.9   30100.00
     6     2433.97   25.27    1.282  0.30( 0.26) 0.88    1877.4   30400.00
     7     2536.15   27.50    1.222  0.30( 0.26) 0.88    2137.8   30110.00
     8     2631.79   31.20    1.138  0.30( 0.26) 0.87    2553.1   30300.00
     9     2653.86   32.28    1.117  0.30( 0.26) 0.87    2665.6   21400.00
    10     2919.50   49.08    0.882  0.30( 0.26) 0.85    4242.9   13210.00
    11     2919.56   49.19    0.881  0.30( 0.26) 0.85    4252.2   13200.00
    12     2890.68   51.76    0.856  0.30( 0.25) 0.85    4414.3   13100.00
    13     2443.87   81.44    0.664  0.30( 0.25) 0.84    5707.2   13000.00
    14     2389.94   83.87    0.653  0.30( 0.25) 0.84    5725.8   13010.00
   TOTAL AREA(ACRES) =      5725.8

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     2919.56  Tc(MIN.) =   49.189
 EFFECTIVE AREA(ACRES) =   4252.23  AREA-AVERAGED Fm(INCH/HR) =  0.26
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
 TOTAL AREA(ACRES) =     5725.8
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13304.00 TO NODE  13305.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    350.00  DOWNSTREAM(FEET) =    315.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  2966.27   CHANNEL SLOPE =  0.0118
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   4.68
 *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  0.834
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       27.39      0.30      1.000     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
```

```
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    2926.15
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.76
  AVERAGE FLOW DEPTH(FEET) =   4.68   TRAVEL TIME(MIN.) =   5.06
  Tc(MIN.) =   54.25
  SUBAREA AREA(ACRES) =    27.39       SUBAREA RUNOFF(CFS) =   13.17
  EFFECTIVE AREA(ACRES) =   4279.62     AREA-AVERAGED Fm(INCH/HR) =   0.26
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.85
  TOTAL AREA(ACRES) =     5753.2         PEAK FLOW RATE(CFS) =    2919.56
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.67

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  4.67   FLOW VELOCITY(FEET/SEC.) =   9.76
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610305V.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      493.32   24.19  0.30( 0.30) 1.00     540.8   30520.00
      2      492.62   25.71  0.30( 0.30) 1.00     564.8   30540.00
      3      482.19   27.17  0.30( 0.30) 1.00     575.8   30510.00
      4      467.64   28.77  0.30( 0.30) 1.00     582.8   30500.00
    TOTAL AREA(ACRES) =      582.8

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2157.37   24.18    1.314  0.30( 0.27) 0.90    1308.6   21300.00
      2     2202.39   25.49    1.275  0.30( 0.27) 0.89    1405.1   30410.00
      3     2275.94   27.99    1.210  0.30( 0.27) 0.89    1575.6   30210.00
      4     2295.03   28.27    1.203  0.30( 0.27) 0.89    1611.4   30200.00
      5     2421.70   30.38    1.155  0.30( 0.27) 0.89    1874.3   30100.00
      6     2433.97   30.63    1.150  0.30( 0.27) 0.89    1904.8   30400.00
      7     2536.15   32.79    1.107  0.30( 0.26) 0.88    2165.1   30110.00
      8     2631.79   36.43    1.043  0.30( 0.26) 0.87    2580.5   30300.00
      9     2653.86   37.50    1.027  0.30( 0.26) 0.87    2692.9   21400.00
     10     2919.50   54.14    0.835  0.30( 0.26) 0.85    4270.3   13210.00
     11     2919.56   54.25    0.834  0.30( 0.26) 0.85    4279.6   13200.00
```



```
     12     2890.68   56.83    0.813  0.30( 0.25) 0.85    4441.7   13100.00
     13     2443.87   86.79    0.641  0.30( 0.25) 0.84    5734.6   13000.00
     14     2389.94   89.26    0.631  0.30( 0.25) 0.84    5753.2   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      493.32   24.19    1.313  0.30( 0.30) 1.00     540.8   30520.00
      2      492.62   25.71    1.269  0.30( 0.30) 1.00     564.8   30540.00
      3      482.19   27.17    1.230  0.30( 0.30) 1.00     575.8   30510.00
      4      467.64   28.77    1.191  0.30( 0.30) 1.00     582.8   30500.00
  LONGEST FLOWPATH FROM NODE  30500.00 TO NODE  13305.00 =    9458.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2650.62   24.18    1.314  0.30( 0.28) 0.93    1849.2   21300.00
      2     2651.07   24.19    1.313  0.30( 0.28) 0.93    1850.3   30520.00
      3     2695.11   25.49    1.275  0.30( 0.28) 0.92    1966.4   30410.00
      4     2701.64   25.71    1.269  0.30( 0.28) 0.92    1985.3   30540.00
      5     2734.07   27.17    1.230  0.30( 0.28) 0.92    2095.7   30510.00
      6     2750.70   27.99    1.210  0.30( 0.28) 0.92    2155.0   30210.00
      7     2767.24   28.27    1.203  0.30( 0.28) 0.92    2192.0   30200.00
      8     2792.74   28.77    1.191  0.30( 0.28) 0.92    2256.6   30500.00
      9     2870.46   30.38    1.155  0.30( 0.27) 0.91    2457.1   30100.00
     10     2879.96   30.63    1.150  0.30( 0.27) 0.91    2487.7   30400.00
     11     2959.44   32.79    1.107  0.30( 0.27) 0.91    2748.0   30110.00
     12     3021.80   36.43    1.043  0.30( 0.27) 0.90    3163.4   30300.00
     13     3035.03   37.50    1.027  0.30( 0.27) 0.90    3275.8   21400.00
     14     3200.23   54.14    0.835  0.30( 0.26) 0.87    4853.1   13210.00
     15     3199.78   54.25    0.834  0.30( 0.26) 0.87    4862.5   13200.00
     16     3159.62   56.83    0.813  0.30( 0.26) 0.87    5024.5   13100.00
     17     2622.54   86.79    0.641  0.30( 0.26) 0.85    6317.4   13000.00
     18     2563.36   89.26    0.631  0.30( 0.26) 0.85    6336.1   13010.00
    TOTAL AREA(ACRES) =      6336.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     3200.23  Tc(MIN.) =   54.139
  EFFECTIVE AREA(ACRES) =   4853.10  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.91
  TOTAL AREA(ACRES) =     6336.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.20 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    315.00  DOWNSTREAM(FEET) =    284.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1317.91   CHANNEL SLOPE =  0.0235
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.05
  CHANNEL FLOW THRU SUBAREA(CFS) =    3200.23
  FLOW VELOCITY(FEET/SEC.) =  12.70   FLOW DEPTH(FEET) =   4.05
  TRAVEL TIME(MIN.) =   1.73   Tc(MIN.) =   55.87
```

```
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610306V.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       43.16   19.36  0.30( 0.30) 1.00      40.4   30600.00
    TOTAL AREA(ACRES) =       40.4

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2650.62   26.01    1.261  0.30( 0.28) 0.93    1849.2   21300.00
      2     2651.07   26.02    1.260  0.30( 0.28) 0.93    1850.3   30520.00
      3     2695.11   27.32    1.227  0.30( 0.28) 0.92    1966.4   30410.00
      4     2701.64   27.54    1.221  0.30( 0.28) 0.92    1985.3   30540.00
      5     2734.07   28.99    1.186  0.30( 0.28) 0.92    2095.7   30510.00
      6     2750.70   29.80    1.168  0.30( 0.28) 0.92    2155.0   30210.00
      7     2767.24   30.08    1.162  0.30( 0.28) 0.92    2192.0   30200.00
      8     2792.74   30.58    1.151  0.30( 0.28) 0.92    2256.6   30500.00
      9     2870.46   32.17    1.119  0.30( 0.27) 0.91    2457.1   30100.00
     10     2879.96   32.42    1.114  0.30( 0.27) 0.91    2487.7   30400.00
     11     2959.44   34.57    1.075  0.30( 0.27) 0.91    2748.0   30110.00
     12     3021.80   38.19    1.016  0.30( 0.27) 0.90    3163.4   30300.00
     13     3035.03   39.26    1.000  0.30( 0.27) 0.90    3275.8   21400.00
     14     3200.23   55.87    0.820  0.30( 0.26) 0.87    4853.1   13210.00
     15     3199.78   55.98    0.820  0.30( 0.26) 0.87    4862.5   13200.00
     16     3159.62   58.57    0.799  0.30( 0.26) 0.87    5024.5   13100.00
     17     2622.54   88.64    0.633  0.30( 0.26) 0.85    6317.4   13000.00
     18     2563.36   91.12    0.623  0.30( 0.26) 0.85    6336.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       43.16   19.36    1.488  0.30( 0.30) 1.00      40.4   30600.00
  LONGEST FLOWPATH FROM NODE  30600.00 TO NODE  13305.20 =    2948.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
```



```
      1     2472.79   19.36    1.488  0.30( 0.28) 0.93    1416.7   30600.00
      2     2685.52   26.01    1.261  0.30( 0.28) 0.93    1889.5   21300.00
      3     2685.95   26.02    1.260  0.30( 0.28) 0.93    1890.6   30520.00
      4     2728.76   27.32    1.227  0.30( 0.28) 0.93    2006.7   30410.00
      5     2735.09   27.54    1.221  0.30( 0.28) 0.93    2025.6   30540.00
      6     2766.26   28.99    1.186  0.30( 0.28) 0.92    2136.0   30510.00
      7     2782.22   29.80    1.168  0.30( 0.28) 0.92    2195.4   30210.00
      8     2798.54   30.08    1.162  0.30( 0.28) 0.92    2232.4   30200.00
      9     2823.66   30.58    1.151  0.30( 0.28) 0.92    2297.0   30500.00
     10     2900.20   32.17    1.119  0.30( 0.27) 0.91    2497.5   30100.00
     11     2909.53   32.42    1.114  0.30( 0.27) 0.91    2528.0   30400.00
     12     2987.57   34.57    1.075  0.30( 0.27) 0.91    2788.3   30110.00
     13     3047.80   38.19    1.016  0.30( 0.27) 0.90    3203.7   30300.00
     14     3060.47   39.26    1.000  0.30( 0.27) 0.90    3316.1   21400.00
     15     3219.13   55.87    0.820  0.30( 0.26) 0.87    4893.4   13210.00
     16     3218.65   55.98    0.820  0.30( 0.26) 0.87    4902.8   13200.00
     17     3177.74   58.57    0.799  0.30( 0.26) 0.87    5064.9   13100.00
     18     2634.63   88.64    0.633  0.30( 0.26) 0.86    6357.7   13000.00
     19     2575.10   91.12    0.623  0.30( 0.26) 0.85    6376.4   13010.00
    TOTAL AREA(ACRES) =      6376.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     3219.13  Tc(MIN.) =   55.869
  EFFECTIVE AREA(ACRES) =   4893.45  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.90
  TOTAL AREA(ACRES) =     6376.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.40 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    284.00  DOWNSTREAM(FEET) =    274.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   826.37   CHANNEL SLOPE =  0.0121
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.90
  CHANNEL FLOW THRU SUBAREA(CFS) =    3219.13
  FLOW VELOCITY(FEET/SEC.) =  10.15   FLOW DEPTH(FEET) =   4.90
  TRAVEL TIME(MIN.) =   1.36   Tc(MIN.) =   57.23
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610307V.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
```

```
 NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
    1      105.87   19.09  0.30( 0.30) 1.00      98.0   30700.00
  TOTAL AREA(ACRES) =       98.0

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     2472.79   20.84    1.428  0.30( 0.28) 0.93    1416.7   30600.00
     2     2685.52   27.45    1.223  0.30( 0.28) 0.93    1889.5   21300.00
     3     2685.95   27.46    1.223  0.30( 0.28) 0.93    1890.6   30520.00
     4     2728.76   28.75    1.192  0.30( 0.28) 0.93    2006.7   30410.00
     5     2735.09   28.97    1.187  0.30( 0.28) 0.93    2025.6   30540.00
     6     2766.26   30.41    1.155  0.30( 0.28) 0.92    2136.0   30510.00
     7     2782.22   31.22    1.138  0.30( 0.28) 0.92    2195.4   30210.00
     8     2798.54   31.50    1.132  0.30( 0.28) 0.92    2232.4   30200.00
     9     2823.66   31.99    1.122  0.30( 0.28) 0.92    2297.0   30500.00
    10     2900.20   33.57    1.092  0.30( 0.27) 0.91    2497.5   30100.00
    11     2909.53   33.82    1.088  0.30( 0.27) 0.91    2528.0   30400.00
    12     2987.57   35.96    1.051  0.30( 0.27) 0.91    2788.3   30110.00
    13     3047.80   39.57    0.996  0.30( 0.27) 0.90    3203.7   30300.00
    14     3060.47   40.63    0.981  0.30( 0.27) 0.90    3316.1   21400.00
    15     3219.13   57.23    0.809  0.30( 0.26) 0.87    4893.4   13210.00
    16     3218.65   57.34    0.809  0.30( 0.26) 0.87    4902.8   13200.00
    17     3177.74   59.93    0.789  0.30( 0.26) 0.87    5064.9   13100.00
    18     2634.63   90.09    0.627  0.30( 0.26) 0.86    6357.7   13000.00
    19     2575.10   92.58    0.618  0.30( 0.26) 0.85    6376.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      105.87   19.09    1.500  0.30( 0.30) 1.00      98.0   30700.00
  LONGEST FLOWPATH FROM NODE  30700.00 TO NODE  13305.40 =    5192.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     2513.31   19.09    1.500  0.30( 0.28) 0.93    1396.0   30700.00
     2     2572.31   20.84    1.428  0.30( 0.28) 0.93    1514.7   30600.00
     3     2766.95   27.45    1.223  0.30( 0.28) 0.93    1987.5   21300.00
     4     2767.36   27.46    1.223  0.30( 0.28) 0.93    1988.6   30520.00
     5     2807.44   28.75    1.192  0.30( 0.28) 0.93    2104.7   30410.00
     6     2813.31   28.97    1.187  0.30( 0.28) 0.93    2123.6   30540.00
     7     2841.66   30.41    1.155  0.30( 0.28) 0.93    2234.0   30510.00
     8     2856.13   31.22    1.138  0.30( 0.28) 0.93    2293.4   30210.00
     9     2871.96   31.50    1.132  0.30( 0.28) 0.92    2330.4   30200.00
    10     2896.20   31.99    1.122  0.30( 0.28) 0.92    2395.0   30500.00
    11     2970.09   33.57    1.092  0.30( 0.28) 0.92    2595.5   30100.00
    12     2979.02   33.82    1.088  0.30( 0.27) 0.92    2626.0   30400.00
    13     3053.82   35.96    1.051  0.30( 0.27) 0.91    2886.3   30110.00
    14     3109.20   39.57    0.996  0.30( 0.27) 0.90    3301.7   30300.00
    15     3120.56   40.63    0.981  0.30( 0.27) 0.90    3414.1   21400.00
```



```
    16     3264.08   57.23    0.809  0.30( 0.26) 0.87    4991.4   13210.00
    17     3263.52   57.34    0.809  0.30( 0.26) 0.87    5000.8   13200.00
    18     3220.86   59.93    0.789  0.30( 0.26) 0.87    5162.9   13100.00
    19     2663.51   90.09    0.627  0.30( 0.26) 0.86    6455.8   13000.00
    20     2603.13   92.58    0.618  0.30( 0.26) 0.86    6474.4   13010.00
  TOTAL AREA(ACRES) =      6474.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     3264.08  Tc(MIN.) =   57.226
  EFFECTIVE AREA(ACRES) =   4991.45  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.90
  TOTAL AREA(ACRES) =     6474.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.60 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    274.00  DOWNSTREAM(FEET) =    258.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   733.85   CHANNEL SLOPE =  0.0218
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.19
  CHANNEL FLOW THRU SUBAREA(CFS) =    3264.08
  FLOW VELOCITY(FEET/SEC.) =  12.47   FLOW DEPTH(FEET) =   4.19
  TRAVEL TIME(MIN.) =   0.98   Tc(MIN.) =   58.21
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.60 =   44764.55 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610308V.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       72.01   18.35  0.30( 0.30) 1.00      64.8   30800.00
    TOTAL AREA(ACRES) =       64.8

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2513.31   20.16    1.455  0.30( 0.28) 0.93    1396.0   30700.00
```

2	2572.31	21.90	1.389	0.30(0.28)	0.93	1514.7	30600.00
3	2766.95	28.49	1.198	0.30(0.28)	0.93	1987.5	21300.00
4	2767.36	28.50	1.198	0.30(0.28)	0.93	1988.6	30520.00
5	2807.44	29.78	1.169	0.30(0.28)	0.93	2104.7	30410.00
6	2813.31	30.00	1.164	0.30(0.28)	0.93	2123.6	30540.00
7	2841.66	31.44	1.133	0.30(0.28)	0.93	2234.0	30510.00
8	2856.13	32.25	1.117	0.30(0.28)	0.93	2293.4	30210.00
9	2871.96	32.52	1.112	0.30(0.28)	0.92	2330.4	30200.00
10	2896.20	33.01	1.103	0.30(0.28)	0.92	2395.0	30500.00
11	2970.09	34.59	1.074	0.30(0.28)	0.92	2595.5	30100.00
12	2979.02	34.83	1.070	0.30(0.27)	0.92	2626.0	30400.00
13	3053.82	36.96	1.035	0.30(0.27)	0.91	2886.3	30110.00
14	3109.20	40.57	0.982	0.30(0.27)	0.90	3301.7	30300.00
15	3120.56	41.63	0.968	0.30(0.27)	0.90	3414.1	21400.00
16	3264.08	58.21	0.802	0.30(0.26)	0.87	4991.4	13210.00
17	3263.52	58.32	0.801	0.30(0.26)	0.87	5000.8	13200.00
18	3220.86	60.92	0.782	0.30(0.26)	0.87	5162.9	13100.00
19	2663.51	91.13	0.623	0.30(0.26)	0.86	6455.8	13000.00
20	2603.13	93.63	0.614	0.30(0.26)	0.86	6474.4	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	72.01	18.35	1.534	0.30(0.30)	1.00	64.8	30800.00

LONGEST FLOWPATH FROM NODE 30800.00 TO NODE 13305.60 = 4165.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2513.29	18.35	1.534	0.30(0.28)	0.94	1335.2	30800.00
2	2580.70	20.16	1.455	0.30(0.28)	0.94	1460.8	30700.00
3	2635.85	21.90	1.389	0.30(0.28)	0.94	1579.5	30600.00
4	2819.35	28.49	1.198	0.30(0.28)	0.93	2052.4	21300.00
5	2819.75	28.50	1.198	0.30(0.28)	0.93	2053.4	30520.00
6	2858.12	29.78	1.169	0.30(0.28)	0.93	2169.6	30410.00
7	2863.70	30.00	1.164	0.30(0.28)	0.93	2188.5	30540.00
8	2890.28	31.44	1.133	0.30(0.28)	0.93	2298.9	30510.00
9	2903.83	32.25	1.117	0.30(0.28)	0.93	2358.2	30210.00
10	2919.34	32.52	1.112	0.30(0.28)	0.93	2395.2	30200.00
11	2943.05	33.01	1.103	0.30(0.28)	0.93	2459.8	30500.00
12	3015.27	34.59	1.074	0.30(0.28)	0.92	2660.3	30100.00
13	3023.95	34.83	1.070	0.30(0.28)	0.92	2690.9	30400.00
14	3096.70	36.96	1.035	0.30(0.27)	0.91	2951.2	30110.00
15	3149.00	40.57	0.982	0.30(0.27)	0.90	3366.5	30300.00
16	3159.54	41.63	0.968	0.30(0.27)	0.90	3479.0	21400.00
17	3293.36	58.21	0.802	0.30(0.26)	0.87	5056.3	13210.00
18	3292.74	58.32	0.801	0.30(0.26)	0.87	5065.6	13200.00
19	3248.95	60.92	0.782	0.30(0.26)	0.87	5227.7	13100.00
20	2682.37	91.13	0.623	0.30(0.26)	0.86	6520.6	13000.00
21	2621.44	93.63	0.614	0.30(0.26)	0.86	6539.3	13010.00

TOTAL AREA(ACRES) = 6539.3

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 3293.36 Tc(MIN.) = 58.207
EFFECTIVE AREA(ACRES) = 5056.27 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.90
TOTAL AREA(ACRES) = 6539.3

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

****
FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.80 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 258.00 DOWNSTREAM(FEET) = 254.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 947.16 CHANNEL SLOPE = 0.0042
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 6.63
CHANNEL FLOW THRU SUBAREA(CFS) = 3293.36
FLOW VELOCITY(FEET/SEC.) = 7.10 FLOW DEPTH(FEET) = 6.63
TRAVEL TIME(MIN.) = 2.22 Tc(MIN.) = 60.43
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610309V.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	74.61	17.84	0.30(0.30)	1.00	65.9	30900.00
2	74.53	17.89	0.30(0.30)	1.00	65.9	30910.00

TOTAL AREA(ACRES) = 65.9

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2513.29	20.76	1.431	0.30(0.28)	0.94	1335.2	30800.00
2	2580.70	22.55	1.366	0.30(0.28)	0.94	1460.8	30700.00
3	2635.85	24.27	1.311	0.30(0.28)	0.94	1579.5	30600.00
4	2819.35	30.82	1.146	0.30(0.28)	0.93	2052.4	21300.00
5	2819.75	30.83	1.146	0.30(0.28)	0.93	2053.4	30520.00
6	2858.12	32.10	1.120	0.30(0.28)	0.93	2169.6	30410.00
7	2863.70	32.32	1.116	0.30(0.28)	0.93	2188.5	30540.00
8	2890.28	33.75	1.089	0.30(0.28)	0.93	2298.9	30510.00
9	2903.83	34.55	1.075	0.30(0.28)	0.93	2358.2	30210.00
10	2919.34	34.83	1.070	0.30(0.28)	0.93	2395.2	30200.00
11	2943.05	35.31	1.062	0.30(0.28)	0.93	2459.8	30500.00
12	3015.27	36.87	1.036	0.30(0.28)	0.92	2660.3	30100.00

```
    13     3023.95   37.11    1.032  0.30( 0.28) 0.92    2690.9   30400.00
    14     3096.70   39.22    1.001  0.30( 0.27) 0.91    2951.2   30110.00
    15     3149.00   42.82    0.953  0.30( 0.27) 0.90    3366.5   30300.00
    16     3159.54   43.88    0.940  0.30( 0.27) 0.90    3479.0   21400.00
    17     3293.36   60.43    0.785  0.30( 0.26) 0.87    5056.3   13210.00
    18     3292.74   60.54    0.784  0.30( 0.26) 0.87    5065.6   13200.00
    19     3248.95   63.15    0.766  0.30( 0.26) 0.87    5227.7   13100.00
    20     2682.37   93.50    0.614  0.30( 0.26) 0.86    6520.6   13000.00
    21     2621.44   96.02    0.605  0.30( 0.26) 0.86    6539.3   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.80 =   45711.71 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1       74.61   17.84    1.559  0.30( 0.30) 1.00      65.9   30900.00
     2       74.53   17.89    1.556  0.30( 0.30) 1.00      65.9   30910.00
 LONGEST FLOWPATH FROM NODE  30900.00 TO NODE  13305.80 =    3403.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     2473.33   17.84    1.559  0.30( 0.28) 0.94    1213.2   30900.00
     2     2475.25   17.89    1.556  0.30( 0.28) 0.94    1216.3   30910.00
     3     2580.41   20.76    1.431  0.30( 0.28) 0.94    1401.1   30800.00
     4     2643.94   22.55    1.366  0.30( 0.28) 0.94    1526.7   30700.00
     5     2695.81   24.27    1.311  0.30( 0.28) 0.94    1645.4   30600.00
     6     2869.56   30.82    1.146  0.30( 0.28) 0.94    2118.3   21300.00
     7     2869.94   30.83    1.146  0.30( 0.28) 0.94    2119.4   30520.00
     8     2906.79   32.10    1.120  0.30( 0.28) 0.93    2235.5   30410.00
     9     2912.11   32.32    1.116  0.30( 0.28) 0.93    2254.4   30540.00
    10     2937.10   33.75    1.089  0.30( 0.28) 0.93    2364.8   30510.00
    11     2949.80   34.55    1.075  0.30( 0.28) 0.93    2424.1   30210.00
    12     2965.03   34.83    1.070  0.30( 0.28) 0.93    2461.1   30200.00
    13     2988.25   35.31    1.062  0.30( 0.28) 0.93    2525.7   30500.00
    14     3058.96   36.87    1.036  0.30( 0.28) 0.92    2726.2   30100.00
    15     3067.41   37.11    1.032  0.30( 0.28) 0.92    2756.8   30400.00
    16     3138.29   39.22    1.001  0.30( 0.27) 0.91    3017.1   30110.00
    17     3187.73   42.82    0.953  0.30( 0.27) 0.91    3432.5   30300.00
    18     3197.50   43.88    0.940  0.30( 0.27) 0.90    3544.9   21400.00
    19     3322.14   60.43    0.785  0.30( 0.26) 0.88    5122.2   13210.00
    20     3321.48   60.54    0.784  0.30( 0.26) 0.88    5131.6   13200.00
    21     3276.60   63.15    0.766  0.30( 0.26) 0.87    5293.6   13100.00
    22     2701.02   93.50    0.614  0.30( 0.26) 0.86    6586.5   13000.00
    23     2639.55   96.02    0.605  0.30( 0.26) 0.86    6605.2   13010.00
   TOTAL AREA(ACRES) =      6605.2

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     3322.14  Tc(MIN.) =   60.430
 EFFECTIVE AREA(ACRES) =   5122.19  AREA-AVERAGED Fm(INCH/HR) =  0.26
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.91
 TOTAL AREA(ACRES) =     6605.2
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.80 =   45711.71 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13305.80 TO NODE  13306.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
```



```
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    254.00  DOWNSTREAM(FEET) =    245.50
 CHANNEL LENGTH THRU SUBAREA(FEET) =   583.12   CHANNEL SLOPE =  0.0146
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   4.75
 *   5 YEAR RAINFALL INTENSITY(INCH/HR) =  0.779
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       68.77      0.30     0.998     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    3336.97
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  10.94
 AVERAGE FLOW DEPTH(FEET) =   4.75   TRAVEL TIME(MIN.) =   0.89
 Tc(MIN.) =   61.32
 SUBAREA AREA(ACRES) =    68.77       SUBAREA RUNOFF(CFS) =   29.67
 EFFECTIVE AREA(ACRES) =   5190.96     AREA-AVERAGED Fm(INCH/HR) =   0.26
 AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.88
 TOTAL AREA(ACRES) =     6673.9         PEAK FLOW RATE(CFS) =    3322.14
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   4.73

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  4.73   FLOW VELOCITY(FEET/SEC.) =  10.93
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13306.00 =   46294.83 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13306.00 TO NODE  13307.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    245.50  DOWNSTREAM(FEET) =    220.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1543.21   CHANNEL SLOPE =  0.0165
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   4.57
 CHANNEL FLOW THRU SUBAREA(CFS) =    3322.14
 FLOW VELOCITY(FEET/SEC.) =  11.40   FLOW DEPTH(FEET) =   4.57
 TRAVEL TIME(MIN.) =   2.26   Tc(MIN.) =   63.57
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610310V.DNA
```

```
 MEMORY BANK #  2 DEFINED AS FOLLOWS:
  STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)  (MIN.)  (INCH/HR)           (ACRES)     NODE
     1       93.11   22.85  0.30( 0.30) 1.00       97.9   31000.00
   TOTAL AREA(ACRES) =        97.9

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1      2473.33   21.29    1.411  0.30( 0.28) 0.94    1282.0   30900.00
     2      2475.25   21.34    1.409  0.30( 0.28) 0.94    1285.1   30910.00
     3      2580.41   24.16    1.314  0.30( 0.28) 0.94    1469.9   30800.00
     4      2643.94   25.93    1.263  0.30( 0.28) 0.94    1595.5   30700.00
     5      2695.81   27.63    1.219  0.30( 0.28) 0.94    1714.2   30600.00
     6      2869.56   34.11    1.083  0.30( 0.28) 0.94    2187.1   21300.00
     7      2869.94   34.12    1.083  0.30( 0.28) 0.94    2188.1   30520.00
     8      2906.79   35.37    1.061  0.30( 0.28) 0.94    2304.2   30410.00
     9      2912.11   35.60    1.057  0.30( 0.28) 0.94    2323.1   30540.00
    10      2937.10   37.02    1.034  0.30( 0.28) 0.93    2433.5   30510.00
    11      2949.80   37.82    1.022  0.30( 0.28) 0.93    2492.9   30210.00
    12      2965.03   38.09    1.018  0.30( 0.28) 0.93    2529.9   30200.00
    13      2988.25   38.56    1.011  0.30( 0.28) 0.93    2594.5   30500.00
    14      3058.96   40.10    0.989  0.30( 0.28) 0.92    2795.0   30100.00
    15      3067.41   40.34    0.985  0.30( 0.28) 0.92    2825.5   30400.00
    16      3138.29   42.42    0.958  0.30( 0.27) 0.92    3085.9   30110.00
    17      3187.73   46.00    0.915  0.30( 0.27) 0.91    3501.2   30300.00
    18      3197.50   47.06    0.904  0.30( 0.27) 0.91    3613.7   21400.00
    19      3322.14   63.57    0.763  0.30( 0.26) 0.88    5191.0   13210.00
    20      3321.48   63.69    0.762  0.30( 0.26) 0.88    5200.3   13200.00
    21      3276.60   66.31    0.745  0.30( 0.26) 0.88    5362.4   13100.00
    22      2701.02   96.86    0.602  0.30( 0.26) 0.86    6655.3   13000.00
    23      2639.55   99.40    0.594  0.30( 0.26) 0.86    6673.9   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

 ** MEMORY BANK #  2 CONFLUENCE DATA **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       93.11   22.85    1.356  0.30( 0.30) 1.00       97.9   31000.00
 LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  13307.00 =    5162.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1      2564.59   21.29    1.411  0.30( 0.28) 0.95    1373.2   30900.00
     2      2566.57   21.34    1.409  0.30( 0.28) 0.95    1376.5   30910.00
     3      2624.62   22.85    1.356  0.30( 0.28) 0.95    1481.9   31000.00
     4      2669.82   24.16    1.314  0.30( 0.28) 0.95    1567.8   30800.00
     5      2728.86   25.93    1.263  0.30( 0.28) 0.94    1693.3   30700.00
     6      2776.82   27.63    1.219  0.30( 0.28) 0.94    1812.1   30600.00
     7      2938.59   34.11    1.083  0.30( 0.28) 0.94    2284.9   21300.00
     8      2938.95   34.12    1.083  0.30( 0.28) 0.94    2286.0   30520.00
     9      2973.88   35.37    1.061  0.30( 0.28) 0.94    2402.1   30410.00
```



```
    10      2978.88   35.60    1.057  0.30( 0.28) 0.94    2421.0   30540.00
    11      3001.84   37.02    1.034  0.30( 0.28) 0.94    2531.4   30510.00
    12      3013.45   37.82    1.022  0.30( 0.28) 0.93    2590.8   30210.00
    13      3028.32   38.09    1.018  0.30( 0.28) 0.93    2627.8   30200.00
    14      3050.92   38.56    1.011  0.30( 0.28) 0.93    2692.4   30500.00
    15      3119.69   40.10    0.989  0.30( 0.28) 0.93    2892.9   30100.00
    16      3127.86   40.34    0.985  0.30( 0.28) 0.92    2923.4   30400.00
    17      3196.31   42.42    0.958  0.30( 0.28) 0.92    3183.7   30110.00
    18      3242.00   46.00    0.915  0.30( 0.27) 0.91    3599.1   30300.00
    19      3250.74   47.06    0.904  0.30( 0.27) 0.91    3711.5   21400.00
    20      3363.00   63.57    0.763  0.30( 0.26) 0.88    5288.8   13210.00
    21      3362.27   63.69    0.762  0.30( 0.26) 0.88    5298.2   13200.00
    22      3315.89   66.31    0.745  0.30( 0.26) 0.88    5460.3   13100.00
    23      2727.71   96.86    0.602  0.30( 0.26) 0.86    6753.1   13000.00
    24      2665.48   99.40    0.594  0.30( 0.26) 0.86    6771.8   13010.00
  TOTAL AREA(ACRES) =      6771.8

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     3363.00  Tc(MIN.) =   63.574
 EFFECTIVE AREA(ACRES) =   5288.84  AREA-AVERAGED Fm(INCH/HR) =  0.26
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.91
 TOTAL AREA(ACRES) =     6771.8
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    220.00  DOWNSTREAM(FEET) =    215.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   925.62   CHANNEL SLOPE =  0.0054
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   6.28
 CHANNEL FLOW THRU SUBAREA(CFS) =    3363.00
 FLOW VELOCITY(FEET/SEC.) =   7.79   FLOW DEPTH(FEET) =   6.28
 TRAVEL TIME(MIN.) =   1.98   Tc(MIN.) =   65.56
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 3 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610212V.DNA
 MEMORY BANK #  3 DEFINED AS FOLLOWS:
  STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)  (MIN.)  (INCH/HR)           (ACRES)     NODE
     1      224.62   37.40  0.30( 0.30) 1.00      342.8   21200.00
   TOTAL AREA(ACRES) =      342.8
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================
```

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2564.59	23.44	1.337	0.30(0.28)	0.95	1373.2	30900.00
2	2566.57	23.49	1.335	0.30(0.28)	0.95	1376.5	30910.00
3	2624.62	24.99	1.290	0.30(0.28)	0.95	1481.9	31000.00
4	2669.82	26.29	1.253	0.30(0.28)	0.95	1567.8	30800.00
5	2728.86	28.04	1.209	0.30(0.28)	0.94	1693.3	30700.00
6	2776.82	29.73	1.170	0.30(0.28)	0.94	1812.1	30600.00
7	2938.59	36.17	1.048	0.30(0.28)	0.94	2284.9	21300.00
8	2938.95	36.18	1.047	0.30(0.28)	0.94	2286.0	30520.00
9	2973.88	37.43	1.028	0.30(0.28)	0.94	2402.1	30410.00
10	2978.88	37.65	1.024	0.30(0.28)	0.94	2421.0	30540.00
11	3001.84	39.07	1.003	0.30(0.28)	0.94	2531.4	30510.00
12	3013.45	39.87	0.992	0.30(0.28)	0.93	2590.8	30210.00
13	3028.32	40.13	0.988	0.30(0.28)	0.93	2627.8	30200.00
14	3050.92	40.60	0.982	0.30(0.28)	0.93	2692.4	30500.00
15	3119.69	42.12	0.962	0.30(0.28)	0.93	2892.9	30100.00
16	3127.86	42.36	0.959	0.30(0.28)	0.92	2923.4	30400.00
17	3196.31	44.44	0.933	0.30(0.28)	0.92	3183.7	30110.00
18	3242.00	48.01	0.893	0.30(0.27)	0.91	3599.1	30300.00
19	3250.74	49.06	0.883	0.30(0.27)	0.91	3711.5	21400.00
20	3363.00	65.56	0.750	0.30(0.26)	0.88	5288.8	13210.00
21	3362.27	65.67	0.749	0.30(0.26)	0.88	5298.2	13200.00
22	3315.89	68.30	0.733	0.30(0.26)	0.88	5460.3	13100.00
23	2727.71	98.97	0.595	0.30(0.26)	0.86	6753.1	13000.00
24	2665.48	101.53	0.587	0.30(0.26)	0.86	6771.8	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13308.00 =   48763.66 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	224.62	37.40	1.028	0.30(0.30)	1.00	342.8	21200.00

LONGEST FLOWPATH FROM NODE 21200.00 TO NODE 13308.00 =   11049.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2765.07	23.44	1.337	0.30(0.29)	0.95	1588.1	30900.00
2	2767.15	23.49	1.335	0.30(0.29)	0.95	1591.8	30910.00
3	2828.60	24.99	1.290	0.30(0.29)	0.95	1710.9	31000.00
4	2876.56	26.29	1.253	0.30(0.29)	0.95	1808.7	30800.00
5	2939.05	28.04	1.209	0.30(0.29)	0.95	1950.4	30700.00
6	2990.09	29.73	1.170	0.30(0.29)	0.95	2084.6	30600.00
7	3161.64	36.17	1.048	0.30(0.28)	0.95	2616.4	21300.00
8	3162.02	36.18	1.047	0.30(0.28)	0.95	2617.6	30520.00
9	3197.67	37.40	1.028	0.30(0.28)	0.95	2742.1	21200.00
10	3198.36	37.43	1.028	0.30(0.28)	0.95	2744.9	30410.00
11	3202.31	37.65	1.024	0.30(0.28)	0.95	2763.8	30540.00
12	3218.77	39.07	1.003	0.30(0.28)	0.94	2874.2	30510.00
13	3226.90	39.87	0.992	0.30(0.28)	0.94	2933.6	30210.00
14	3240.63	40.13	0.988	0.30(0.28)	0.94	2970.6	30200.00

15	3261.26	40.60	0.982	0.30(0.28)	0.94	3035.2	30500.00
16	3323.82	42.12	0.962	0.30(0.28)	0.93	3235.6	30100.00
17	3331.04	42.36	0.959	0.30(0.28)	0.93	3266.2	30400.00
18	3391.66	44.44	0.933	0.30(0.28)	0.93	3526.5	30110.00
19	3425.11	48.01	0.893	0.30(0.28)	0.92	3941.9	30300.00
20	3430.50	49.06	0.883	0.30(0.27)	0.92	4054.3	21400.00
21	3501.83	65.56	0.750	0.30(0.27)	0.89	5631.6	13210.00
22	3500.88	65.67	0.749	0.30(0.27)	0.89	5641.0	13200.00
23	3449.46	68.30	0.733	0.30(0.27)	0.88	5803.0	13100.00
24	2818.73	98.97	0.595	0.30(0.26)	0.87	7095.9	13000.00
25	2753.89	101.53	0.587	0.30(0.26)	0.87	7114.6	13010.00

TOTAL AREA(ACRES) = 7114.6

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 3501.83 Tc(MIN.) = 65.556
EFFECTIVE AREA(ACRES) = 5631.62 AREA-AVERAGED Fm(INCH/HR) = 0.27
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.92
TOTAL AREA(ACRES) = 7114.6
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13308.00 = 48763.66 FEET.

```
****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =     7114.6  TC(MIN.) =     65.56
  EFFECTIVE AREA(ACRES) =   5631.62  AREA-AVERAGED Fm(INCH/HR)=  0.27
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap = 0.887
  PEAK FLOW RATE(CFS)   =    3501.83
```

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2765.07	23.44	1.337	0.30(0.29)	0.95	1588.1	30900.00
2	2767.15	23.49	1.335	0.30(0.29)	0.95	1591.8	30910.00
3	2828.60	24.99	1.290	0.30(0.29)	0.95	1710.9	31000.00
4	2876.56	26.29	1.253	0.30(0.29)	0.95	1808.7	30800.00
5	2939.05	28.04	1.209	0.30(0.29)	0.95	1950.4	30700.00
6	2990.09	29.73	1.170	0.30(0.29)	0.95	2084.6	30600.00
7	3161.64	36.17	1.048	0.30(0.28)	0.95	2616.4	21300.00
8	3162.02	36.18	1.047	0.30(0.28)	0.95	2617.6	30520.00
9	3197.67	37.40	1.028	0.30(0.28)	0.95	2742.1	21200.00
10	3198.36	37.43	1.028	0.30(0.28)	0.95	2744.9	30410.00
11	3202.31	37.65	1.024	0.30(0.28)	0.95	2763.8	30540.00
12	3218.77	39.07	1.003	0.30(0.28)	0.94	2874.2	30510.00
13	3226.90	39.87	0.992	0.30(0.28)	0.94	2933.6	30210.00
14	3240.63	40.13	0.988	0.30(0.28)	0.94	2970.6	30200.00
15	3261.26	40.60	0.982	0.30(0.28)	0.94	3035.2	30500.00
16	3323.82	42.12	0.962	0.30(0.28)	0.93	3235.6	30100.00
17	3331.04	42.36	0.959	0.30(0.28)	0.93	3266.2	30400.00

18	3391.66	44.44	0.933	0.30(0.28)	0.93	3526.5	30110.00
19	3425.11	48.01	0.893	0.30(0.28)	0.92	3941.9	30300.00
20	3430.50	49.06	0.883	0.30(0.27)	0.92	4054.3	21400.00
21	3501.83	65.56	0.750	0.30(0.27)	0.89	5631.6	13210.00
22	3500.88	65.67	0.749	0.30(0.27)	0.89	5641.0	13200.00
23	3449.46	68.30	0.733	0.30(0.27)	0.88	5803.0	13100.00
24	2818.73	98.97	0.595	0.30(0.26)	0.87	7095.9	13000.00
25	2753.89	101.53	0.587	0.30(0.26)	0.87	7114.6	13010.00

END OF RATIONAL METHOD ANALYSIS

```
******************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
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                          Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* GOBERNADORA WATERSHED STUDY - RATIONAL METHOD                         *
* LOCAL WATERSHED S33 - FREE DRAINING - EXISTING CONDITION              *
* 25-YR EV JULY 2017 JMITAL                                             *
 ************************************************************************

  FILE NAME: RE25EV33.DAT
  TIME/DATE OF STUDY: 14:49 07/26/2017
==============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  36.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S31X25.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     2430.15   35.90  0.30( 0.24) 0.81    2511.8   13100.00
      2     2369.17   61.84  0.30( 0.24) 0.81    3776.9   13000.00
      3     2335.44   64.17  0.30( 0.24) 0.81    3796.8   13010.00
    TOTAL AREA(ACRES) =     3796.8

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S32X25.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     1123.03   33.82  0.30( 0.25) 0.83    1121.5   13210.00
      2     1123.44   34.10  0.30( 0.25) 0.83    1127.6   13200.00
    TOTAL AREA(ACRES) =     1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 14.0
------------------------------------------------------------------------------
  >>>>>MEMORY BANK #  2 COPIED ONTO MAIN-STREAM MEMORY<<<<<
==============================================================================

  MAIN-STREAM MEMORY DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     1123.03   33.82  0.30( 0.25) 0.83    1121.5   13210.00
      2     1123.44   34.10  0.30( 0.25) 0.83    1127.6   13200.00
    TOTAL AREA(ACRES) =      1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE =  11
------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1123.03   33.82    1.357  0.30( 0.25) 0.83    1121.5   13210.00
      2     1123.44   34.10    1.351  0.30( 0.25) 0.83    1127.6   13200.00
  LONGEST FLOWPATH FROM NODE  13200.00 TO NODE  13222.00 =   16821.05 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2430.15   35.90    1.312  0.30( 0.24) 0.81    2511.8   13100.00
      2     2369.17   61.84    0.961  0.30( 0.24) 0.81    3776.9   13000.00
      3     2335.44   64.17    0.941  0.30( 0.24) 0.81    3796.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3510.27   33.82    1.357  0.30( 0.24) 0.82    3488.3   13210.00
      2     3516.44   34.10    1.351  0.30( 0.24) 0.82    3513.3   13200.00
      3     3513.58   35.90    1.312  0.30( 0.24) 0.82    3639.4   13100.00
      4     3094.81   61.84    0.961  0.30( 0.24) 0.81    4904.5   13000.00
```

```
      5     3040.55   64.17    0.941  0.30( 0.24) 0.81    4924.4   13010.00
    TOTAL AREA(ACRES) =      4924.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     3516.44  Tc(MIN.) =   34.096
  EFFECTIVE AREA(ACRES) =   3513.31  AREA-AVERAGED Fm(INCH/HR) =  0.24
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
  TOTAL AREA(ACRES) =     4924.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13222.00 TO NODE  13223.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    427.51  DOWNSTREAM(FEET) =    416.40
  CHANNEL LENGTH THRU SUBAREA(FEET) =   864.00   CHANNEL SLOPE =  0.0129
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.06
  CHANNEL FLOW THRU SUBAREA(CFS) =    3516.44
  FLOW VELOCITY(FEET/SEC.) =  10.66   FLOW DEPTH(FEET) =   5.06
  TRAVEL TIME(MIN.) =   1.35   Tc(MIN.) =   35.45
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3510.27   35.18    1.327  0.30( 0.24) 0.82    3488.3   13210.00
      2     3516.44   35.45    1.322  0.30( 0.24) 0.82    3513.3   13200.00
      3     3513.58   37.25    1.284  0.30( 0.24) 0.82    3639.4   13100.00
      4     3110.77   63.25    0.948  0.30( 0.24) 0.81    4904.5   13000.00
      5     3040.55   65.59    0.929  0.30( 0.24) 0.81    4924.4   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =    3516.44  Tc(MIN.) =   35.45
  AREA-AVERAGED Fm(INCH/HR) =  0.24  AREA-AVERAGED Fp(INCH/HR) =  0.30
  AREA-AVERAGED Ap =  0.82  EFFECTIVE AREA(ACRES) =    3513.31

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610301W.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       55.35   12.52  0.30( 0.30) 1.00      29.3   30100.00
      2       49.48   15.13  0.30( 0.30) 1.00      29.7   30110.00
    TOTAL AREA(ACRES) =       29.7
```



```
****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3510.27   35.18    1.327  0.30( 0.24) 0.82    3488.3   13210.00
      2     3516.44   35.45    1.322  0.30( 0.24) 0.82    3513.3   13200.00
      3     3513.58   37.25    1.284  0.30( 0.24) 0.82    3639.4   13100.00
      4     3110.77   63.25    0.948  0.30( 0.24) 0.81    4904.5   13000.00
      5     3040.55   65.59    0.929  0.30( 0.24) 0.81    4924.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       55.35   12.52    2.399  0.30( 0.30) 1.00      29.3   30100.00
      2       49.48   15.13    2.152  0.30( 0.30) 1.00      29.7   30110.00
  LONGEST FLOWPATH FROM NODE  30110.00 TO NODE  13223.00 =    2058.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2541.41   12.52    2.399  0.30( 0.25) 0.82    1270.7   30100.00
      2     2709.97   15.13    2.152  0.30( 0.25) 0.82    1530.1   30110.00
      3     3537.72   35.18    1.327  0.30( 0.25) 0.82    3517.9   13210.00
      4     3543.73   35.45    1.322  0.30( 0.25) 0.82    3543.0   13200.00
      5     3539.87   37.25    1.284  0.30( 0.25) 0.82    3669.0   13100.00
      6     3128.09   63.25    0.948  0.30( 0.24) 0.81    4934.2   13000.00
      7     3057.35   65.59    0.929  0.30( 0.24) 0.81    4954.1   13010.00
    TOTAL AREA(ACRES) =      4954.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     3543.73  Tc(MIN.) =   35.447
  EFFECTIVE AREA(ACRES) =   3542.99  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
  TOTAL AREA(ACRES) =     4954.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13224.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    416.40  DOWNSTREAM(FEET) =    410.60
  CHANNEL LENGTH THRU SUBAREA(FEET) =   408.51   CHANNEL SLOPE =  0.0142
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.95
  CHANNEL FLOW THRU SUBAREA(CFS) =    3543.73
  FLOW VELOCITY(FEET/SEC.) =  11.05   FLOW DEPTH(FEET) =   4.95
  TRAVEL TIME(MIN.) =   0.62   Tc(MIN.) =   36.06
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.
```

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2541.41	13.20	2.327	0.30(0.25)	0.82	1270.7	30100.00
2	2709.97	15.80	2.100	0.30(0.25)	0.82	1530.1	30110.00
3	3537.72	35.79	1.314	0.30(0.25)	0.82	3517.9	13210.00
4	3543.73	36.06	1.309	0.30(0.25)	0.82	3543.0	13200.00
5	3539.87	37.87	1.272	0.30(0.25)	0.82	3669.0	13100.00
6	3128.09	63.89	0.943	0.30(0.24)	0.81	4934.2	13000.00
7	3057.35	66.23	0.924	0.30(0.24)	0.81	4954.1	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 3543.73 Tc(MIN.) = 36.06
AREA-AVERAGED Fm(INCH/HR) = 0.25 AREA-AVERAGED Fp(INCH/HR) = 0.30
AREA-AVERAGED Ap = 0.82 EFFECTIVE AREA(ACRES) = 3542.99

****
FLOW PROCESS FROM NODE 13224.00 TO NODE 13224.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13224.00 TO NODE 13224.00 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610302W.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	25.13	10.56	0.30(0.30)	1.00	11.9	30210.00
2	24.87	10.90	0.30(0.30)	1.00	12.0	30200.00

TOTAL AREA(ACRES) = 12.0

****
FLOW PROCESS FROM NODE 13224.00 TO NODE 13224.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2541.41	13.20	2.327	0.30(0.25)	0.82	1270.7	30100.00
2	2709.97	15.80	2.100	0.30(0.25)	0.82	1530.1	30110.00
3	3537.72	35.79	1.314	0.30(0.25)	0.82	3517.9	13210.00
4	3543.73	36.06	1.309	0.30(0.25)	0.82	3543.0	13200.00
5	3539.87	37.87	1.272	0.30(0.25)	0.82	3669.0	13100.00
6	3128.09	63.89	0.943	0.30(0.24)	0.81	4934.2	13000.00
7	3057.35	66.23	0.924	0.30(0.24)	0.81	4954.1	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13224.00 = 33399.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	25.13	10.56	2.645	0.30(0.30)	1.00	11.9	30210.00
2	24.87	10.90	2.597	0.30(0.30)	1.00	12.0	30200.00

LONGEST FLOWPATH FROM NODE 30200.00 TO NODE 13224.00 = 1209.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	2368.27	10.56	2.645	0.30(0.25)	0.82	1028.4	30210.00
2	2395.57	10.90	2.597	0.30(0.25)	0.82	1061.4	30200.00
3	2563.36	13.20	2.327	0.30(0.25)	0.82	1282.7	30100.00
4	2729.45	15.80	2.100	0.30(0.25)	0.82	1542.1	30110.00
5	3548.70	35.79	1.314	0.30(0.25)	0.82	3530.0	13210.00
6	3554.65	36.06	1.309	0.30(0.25)	0.82	3555.0	13200.00
7	3550.40	37.87	1.272	0.30(0.25)	0.82	3681.1	13100.00
8	3135.05	63.89	0.943	0.30(0.24)	0.81	4946.2	13000.00
9	3064.10	66.23	0.924	0.30(0.24)	0.81	4966.1	13010.00

TOTAL AREA(ACRES) = 4966.1

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 3554.65 Tc(MIN.) = 36.063
EFFECTIVE AREA(ACRES) = 3555.02 AREA-AVERAGED Fm(INCH/HR) = 0.25
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.82
TOTAL AREA(ACRES) = 4966.1
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13224.00 = 33399.00 FEET.

****
FLOW PROCESS FROM NODE 13224.00 TO NODE 13301.00 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 410.60 DOWNSTREAM(FEET) = 382.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1260.70 CHANNEL SLOPE = 0.0227
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 4.37
* 10 YEAR RAINFALL INTENSITY(INCH/HR) = 1.276
SUBAREA LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN
USER-DEFINED	-	61.66	0.30	0.998	-

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.30
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.998
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3581.75
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 13.02
AVERAGE FLOW DEPTH(FEET) = 4.36 TRAVEL TIME(MIN.) = 1.61
Tc(MIN.) = 37.68
SUBAREA AREA(ACRES) = 61.66 SUBAREA RUNOFF(CFS) = 54.21
EFFECTIVE AREA(ACRES) = 3616.68 AREA-AVERAGED Fm(INCH/HR) = 0.25
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.82
TOTAL AREA(ACRES) = 5027.8 PEAK FLOW RATE(CFS) = 3554.65
NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 4.34

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 4.34 FLOW VELOCITY(FEET/SEC.) = 12.98
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13301.00 = 34659.70 FEET.

** PEAK FLOW RATE TABLE **

```
 STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
 NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
    1      2368.27   12.39     2.413  0.30( 0.25) 0.83     1090.0   30210.00
    2      2395.57   12.73     2.377  0.30( 0.25) 0.83     1123.0   30200.00
    3      2563.36   14.99     2.164  0.30( 0.25) 0.83     1344.4   30100.00
    4      2729.45   17.55     1.977  0.30( 0.25) 0.83     1603.8   30110.00
    5      3548.70   37.41     1.281  0.30( 0.25) 0.82     3591.6   13210.00
    6      3554.65   37.68     1.276  0.30( 0.25) 0.82     3616.7   13200.00
    7      3550.40   39.48     1.242  0.30( 0.25) 0.82     3742.7   13100.00
    8      3135.05   65.57     0.929  0.30( 0.24) 0.82     5007.9   13000.00
    9      3064.10   67.93     0.910  0.30( 0.24) 0.82     5027.8   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =    3554.65  Tc(MIN.) =   37.68
  AREA-AVERAGED Fm(INCH/HR) =  0.25  AREA-AVERAGED Fp(INCH/HR) =  0.30
  AREA-AVERAGED Ap =  0.82  EFFECTIVE AREA(ACRES) =    3616.68

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610303W.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER     (CFS) (MIN.)   (INCH/HR)           (ACRES)     NODE
      1      221.40   21.08  0.30( 0.30) 1.00      166.2   30300.00
    TOTAL AREA(ACRES) =      166.2

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1      2368.27   12.39     2.413  0.30( 0.25) 0.83     1090.0   30210.00
      2      2395.57   12.73     2.377  0.30( 0.25) 0.83     1123.0   30200.00
      3      2563.36   14.99     2.164  0.30( 0.25) 0.83     1344.4   30100.00
      4      2729.45   17.55     1.977  0.30( 0.25) 0.83     1603.8   30110.00
      5      3548.70   37.41     1.281  0.30( 0.25) 0.82     3591.6   13210.00
      6      3554.65   37.68     1.276  0.30( 0.25) 0.82     3616.7   13200.00
      7      3550.40   39.48     1.242  0.30( 0.25) 0.82     3742.7   13100.00
      8      3135.05   65.57     0.929  0.30( 0.24) 0.82     5007.9   13000.00
      9      3064.10   67.93     0.910  0.30( 0.24) 0.82     5027.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1      221.40   21.08     1.780  0.30( 0.30) 1.00      166.2   30300.00
  LONGEST FLOWPATH FROM NODE  30300.00 TO NODE  13301.00 =    6391.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1      2554.14   12.39     2.413  0.30( 0.25) 0.85     1187.8   30210.00
```



```
      2      2583.15   12.73     2.377  0.30( 0.25) 0.85     1223.4   30200.00
      3      2761.65   14.99     2.164  0.30( 0.25) 0.84     1462.6   30100.00
      4      2938.34   17.55     1.977  0.30( 0.25) 0.84     1742.2   30110.00
      5      3096.39   21.08     1.780  0.30( 0.25) 0.84     2123.1   30300.00
      6      3695.52   37.41     1.281  0.30( 0.25) 0.83     3757.8   13210.00
      7      3700.68   37.68     1.276  0.30( 0.25) 0.83     3782.9   13200.00
      8      3691.39   39.48     1.242  0.30( 0.25) 0.83     3908.9   13100.00
      9      3229.15   65.57     0.929  0.30( 0.25) 0.82     5174.1   13000.00
     10      3155.42   67.93     0.910  0.30( 0.25) 0.82     5194.0   13010.00
    TOTAL AREA(ACRES) =      5194.0

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     3700.68  Tc(MIN.) =   37.677
  EFFECTIVE AREA(ACRES) =   3782.90  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.83
  TOTAL AREA(ACRES) =     5194.0
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    382.00  DOWNSTREAM(FEET) =    375.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1141.09   CHANNEL SLOPE =  0.0061
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.39
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  1.234
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -        9.42      0.30     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    3704.64
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.38
  AVERAGE FLOW DEPTH(FEET) =   6.39   TRAVEL TIME(MIN.) =   2.27
  Tc(MIN.) =   39.95
  SUBAREA AREA(ACRES) =     9.42       SUBAREA RUNOFF(CFS) =    7.92
  EFFECTIVE AREA(ACRES) =   3792.32     AREA-AVERAGED Fm(INCH/HR) =   0.25
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.83
  TOTAL AREA(ACRES) =     5203.4          PEAK FLOW RATE(CFS) =    3700.68
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.39

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  6.39   FLOW VELOCITY(FEET/SEC.) =   8.37
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
   NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1      2554.14   14.93     2.169  0.30( 0.25) 0.85     1197.2   30210.00
      2      2583.15   15.26     2.142  0.30( 0.25) 0.85     1232.8   30200.00
```

```
      3     2761.65   17.47    1.982  0.30( 0.25) 0.84    1472.0   30100.00
      4     2938.34   19.99    1.835  0.30( 0.25) 0.84    1751.6   30110.00
      5     3096.39   23.47    1.674  0.30( 0.25) 0.84    2132.5   30300.00
      6     3695.52   39.68    1.239  0.30( 0.25) 0.83    3767.3   13210.00
      7     3700.68   39.95    1.234  0.30( 0.25) 0.83    3792.3   13200.00
      8     3691.39   41.75    1.203  0.30( 0.25) 0.83    3918.4   13100.00
      9     3229.15   67.94    0.910  0.30( 0.25) 0.82    5183.5   13000.00
     10     3155.42   70.31    0.893  0.30( 0.25) 0.82    5203.4   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =    3700.68  Tc(MIN.) =   39.95
  AREA-AVERAGED Fm(INCH/HR) =  0.25  AREA-AVERAGED Fp(INCH/HR) =  0.30
  AREA-AVERAGED Ap =  0.83  EFFECTIVE AREA(ACRES) =    3792.32

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610214W.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      271.94   24.66  0.30( 0.30) 1.00     227.7   21400.00
    TOTAL AREA(ACRES) =      227.7

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2554.14   14.93    2.169  0.30( 0.25) 0.85    1197.2   30210.00
      2     2583.15   15.26    2.142  0.30( 0.25) 0.85    1232.8   30200.00
      3     2761.65   17.47    1.982  0.30( 0.25) 0.84    1472.0   30100.00
      4     2938.34   19.99    1.835  0.30( 0.25) 0.84    1751.6   30110.00
      5     3096.39   23.47    1.674  0.30( 0.25) 0.84    2132.5   30300.00
      6     3695.52   39.68    1.239  0.30( 0.25) 0.83    3767.3   13210.00
      7     3700.68   39.95    1.234  0.30( 0.25) 0.83    3792.3   13200.00
      8     3691.39   41.75    1.203  0.30( 0.25) 0.83    3918.4   13100.00
      9     3229.15   67.94    0.910  0.30( 0.25) 0.82    5183.5   13000.00
     10     3155.42   70.31    0.893  0.30( 0.25) 0.82    5203.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      271.94   24.66    1.627  0.30( 0.30) 1.00     227.7   21400.00
  LONGEST FLOWPATH FROM NODE  21400.00 TO NODE  13302.00 =    6708.00 FEET.
```



```
  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2786.05   14.93    2.169  0.30( 0.26) 0.86    1335.1   30210.00
      2     2816.74   15.26    2.142  0.30( 0.26) 0.86    1373.7   30200.00
      3     3005.89   17.47    1.982  0.30( 0.26) 0.86    1633.3   30100.00
      4     3193.32   19.99    1.835  0.30( 0.26) 0.86    1936.1   30110.00
      5     3364.35   23.47    1.674  0.30( 0.26) 0.86    2349.3   30300.00
      6     3412.11   24.66    1.627  0.30( 0.26) 0.85    2479.6   21400.00
      7     3887.93   39.68    1.239  0.30( 0.25) 0.84    3994.9   13210.00
      8     3892.12   39.95    1.234  0.30( 0.25) 0.84    4020.0   13200.00
      9     3876.50   41.75    1.203  0.30( 0.25) 0.84    4146.0   13100.00
     10     3354.25   67.94    0.910  0.30( 0.25) 0.83    5411.2   13000.00
     11     3276.89   70.31    0.893  0.30( 0.25) 0.83    5431.1   13010.00
    TOTAL AREA(ACRES) =      5431.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     3892.12  Tc(MIN.) =   39.946
  EFFECTIVE AREA(ACRES) =   4019.97  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.84
  TOTAL AREA(ACRES) =     5431.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13303.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    375.00  DOWNSTREAM(FEET) =    355.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2193.96   CHANNEL SLOPE =  0.0091
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.89
  CHANNEL FLOW THRU SUBAREA(CFS) =    3892.12
  FLOW VELOCITY(FEET/SEC.) =   9.77   FLOW DEPTH(FEET) =   5.89
  TRAVEL TIME(MIN.) =   3.74   Tc(MIN.) =   43.69
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2786.05   19.09    1.884  0.30( 0.26) 0.86    1335.1   30210.00
      2     2816.74   19.40    1.867  0.30( 0.26) 0.86    1373.7   30200.00
      3     3005.89   21.53    1.759  0.30( 0.26) 0.86    1633.3   30100.00
      4     3193.32   23.96    1.654  0.30( 0.26) 0.86    1936.1   30110.00
      5     3364.35   27.39    1.532  0.30( 0.26) 0.86    2349.3   30300.00
      6     3412.11   28.56    1.496  0.30( 0.26) 0.85    2479.6   21400.00
      7     3887.93   43.42    1.176  0.30( 0.25) 0.84    3994.9   13210.00
      8     3892.12   43.69    1.172  0.30( 0.25) 0.84    4020.0   13200.00
      9     3876.50   45.50    1.145  0.30( 0.25) 0.84    4146.0   13100.00
     10     3354.25   71.86    0.881  0.30( 0.25) 0.83    5411.2   13000.00
     11     3276.89   74.25    0.865  0.30( 0.25) 0.83    5431.1   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =    3892.12  Tc(MIN.) =   43.69
  AREA-AVERAGED Fm(INCH/HR) =  0.25  AREA-AVERAGED Fp(INCH/HR) =  0.30
  AREA-AVERAGED Ap =  0.84  EFFECTIVE AREA(ACRES) =    4019.97
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610213W.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)   (INCH/HR)          (ACRES)    NODE
      1      159.08   15.80  0.30( 0.30) 1.00      98.2   21300.00
    TOTAL AREA(ACRES) =       98.2

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2786.05   19.09    1.884  0.30( 0.26) 0.86    1335.1   30210.00
      2     2816.74   19.40    1.867  0.30( 0.26) 0.86    1373.7   30200.00
      3     3005.89   21.53    1.759  0.30( 0.26) 0.86    1633.3   30100.00
      4     3193.32   23.96    1.654  0.30( 0.26) 0.86    1936.1   30110.00
      5     3364.35   27.39    1.532  0.30( 0.26) 0.86    2349.3   30300.00
      6     3412.11   28.56    1.496  0.30( 0.26) 0.85    2479.6   21400.00
      7     3887.93   43.42    1.176  0.30( 0.25) 0.84    3994.9   13210.00
      8     3892.12   43.69    1.172  0.30( 0.25) 0.84    4020.0   13200.00
      9     3876.50   45.50    1.145  0.30( 0.25) 0.84    4146.0   13100.00
     10     3354.25   71.86    0.881  0.30( 0.25) 0.83    5411.2   13000.00
     11     3276.89   74.25    0.865  0.30( 0.25) 0.83    5431.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      159.08   15.80    2.099  0.30( 0.30) 1.00      98.2   21300.00
  LONGEST FLOWPATH FROM NODE  21300.00 TO NODE  13303.00 =    2988.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2771.20   15.80    2.099  0.30( 0.26) 0.87    1203.5   21300.00
      2     2926.09   19.09    1.884  0.30( 0.26) 0.87    1433.3   30210.00
      3     2955.24   19.40    1.867  0.30( 0.26) 0.87    1471.9   30200.00
      4     3134.83   21.53    1.759  0.30( 0.26) 0.87    1731.5   30100.00
      5     3313.01   23.96    1.654  0.30( 0.26) 0.86    2034.3   30110.00
      6     3473.26   27.39    1.532  0.30( 0.26) 0.86    2447.5   30300.00
      7     3517.83   28.56    1.496  0.30( 0.26) 0.86    2577.9   21400.00
      8     3965.41   43.42    1.176  0.30( 0.25) 0.84    4093.1   13210.00
      9     3969.24   43.69    1.172  0.30( 0.25) 0.84    4118.2   13200.00
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     10     3951.23   45.50    1.145  0.30( 0.25) 0.84    4244.2   13100.00
     11     3405.66   71.86    0.881  0.30( 0.25) 0.83    5509.4   13000.00
     12     3326.85   74.25    0.865  0.30( 0.25) 0.83    5529.3   13010.00
   TOTAL AREA(ACRES) =      5529.3

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     3969.24  Tc(MIN.) =   43.689
  EFFECTIVE AREA(ACRES) =   4118.19  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.84
  TOTAL AREA(ACRES) =     5529.3
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13304.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    355.00  DOWNSTREAM(FEET) =    350.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.40   CHANNEL SLOPE =  0.0054
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.88
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  1.144
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
        LAND USE           GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       13.84      0.30     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    3974.50
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.19
  AVERAGE FLOW DEPTH(FEET) =   6.87   TRAVEL TIME(MIN.) =   1.88
  Tc(MIN.) =   45.57
  SUBAREA AREA(ACRES) =    13.84       SUBAREA RUNOFF(CFS) =   10.52
  EFFECTIVE AREA(ACRES) =   4132.03     AREA-AVERAGED Fm(INCH/HR) =   0.25
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.84
  TOTAL AREA(ACRES) =     5543.1         PEAK FLOW RATE(CFS) =    3969.24
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.87

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  6.87   FLOW VELOCITY(FEET/SEC.) =   8.18
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2771.20   17.90    1.955  0.30( 0.26) 0.88    1217.3   21300.00
      2     2926.09   21.15    1.776  0.30( 0.26) 0.87    1447.1   30210.00
      3     2955.24   21.46    1.762  0.30( 0.26) 0.87    1485.8   30200.00
      4     3134.83   23.55    1.670  0.30( 0.26) 0.87    1745.4   30100.00
      5     3313.01   25.95    1.580  0.30( 0.26) 0.86    2048.2   30110.00
      6     3473.26   29.35    1.472  0.30( 0.26) 0.86    2461.3   30300.00
      7     3517.83   30.51    1.440  0.30( 0.26) 0.86    2591.7   21400.00
      8     3965.41   45.31    1.148  0.30( 0.25) 0.84    4107.0   13210.00
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      9     3969.24   45.57    1.144  0.30( 0.25) 0.84    4132.0   13200.00
     10     3951.23   47.39    1.119  0.30( 0.25) 0.84    4258.1   13100.00
     11     3405.66   73.83    0.868  0.30( 0.25) 0.83    5523.2   13000.00
     12     3326.85   76.24    0.852  0.30( 0.25) 0.83    5543.1   13010.00
  NEW PEAK FLOW DATA ARE:
  PEAK FLOW RATE(CFS) =    3969.24  Tc(MIN.) =   45.57
  AREA-AVERAGED Fm(INCH/HR) =  0.25  AREA-AVERAGED Fp(INCH/HR) =  0.30
  AREA-AVERAGED Ap =  0.84  EFFECTIVE AREA(ACRES) =    4132.03

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 3 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610304W.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      234.43   19.10  0.30( 0.30) 1.00     164.5   30410.00
      2      221.93   24.07  0.30( 0.30) 1.00     182.7   30400.00
    TOTAL AREA(ACRES) =      182.7

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2771.20   17.90    1.955  0.30( 0.26) 0.88    1217.3   21300.00
      2     2926.09   21.15    1.776  0.30( 0.26) 0.87    1447.1   30210.00
      3     2955.24   21.46    1.762  0.30( 0.26) 0.87    1485.8   30200.00
      4     3134.83   23.55    1.670  0.30( 0.26) 0.87    1745.4   30100.00
      5     3313.01   25.95    1.580  0.30( 0.26) 0.86    2048.2   30110.00
      6     3473.26   29.35    1.472  0.30( 0.26) 0.86    2461.3   30300.00
      7     3517.83   30.51    1.440  0.30( 0.26) 0.86    2591.7   21400.00
      8     3965.41   45.31    1.148  0.30( 0.25) 0.84    4107.0   13210.00
      9     3969.24   45.57    1.144  0.30( 0.25) 0.84    4132.0   13200.00
     10     3951.23   47.39    1.119  0.30( 0.25) 0.84    4258.1   13100.00
     11     3405.66   73.83    0.868  0.30( 0.25) 0.83    5523.2   13000.00
     12     3326.85   76.24    0.852  0.30( 0.25) 0.83    5543.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      234.43   19.10    1.883  0.30( 0.30) 1.00     164.5   30410.00
      2      221.93   24.07    1.650  0.30( 0.30) 1.00     182.7   30400.00
  LONGEST FLOWPATH FROM NODE  30400.00 TO NODE  13304.00 =    5899.00 FEET.
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  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3000.79   17.90    1.955  0.30( 0.27) 0.89    1371.5   21300.00
      2     3062.89   19.10    1.883  0.30( 0.27) 0.89    1466.8   30410.00
      3     3155.36   21.15    1.776  0.30( 0.27) 0.89    1619.2   30210.00
      4     3183.75   21.46    1.762  0.30( 0.27) 0.89    1658.9   30200.00
      5     3358.08   23.55    1.670  0.30( 0.26) 0.88    1926.2   30100.00
      6     3395.43   24.07    1.650  0.30( 0.26) 0.88    1993.8   30400.00
      7     3523.50   25.95    1.580  0.30( 0.26) 0.88    2230.9   30110.00
      8     3666.06   29.35    1.472  0.30( 0.26) 0.87    2644.0   30300.00
      9     3705.33   30.51    1.440  0.30( 0.26) 0.87    2774.4   21400.00
     10     4104.89   45.31    1.148  0.30( 0.25) 0.85    4289.7   13210.00
     11     4108.09   45.57    1.144  0.30( 0.25) 0.85    4314.7   13200.00
     12     4085.92   47.39    1.119  0.30( 0.25) 0.85    4440.8   13100.00
     13     3499.06   73.83    0.868  0.30( 0.25) 0.84    5705.9   13000.00
     14     3417.65   76.24    0.852  0.30( 0.25) 0.84    5725.8   13010.00
    TOTAL AREA(ACRES) =      5725.8

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4108.09  Tc(MIN.) =   45.571
  EFFECTIVE AREA(ACRES) =   4314.74  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
  TOTAL AREA(ACRES) =     5725.8
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13305.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    350.00  DOWNSTREAM(FEET) =    315.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2966.27   CHANNEL SLOPE =  0.0118
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.66
  *  10 YEAR RAINFALL INTENSITY(INCH/HR) =  1.084
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED                -       27.39      0.30     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    4117.75
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  10.87
  AVERAGE FLOW DEPTH(FEET) =   5.66   TRAVEL TIME(MIN.) =   4.55
  Tc(MIN.) =   50.12
  SUBAREA AREA(ACRES) =    27.39       SUBAREA RUNOFF(CFS) =   19.32
  EFFECTIVE AREA(ACRES) =   4342.13     AREA-AVERAGED Fm(INCH/HR) =   0.26
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.85
  TOTAL AREA(ACRES) =     5753.2         PEAK FLOW RATE(CFS) =    4108.09
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.65

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
```

DEPTH(FEET) = 5.65 FLOW VELOCITY(FEET/SEC.) = 10.86
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.00 = 41886.42 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3000.79	22.91	1.697	0.30(0.27)	0.89	1398.9	21300.00
2	3062.89	24.09	1.649	0.30(0.27)	0.89	1494.2	30410.00
3	3155.36	26.09	1.575	0.30(0.27)	0.89	1646.6	30210.00
4	3183.75	26.38	1.565	0.30(0.27)	0.89	1686.3	30200.00
5	3358.08	28.39	1.501	0.30(0.26)	0.88	1953.5	30100.00
6	3395.43	28.90	1.486	0.30(0.26)	0.88	2021.2	30400.00
7	3523.50	30.72	1.434	0.30(0.26)	0.88	2258.3	30110.00
8	3666.06	34.06	1.352	0.30(0.26)	0.87	2671.4	30300.00
9	3705.33	35.20	1.327	0.30(0.26)	0.87	2801.8	21400.00
10	4104.89	49.86	1.087	0.30(0.26)	0.85	4317.1	13210.00
11	4108.09	50.12	1.084	0.30(0.26)	0.85	4342.1	13200.00
12	4085.92	51.94	1.062	0.30(0.25)	0.85	4468.2	13100.00
13	3499.06	78.61	0.837	0.30(0.25)	0.84	5733.3	13000.00
14	3417.65	81.06	0.823	0.30(0.25)	0.84	5753.2	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 4108.09 Tc(MIN.) = 50.12
AREA-AVERAGED Fm(INCH/HR) = 0.26 AREA-AVERAGED Fp(INCH/HR) = 0.30
AREA-AVERAGED Ap = 0.85 EFFECTIVE AREA(ACRES) = 4342.13

****
FLOW PROCESS FROM NODE 13305.00 TO NODE 13305.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13305.00 TO NODE 13305.00 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610305W.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	677.99	23.03	0.30(0.30)	1.00	541.2	30520.00
2	678.30	24.48	0.30(0.30)	1.00	565.1	30540.00
3	665.09	25.87	0.30(0.30)	1.00	576.1	30510.00
4	646.66	27.37	0.30(0.30)	1.00	582.8	30500.00

TOTAL AREA(ACRES) = 582.8

****
FLOW PROCESS FROM NODE 13305.00 TO NODE 13305.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3000.79	22.91	1.697	0.30(0.27)	0.89	1398.9	21300.00
2	3062.89	24.09	1.649	0.30(0.27)	0.89	1494.2	30410.00
3	3155.36	26.09	1.575	0.30(0.27)	0.89	1646.6	30210.00
4	3183.75	26.38	1.565	0.30(0.27)	0.89	1686.3	30200.00
5	3358.08	28.39	1.501	0.30(0.26)	0.88	1953.5	30100.00
6	3395.43	28.90	1.486	0.30(0.26)	0.88	2021.2	30400.00
7	3523.50	30.72	1.434	0.30(0.26)	0.88	2258.3	30110.00
8	3666.06	34.06	1.352	0.30(0.26)	0.87	2671.4	30300.00
9	3705.33	35.20	1.327	0.30(0.26)	0.87	2801.8	21400.00
10	4104.89	49.86	1.087	0.30(0.26)	0.85	4317.1	13210.00
11	4108.09	50.12	1.084	0.30(0.26)	0.85	4342.1	13200.00
12	4085.92	51.94	1.062	0.30(0.25)	0.85	4468.2	13100.00
13	3499.06	78.61	0.837	0.30(0.25)	0.84	5733.3	13000.00
14	3417.65	81.06	0.823	0.30(0.25)	0.84	5753.2	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.00 = 41886.42 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	677.99	23.03	1.692	0.30(0.30)	1.00	541.2	30520.00
2	678.30	24.48	1.634	0.30(0.30)	1.00	565.1	30540.00
3	665.09	25.87	1.583	0.30(0.30)	1.00	576.1	30510.00
4	646.66	27.37	1.533	0.30(0.30)	1.00	582.8	30500.00

LONGEST FLOWPATH FROM NODE 30500.00 TO NODE 13305.00 = 9458.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3677.70	22.91	1.697	0.30(0.28)	0.92	1937.2	21300.00
2	3685.13	23.03	1.692	0.30(0.28)	0.92	1949.8	30520.00
3	3741.10	24.09	1.649	0.30(0.28)	0.92	2052.8	30410.00
4	3759.54	24.48	1.634	0.30(0.28)	0.92	2089.5	30540.00
5	3810.43	25.87	1.583	0.30(0.28)	0.92	2206.1	30510.00
6	3817.77	26.09	1.575	0.30(0.28)	0.92	2223.6	30210.00
7	3842.59	26.38	1.565	0.30(0.27)	0.92	2264.6	30200.00
8	3916.04	27.37	1.533	0.30(0.27)	0.91	2400.4	30500.00
9	3988.02	28.39	1.501	0.30(0.27)	0.91	2536.4	30100.00
10	4017.37	28.90	1.486	0.30(0.27)	0.91	2604.0	30400.00
11	4118.64	30.72	1.434	0.30(0.27)	0.90	2841.1	30110.00
12	4217.96	34.06	1.352	0.30(0.27)	0.90	3254.3	30300.00
13	4243.99	35.20	1.327	0.30(0.27)	0.89	3384.6	21400.00
14	4517.69	49.86	1.087	0.30(0.26)	0.87	4899.9	13210.00
15	4519.17	50.12	1.084	0.30(0.26)	0.87	4925.0	13200.00
16	4485.48	51.94	1.062	0.30(0.26)	0.87	5051.0	13100.00
17	3780.92	78.61	0.837	0.30(0.26)	0.85	6316.2	13000.00
18	3691.86	81.06	0.823	0.30(0.26)	0.85	6336.1	13010.00

TOTAL AREA(ACRES) = 6336.1

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 4519.17 Tc(MIN.) = 50.121
EFFECTIVE AREA(ACRES) = 4924.97 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.90
TOTAL AREA(ACRES) = 6336.1
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.00 = 41886.42 FEET.

****
FLOW PROCESS FROM NODE 13305.00 TO NODE 13305.20 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========

ELEVATION DATA: UPSTREAM(FEET) = 315.00 DOWNSTREAM(FEET) = 284.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1317.91 CHANNEL SLOPE = 0.0235
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 4.92
CHANNEL FLOW THRU SUBAREA(CFS) = 4519.17
FLOW VELOCITY(FEET/SEC.) = 14.19 FLOW DEPTH(FEET) = 4.92
TRAVEL TIME(MIN.) = 1.55 Tc(MIN.) = 51.67
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.20 = 43204.33 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3677.70	24.56	1.631	0.30(0.28)	0.92	1937.2	21300.00
2	3685.13	24.68	1.626	0.30(0.28)	0.92	1949.8	30520.00
3	3741.10	25.73	1.588	0.30(0.28)	0.92	2052.8	30410.00
4	3759.54	26.13	1.574	0.30(0.28)	0.92	2089.5	30540.00
5	3810.43	27.51	1.528	0.30(0.28)	0.92	2206.1	30510.00
6	3817.77	27.72	1.521	0.30(0.28)	0.92	2223.6	30210.00
7	3842.59	28.01	1.512	0.30(0.27)	0.92	2264.6	30200.00
8	3916.04	28.99	1.483	0.30(0.27)	0.91	2400.4	30500.00
9	3988.02	30.00	1.454	0.30(0.27)	0.91	2536.4	30100.00
10	4017.37	30.51	1.440	0.30(0.27)	0.91	2604.0	30400.00
11	4118.64	32.31	1.393	0.30(0.27)	0.90	2841.1	30110.00
12	4217.96	35.64	1.317	0.30(0.27)	0.90	3254.3	30300.00
13	4243.99	36.78	1.294	0.30(0.27)	0.89	3384.6	21400.00
14	4517.69	51.41	1.068	0.30(0.26)	0.87	4899.9	13210.00
15	4519.17	51.67	1.065	0.30(0.26)	0.87	4925.0	13200.00
16	4485.48	53.50	1.044	0.30(0.26)	0.87	5051.0	13100.00
17	3780.92	80.25	0.827	0.30(0.26)	0.85	6316.2	13000.00
18	3691.86	82.71	0.813	0.30(0.26)	0.85	6336.1	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 4519.17 Tc(MIN.) = 51.67
AREA-AVERAGED Fm(INCH/HR) = 0.26 AREA-AVERAGED Fp(INCH/HR) = 0.30
AREA-AVERAGED Ap = 0.87 EFFECTIVE AREA(ACRES) = 4924.97

****
FLOW PROCESS FROM NODE 13305.20 TO NODE 13305.20 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13305.20 TO NODE 13305.20 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610306W.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	58.15	18.79	0.30(0.30)	1.00	40.4	30600.00

TOTAL AREA(ACRES) = 40.4

****
FLOW PROCESS FROM NODE 13305.20 TO NODE 13305.20 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3677.70	24.56	1.631	0.30(0.28)	0.92	1937.2	21300.00
2	3685.13	24.68	1.626	0.30(0.28)	0.92	1949.8	30520.00
3	3741.10	25.73	1.588	0.30(0.28)	0.92	2052.8	30410.00
4	3759.54	26.13	1.574	0.30(0.28)	0.92	2089.5	30540.00
5	3810.43	27.51	1.528	0.30(0.28)	0.92	2206.1	30510.00
6	3817.77	27.72	1.521	0.30(0.28)	0.92	2223.6	30210.00
7	3842.59	28.01	1.512	0.30(0.27)	0.92	2264.6	30200.00
8	3916.04	28.99	1.483	0.30(0.27)	0.91	2400.4	30500.00
9	3988.02	30.00	1.454	0.30(0.27)	0.91	2536.4	30100.00
10	4017.37	30.51	1.440	0.30(0.27)	0.91	2604.0	30400.00
11	4118.64	32.31	1.393	0.30(0.27)	0.90	2841.1	30110.00
12	4217.96	35.64	1.317	0.30(0.27)	0.90	3254.3	30300.00
13	4243.99	36.78	1.294	0.30(0.27)	0.89	3384.6	21400.00
14	4517.69	51.41	1.068	0.30(0.26)	0.87	4899.9	13210.00
15	4519.17	51.67	1.065	0.30(0.26)	0.87	4925.0	13200.00
16	4485.48	53.50	1.044	0.30(0.26)	0.87	5051.0	13100.00
17	3780.92	80.25	0.827	0.30(0.26)	0.85	6316.2	13000.00
18	3691.86	82.71	0.813	0.30(0.26)	0.85	6336.1	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.20 = 43204.33 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	58.15	18.79	1.901	0.30(0.30)	1.00	40.4	30600.00

LONGEST FLOWPATH FROM NODE 30600.00 TO NODE 13305.20 = 2948.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3433.56	18.79	1.901	0.30(0.28)	0.92	1522.2	30600.00
2	3726.02	24.56	1.631	0.30(0.28)	0.92	1977.6	21300.00
3	3733.29	24.68	1.626	0.30(0.28)	0.92	1990.2	30520.00
4	3787.87	25.73	1.588	0.30(0.28)	0.92	2093.1	30410.00
5	3805.80	26.13	1.574	0.30(0.28)	0.92	2129.9	30540.00
6	3855.03	27.51	1.528	0.30(0.28)	0.92	2246.4	30510.00
7	3862.13	27.72	1.521	0.30(0.28)	0.92	2263.9	30210.00
8	3886.62	28.01	1.512	0.30(0.28)	0.92	2305.0	30200.00
9	3959.00	28.99	1.483	0.30(0.27)	0.91	2440.8	30500.00
10	4029.93	30.00	1.454	0.30(0.27)	0.91	2576.7	30100.00
11	4058.78	30.51	1.440	0.30(0.27)	0.91	2644.4	30400.00
12	4158.35	32.31	1.393	0.30(0.27)	0.90	2881.5	30110.00
13	4254.91	35.64	1.317	0.30(0.27)	0.90	3294.6	30300.00
14	4280.08	36.78	1.294	0.30(0.27)	0.89	3425.0	21400.00
15	4545.58	51.41	1.068	0.30(0.26)	0.87	4940.3	13210.00
16	4546.95	51.67	1.065	0.30(0.26)	0.87	4965.3	13200.00
17	4512.49	53.50	1.044	0.30(0.26)	0.87	5091.4	13100.00
18	3800.08	80.25	0.827	0.30(0.26)	0.86	6356.5	13000.00
19	3710.50	82.71	0.813	0.30(0.26)	0.85	6376.4	13010.00

TOTAL AREA(ACRES) = 6376.4

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 4546.95 Tc(MIN.) = 51.669
EFFECTIVE AREA(ACRES) = 4965.32 AREA-AVERAGED Fm(INCH/HR) = 0.26

AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.87
TOTAL AREA(ACRES) = 6376.4
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.20 = 43204.33 FEET.

****
FLOW PROCESS FROM NODE 13305.20 TO NODE 13305.40 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==
ELEVATION DATA: UPSTREAM(FEET) = 284.00 DOWNSTREAM(FEET) = 274.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 826.37 CHANNEL SLOPE = 0.0121
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 5.93
CHANNEL FLOW THRU SUBAREA(CFS) = 4546.95
FLOW VELOCITY(FEET/SEC.) = 11.30 FLOW DEPTH(FEET) = 5.93
TRAVEL TIME(MIN.) = 1.22 Tc(MIN.) = 52.89
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.40 = 44030.70 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3433.56	20.12	1.828	0.30(0.28)	0.92	1522.2	30600.00
2	3726.02	25.86	1.583	0.30(0.28)	0.92	1977.6	21300.00
3	3733.29	25.98	1.579	0.30(0.28)	0.92	1990.2	30520.00
4	3787.87	27.02	1.544	0.30(0.28)	0.92	2093.1	30410.00
5	3805.80	27.41	1.531	0.30(0.28)	0.92	2129.9	30540.00
6	3855.03	28.79	1.489	0.30(0.28)	0.92	2246.4	30510.00
7	3862.13	29.00	1.482	0.30(0.28)	0.92	2263.9	30210.00
8	3886.62	29.29	1.474	0.30(0.28)	0.92	2305.0	30200.00
9	3959.00	30.26	1.447	0.30(0.27)	0.91	2440.8	30500.00
10	4029.93	31.26	1.420	0.30(0.27)	0.91	2576.7	30100.00
11	4058.78	31.77	1.407	0.30(0.27)	0.91	2644.4	30400.00
12	4158.35	33.57	1.363	0.30(0.27)	0.90	2881.5	30110.00
13	4254.91	36.89	1.292	0.30(0.27)	0.90	3294.6	30300.00
14	4280.08	38.02	1.269	0.30(0.27)	0.89	3425.0	21400.00
15	4545.58	52.63	1.054	0.30(0.26)	0.87	4940.3	13210.00
16	4546.95	52.89	1.051	0.30(0.26)	0.87	4965.3	13200.00
17	4512.49	54.72	1.030	0.30(0.26)	0.87	5091.4	13100.00
18	3800.08	81.54	0.820	0.30(0.26)	0.86	6356.5	13000.00
19	3710.50	84.01	0.806	0.30(0.26)	0.85	6376.4	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 4546.95 Tc(MIN.) = 52.89
AREA-AVERAGED Fm(INCH/HR) = 0.26 AREA-AVERAGED Fp(INCH/HR) = 0.30
AREA-AVERAGED Ap = 0.87 EFFECTIVE AREA(ACRES) = 4965.32

****
FLOW PROCESS FROM NODE 13305.40 TO NODE 13305.40 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==

****
FLOW PROCESS FROM NODE 13305.40 TO NODE 13305.40 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==

PEAK FLOWRATE TABLE FILE NAME: 0610307W.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	143.58	18.34	0.30(0.30)	1.00	98.0	30700.00

TOTAL AREA(ACRES) = 98.0

****
FLOW PROCESS FROM NODE 13305.40 TO NODE 13305.40 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3433.56	20.12	1.828	0.30(0.28)	0.92	1522.2	30600.00
2	3726.02	25.86	1.583	0.30(0.28)	0.92	1977.6	21300.00
3	3733.29	25.98	1.579	0.30(0.28)	0.92	1990.2	30520.00
4	3787.87	27.02	1.544	0.30(0.28)	0.92	2093.1	30410.00
5	3805.80	27.41	1.531	0.30(0.28)	0.92	2129.9	30540.00
6	3855.03	28.79	1.489	0.30(0.28)	0.92	2246.4	30510.00
7	3862.13	29.00	1.482	0.30(0.28)	0.92	2263.9	30210.00
8	3886.62	29.29	1.474	0.30(0.28)	0.92	2305.0	30200.00
9	3959.00	30.26	1.447	0.30(0.27)	0.91	2440.8	30500.00
10	4029.93	31.26	1.420	0.30(0.27)	0.91	2576.7	30100.00
11	4058.78	31.77	1.407	0.30(0.27)	0.91	2644.4	30400.00
12	4158.35	33.57	1.363	0.30(0.27)	0.90	2881.5	30110.00
13	4254.91	36.89	1.292	0.30(0.27)	0.90	3294.6	30300.00
14	4280.08	38.02	1.269	0.30(0.27)	0.89	3425.0	21400.00
15	4545.58	52.63	1.054	0.30(0.26)	0.87	4940.3	13210.00
16	4546.95	52.89	1.051	0.30(0.26)	0.87	4965.3	13200.00
17	4512.49	54.72	1.030	0.30(0.26)	0.87	5091.4	13100.00
18	3800.08	81.54	0.820	0.30(0.26)	0.86	6356.5	13000.00
19	3710.50	84.01	0.806	0.30(0.26)	0.85	6376.4	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.40 = 44030.70 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	143.58	18.34	1.928	0.30(0.30)	1.00	98.0	30700.00

LONGEST FLOWPATH FROM NODE 30700.00 TO NODE 13305.40 = 5192.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3474.53	18.34	1.928	0.30(0.28)	0.93	1485.7	30700.00
2	3568.35	20.12	1.828	0.30(0.28)	0.93	1620.2	30600.00
3	3839.22	25.86	1.583	0.30(0.28)	0.93	2075.6	21300.00
4	3846.11	25.98	1.579	0.30(0.28)	0.93	2088.2	30520.00
5	3897.59	27.02	1.544	0.30(0.28)	0.93	2191.1	30410.00
6	3914.40	27.41	1.531	0.30(0.28)	0.92	2227.9	30540.00
7	3959.89	28.79	1.489	0.30(0.28)	0.92	2344.4	30510.00
8	3966.43	29.00	1.482	0.30(0.28)	0.92	2361.9	30210.00
9	3990.20	29.29	1.474	0.30(0.28)	0.92	2403.0	30200.00
10	4060.17	30.26	1.447	0.30(0.28)	0.92	2538.8	30500.00
11	4128.73	31.26	1.420	0.30(0.27)	0.91	2674.7	30100.00
12	4156.44	31.77	1.407	0.30(0.27)	0.91	2742.4	30400.00

```
    13     4252.16   33.57    1.363  0.30( 0.27) 0.91    2979.5   30110.00
    14     4342.39   36.89    1.292  0.30( 0.27) 0.90    3392.6   30300.00
    15     4365.60   38.02    1.269  0.30( 0.27) 0.90    3523.0   21400.00
    16     4612.07   52.63    1.054  0.30( 0.26) 0.87    5038.3   13210.00
    17     4613.17   52.89    1.051  0.30( 0.26) 0.87    5063.3   13200.00
    18     4576.93   54.72    1.030  0.30( 0.26) 0.87    5189.4   13100.00
    19     3845.94   81.54    0.820  0.30( 0.26) 0.86    6454.5   13000.00
    20     3755.14   84.01    0.806  0.30( 0.26) 0.86    6474.4   13010.00
  TOTAL AREA(ACRES) =      6474.4

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     4613.17  Tc(MIN.) =   52.887
 EFFECTIVE AREA(ACRES) =   5063.33  AREA-AVERAGED Fm(INCH/HR) =  0.26
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
 TOTAL AREA(ACRES) =     6474.4
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.60 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    274.00  DOWNSTREAM(FEET) =    258.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   733.85   CHANNEL SLOPE =  0.0218
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   5.08
 CHANNEL FLOW THRU SUBAREA(CFS) =    4613.17
 FLOW VELOCITY(FEET/SEC.) =  13.91   FLOW DEPTH(FEET) =   5.08
 TRAVEL TIME(MIN.) =   0.88   Tc(MIN.) =   53.77
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.60 =   44764.55 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     3474.53   19.30    1.872  0.30( 0.28) 0.93    1485.7   30700.00
     2     3568.35   21.07    1.780  0.30( 0.28) 0.93    1620.2   30600.00
     3     3839.22   26.79    1.552  0.30( 0.28) 0.93    2075.6   21300.00
     4     3846.11   26.91    1.548  0.30( 0.28) 0.93    2088.2   30520.00
     5     3897.59   27.95    1.514  0.30( 0.28) 0.93    2191.1   30410.00
     6     3914.40   28.34    1.502  0.30( 0.28) 0.92    2227.9   30540.00
     7     3959.89   29.71    1.462  0.30( 0.28) 0.92    2344.4   30510.00
     8     3966.43   29.93    1.456  0.30( 0.28) 0.92    2361.9   30210.00
     9     3990.20   30.21    1.448  0.30( 0.28) 0.92    2403.0   30200.00
    10     4060.17   31.17    1.422  0.30( 0.28) 0.92    2538.8   30500.00
    11     4128.73   32.18    1.397  0.30( 0.27) 0.91    2674.7   30100.00
    12     4156.44   32.68    1.385  0.30( 0.27) 0.91    2742.4   30400.00
    13     4252.16   34.47    1.343  0.30( 0.27) 0.91    2979.5   30110.00
    14     4342.39   37.78    1.274  0.30( 0.27) 0.90    3392.6   30300.00
    15     4365.60   38.92    1.253  0.30( 0.27) 0.90    3523.0   21400.00
    16     4612.07   53.51    1.044  0.30( 0.26) 0.87    5038.3   13210.00
    17     4613.17   53.77    1.041  0.30( 0.26) 0.87    5063.3   13200.00
    18     4576.93   55.60    1.021  0.30( 0.26) 0.87    5189.4   13100.00
    19     3845.94   82.47    0.815  0.30( 0.26) 0.86    6454.5   13000.00
    20     3755.14   84.95    0.801  0.30( 0.26) 0.86    6474.4   13010.00
 NEW PEAK FLOW DATA ARE:
 PEAK FLOW RATE(CFS) =    4613.17  Tc(MIN.) =   53.77
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 AREA-AVERAGED Fm(INCH/HR) =  0.26  AREA-AVERAGED Fp(INCH/HR) =  0.30
 AREA-AVERAGED Ap =  0.87  EFFECTIVE AREA(ACRES) =    5063.33

****************************************************************************
 FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610308W.DNA
 MEMORY BANK #  1 DEFINED AS FOLLOWS:
  STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
     1       97.17   17.73  0.30( 0.30) 1.00      64.8   30800.00
   TOTAL AREA(ACRES) =       64.8

****************************************************************************
 FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     3474.53   19.30    1.872  0.30( 0.28) 0.93    1485.7   30700.00
     2     3568.35   21.07    1.780  0.30( 0.28) 0.93    1620.2   30600.00
     3     3839.22   26.79    1.552  0.30( 0.28) 0.93    2075.6   21300.00
     4     3846.11   26.91    1.548  0.30( 0.28) 0.93    2088.2   30520.00
     5     3897.59   27.95    1.514  0.30( 0.28) 0.93    2191.1   30410.00
     6     3914.40   28.34    1.502  0.30( 0.28) 0.92    2227.9   30540.00
     7     3959.89   29.71    1.462  0.30( 0.28) 0.92    2344.4   30510.00
     8     3966.43   29.93    1.456  0.30( 0.28) 0.92    2361.9   30210.00
     9     3990.20   30.21    1.448  0.30( 0.28) 0.92    2403.0   30200.00
    10     4060.17   31.17    1.422  0.30( 0.28) 0.92    2538.8   30500.00
    11     4128.73   32.18    1.397  0.30( 0.27) 0.91    2674.7   30100.00
    12     4156.44   32.68    1.385  0.30( 0.27) 0.91    2742.4   30400.00
    13     4252.16   34.47    1.343  0.30( 0.27) 0.91    2979.5   30110.00
    14     4342.39   37.78    1.274  0.30( 0.27) 0.90    3392.6   30300.00
    15     4365.60   38.92    1.253  0.30( 0.27) 0.90    3523.0   21400.00
    16     4612.07   53.51    1.044  0.30( 0.26) 0.87    5038.3   13210.00
    17     4613.17   53.77    1.041  0.30( 0.26) 0.87    5063.3   13200.00
    18     4576.93   55.60    1.021  0.30( 0.26) 0.87    5189.4   13100.00
    19     3845.94   82.47    0.815  0.30( 0.26) 0.86    6454.5   13000.00
    20     3755.14   84.95    0.801  0.30( 0.26) 0.86    6474.4   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.60 =   44764.55 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1       97.17   17.73    1.966  0.30( 0.30) 1.00      64.8   30800.00
 LONGEST FLOWPATH FROM NODE  30800.00 TO NODE  13305.60 =    4165.00 FEET.
```

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3475.77	17.73	1.966	0.30(0.28)	0.93	1429.5	30800.00
2	3566.26	19.30	1.872	0.30(0.28)	0.93	1550.5	30700.00
3	3654.73	21.07	1.780	0.30(0.28)	0.93	1685.1	30600.00
4	3912.24	26.79	1.552	0.30(0.28)	0.93	2140.4	21300.00
5	3918.90	26.91	1.548	0.30(0.28)	0.93	2153.0	30520.00
6	3968.44	27.95	1.514	0.30(0.28)	0.93	2255.9	30410.00
7	3984.55	28.34	1.502	0.30(0.28)	0.93	2292.7	30540.00
8	4027.69	29.71	1.462	0.30(0.28)	0.92	2409.3	30510.00
9	4033.89	29.93	1.456	0.30(0.28)	0.92	2426.8	30210.00
10	4057.20	30.21	1.448	0.30(0.28)	0.92	2467.8	30200.00
11	4125.66	31.17	1.422	0.30(0.28)	0.92	2603.6	30500.00
12	4192.73	32.18	1.397	0.30(0.27)	0.92	2739.6	30100.00
13	4219.72	32.68	1.385	0.30(0.27)	0.91	2807.2	30400.00
14	4313.00	34.47	1.343	0.30(0.27)	0.91	3044.3	30110.00
15	4399.22	37.78	1.274	0.30(0.27)	0.90	3457.4	30300.00
16	4421.18	38.92	1.253	0.30(0.27)	0.90	3587.8	21400.00
17	4655.47	53.51	1.044	0.30(0.26)	0.87	5103.1	13210.00
18	4656.40	53.77	1.041	0.30(0.26)	0.87	5128.2	13200.00
19	4619.00	55.60	1.021	0.30(0.26)	0.87	5254.2	13100.00
20	3875.97	82.47	0.815	0.30(0.26)	0.86	6519.4	13000.00
21	3784.37	84.95	0.801	0.30(0.26)	0.86	6539.3	13010.00

TOTAL AREA(ACRES) = 6539.3

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 4656.40 Tc(MIN.) = 53.767
EFFECTIVE AREA(ACRES) = 5128.15 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.87
TOTAL AREA(ACRES) = 6539.3
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

****
FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.80 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 258.00 DOWNSTREAM(FEET) = 254.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 947.16 CHANNEL SLOPE = 0.0042
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 8.00
CHANNEL FLOW THRU SUBAREA(CFS) = 4656.40
FLOW VELOCITY(FEET/SEC.) = 7.87 FLOW DEPTH(FEET) = 8.00
TRAVEL TIME(MIN.) = 2.01 Tc(MIN.) = 55.77
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3475.77	19.92	1.839	0.30(0.28)	0.93	1429.5	30800.00
2	3566.26	21.47	1.761	0.30(0.28)	0.93	1550.5	30700.00
3	3654.73	23.23	1.684	0.30(0.28)	0.93	1685.1	30600.00
4	3912.24	28.90	1.486	0.30(0.28)	0.93	2140.4	21300.00
5	3918.90	29.02	1.482	0.30(0.28)	0.93	2153.0	30520.00
6	3968.44	30.05	1.453	0.30(0.28)	0.93	2255.9	30410.00

7	3984.55	30.44	1.442	0.30(0.28)	0.93	2292.7	30540.00
8	4027.69	31.81	1.406	0.30(0.28)	0.92	2409.3	30510.00
9	4033.89	32.02	1.401	0.30(0.28)	0.92	2426.8	30210.00
10	4057.20	32.30	1.394	0.30(0.28)	0.92	2467.8	30200.00
11	4125.66	33.25	1.371	0.30(0.28)	0.92	2603.6	30500.00
12	4192.73	34.24	1.348	0.30(0.27)	0.92	2739.6	30100.00
13	4219.72	34.74	1.337	0.30(0.27)	0.91	2807.2	30400.00
14	4313.00	36.52	1.299	0.30(0.27)	0.91	3044.3	30110.00
15	4399.22	39.82	1.236	0.30(0.27)	0.90	3457.4	30300.00
16	4421.18	40.95	1.217	0.30(0.27)	0.90	3587.8	21400.00
17	4655.47	55.51	1.022	0.30(0.26)	0.87	5103.1	13210.00
18	4656.40	55.77	1.019	0.30(0.26)	0.87	5128.2	13200.00
19	4619.00	57.61	1.000	0.30(0.26)	0.87	5254.2	13100.00
20	3875.97	84.59	0.803	0.30(0.26)	0.86	6519.4	13000.00
21	3784.37	87.08	0.790	0.30(0.26)	0.86	6539.3	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 4656.40 Tc(MIN.) = 55.77
AREA-AVERAGED Fm(INCH/HR) = 0.26 AREA-AVERAGED Fp(INCH/HR) = 0.30
AREA-AVERAGED Ap = 0.87 EFFECTIVE AREA(ACRES) = 5128.15

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610309W.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	100.28	17.33	0.30(0.30)	1.00	65.9	30900.00
2	100.18	17.37	0.30(0.30)	1.00	65.9	30910.00

TOTAL AREA(ACRES) = 65.9

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3475.77	19.92	1.839	0.30(0.28)	0.93	1429.5	30800.00
2	3566.26	21.47	1.761	0.30(0.28)	0.93	1550.5	30700.00
3	3654.73	23.23	1.684	0.30(0.28)	0.93	1685.1	30600.00
4	3912.24	28.90	1.486	0.30(0.28)	0.93	2140.4	21300.00
5	3918.90	29.02	1.482	0.30(0.28)	0.93	2153.0	30520.00
6	3968.44	30.05	1.453	0.30(0.28)	0.93	2255.9	30410.00
7	3984.55	30.44	1.442	0.30(0.28)	0.93	2292.7	30540.00
8	4027.69	31.81	1.406	0.30(0.28)	0.92	2409.3	30510.00
9	4033.89	32.02	1.401	0.30(0.28)	0.92	2426.8	30210.00
10	4057.20	32.30	1.394	0.30(0.28)	0.92	2467.8	30200.00

11	4125.66	33.25	1.371	0.30(0.28)	0.92	2603.6	30500.00
12	4192.73	34.24	1.348	0.30(0.27)	0.92	2739.6	30100.00
13	4219.72	34.74	1.337	0.30(0.27)	0.91	2807.2	30400.00
14	4313.00	36.52	1.299	0.30(0.27)	0.91	3044.3	30110.00
15	4399.22	39.82	1.236	0.30(0.27)	0.90	3457.4	30300.00
16	4421.18	40.95	1.217	0.30(0.27)	0.90	3587.8	21400.00
17	4655.47	55.51	1.022	0.30(0.26)	0.87	5103.1	13210.00
18	4656.40	55.77	1.019	0.30(0.26)	0.87	5128.2	13200.00
19	4619.00	57.61	1.000	0.30(0.26)	0.87	5254.2	13100.00
20	3875.97	84.59	0.803	0.30(0.26)	0.86	6519.4	13000.00
21	3784.37	87.08	0.790	0.30(0.26)	0.86	6539.3	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	100.28	17.33	1.991	0.30(0.30)	1.00	65.9	30900.00
2	100.18	17.37	1.989	0.30(0.30)	1.00	65.9	30910.00

LONGEST FLOWPATH FROM NODE 30900.00 TO NODE 13305.80 = 3403.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3420.57	17.33	1.991	0.30(0.28)	0.94	1309.7	30900.00
2	3423.12	17.37	1.989	0.30(0.28)	0.94	1312.7	30910.00
3	3567.06	19.92	1.839	0.30(0.28)	0.93	1495.4	30800.00
4	3652.94	21.47	1.761	0.30(0.28)	0.93	1616.4	30700.00
5	3736.82	23.23	1.684	0.30(0.28)	0.93	1751.0	30600.00
6	3982.57	28.90	1.486	0.30(0.28)	0.93	2206.3	21300.00
7	3989.03	29.02	1.482	0.30(0.28)	0.93	2218.9	30520.00
8	4036.82	30.05	1.453	0.30(0.28)	0.93	2321.9	30410.00
9	4052.30	30.44	1.442	0.30(0.28)	0.93	2358.6	30540.00
10	4093.32	31.81	1.406	0.30(0.28)	0.93	2475.2	30510.00
11	4099.19	32.02	1.401	0.30(0.28)	0.93	2492.7	30210.00
12	4122.10	32.30	1.394	0.30(0.28)	0.93	2533.7	30200.00
13	4189.19	33.25	1.371	0.30(0.28)	0.92	2669.5	30500.00
14	4254.90	34.24	1.348	0.30(0.28)	0.92	2805.5	30100.00
15	4281.24	34.74	1.337	0.30(0.27)	0.92	2873.1	30400.00
16	4372.28	36.52	1.299	0.30(0.27)	0.91	3110.2	30110.00
17	4454.76	39.82	1.236	0.30(0.27)	0.90	3523.4	30300.00
18	4475.56	40.95	1.217	0.30(0.27)	0.90	3653.7	21400.00
19	4698.30	55.51	1.022	0.30(0.26)	0.88	5169.0	13210.00
20	4699.07	55.77	1.019	0.30(0.26)	0.88	5194.1	13200.00
21	4660.56	57.61	1.000	0.30(0.26)	0.87	5320.1	13100.00
22	3905.80	84.59	0.803	0.30(0.26)	0.86	6585.3	13000.00
23	3813.42	87.08	0.790	0.30(0.26)	0.86	6605.2	13010.00

TOTAL AREA(ACRES) = 6605.2

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 4699.07 Tc(MIN.) = 55.773
EFFECTIVE AREA(ACRES) = 5194.07 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.90
TOTAL AREA(ACRES) = 6605.2
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

****

FLOW PROCESS FROM NODE 13305.80 TO NODE 13306.00 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

==========

ELEVATION DATA: UPSTREAM(FEET) = 254.00 DOWNSTREAM(FEET) = 245.50
CHANNEL LENGTH THRU SUBAREA(FEET) = 583.12 CHANNEL SLOPE = 0.0146
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 5.76
* 10 YEAR RAINFALL INTENSITY(INCH/HR) = 1.011
SUBAREA LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN
USER-DEFINED	-	68.77	0.30	0.998	-

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.30
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.998
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4721.10
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 12.19
AVERAGE FLOW DEPTH(FEET) = 5.76 TRAVEL TIME(MIN.) = 0.80
Tc(MIN.) = 56.57
SUBAREA AREA(ACRES) = 68.77 SUBAREA RUNOFF(CFS) = 44.05
EFFECTIVE AREA(ACRES) = 5262.84 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.88
TOTAL AREA(ACRES) = 6673.9 PEAK FLOW RATE(CFS) = 4699.07
NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 5.74

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 5.74 FLOW VELOCITY(FEET/SEC.) = 12.17
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13306.00 = 46294.83 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3420.57	18.21	1.936	0.30(0.28)	0.94	1378.5	30900.00
2	3423.12	18.25	1.933	0.30(0.28)	0.94	1381.5	30910.00
3	3567.06	20.78	1.794	0.30(0.28)	0.94	1564.2	30800.00
4	3652.94	22.33	1.722	0.30(0.28)	0.94	1685.2	30700.00
5	3736.82	24.08	1.649	0.30(0.28)	0.94	1819.8	30600.00
6	3982.57	29.74	1.461	0.30(0.28)	0.93	2275.1	21300.00
7	3989.03	29.86	1.458	0.30(0.28)	0.93	2287.7	30520.00
8	4036.82	30.89	1.430	0.30(0.28)	0.93	2390.6	30410.00
9	4052.30	31.27	1.420	0.30(0.28)	0.93	2427.4	30540.00
10	4093.32	32.64	1.386	0.30(0.28)	0.93	2544.0	30510.00
11	4099.19	32.85	1.380	0.30(0.28)	0.93	2561.5	30210.00
12	4122.10	33.13	1.374	0.30(0.28)	0.93	2602.5	30200.00
13	4189.19	34.08	1.352	0.30(0.28)	0.92	2738.3	30500.00
14	4254.90	35.06	1.330	0.30(0.28)	0.92	2874.3	30100.00
15	4281.24	35.56	1.319	0.30(0.28)	0.92	2941.9	30400.00
16	4372.28	37.34	1.283	0.30(0.27)	0.91	3179.0	30110.00
17	4454.76	40.63	1.222	0.30(0.27)	0.91	3592.1	30300.00
18	4475.56	41.76	1.203	0.30(0.27)	0.90	3722.5	21400.00
19	4698.30	56.31	1.014	0.30(0.26)	0.88	5237.8	13210.00
20	4699.07	56.57	1.011	0.30(0.26)	0.88	5262.8	13200.00
21	4660.56	58.41	0.993	0.30(0.26)	0.88	5388.9	13100.00
22	3905.80	85.43	0.798	0.30(0.26)	0.86	6654.0	13000.00
23	3813.42	87.93	0.785	0.30(0.26)	0.86	6673.9	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 4699.07 Tc(MIN.) = 56.57
AREA-AVERAGED Fm(INCH/HR) = 0.26 AREA-AVERAGED Fp(INCH/HR) = 0.30
AREA-AVERAGED Ap = 0.88 EFFECTIVE AREA(ACRES) = 5262.84

****
FLOW PROCESS FROM NODE 13306.00 TO NODE 13307.00 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 245.50 DOWNSTREAM(FEET) = 220.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1543.21 CHANNEL SLOPE = 0.0165
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 5.54
CHANNEL FLOW THRU SUBAREA(CFS) = 4699.07
FLOW VELOCITY(FEET/SEC.) = 12.72 FLOW DEPTH(FEET) = 5.54
TRAVEL TIME(MIN.) = 2.02 Tc(MIN.) = 58.59
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13307.00 = 47838.04 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3420.57	20.44	1.811	0.30(0.28)	0.94	1378.5	30900.00
2	3423.12	20.48	1.809	0.30(0.28)	0.94	1381.5	30910.00
3	3567.06	22.99	1.694	0.30(0.28)	0.94	1564.2	30800.00
4	3652.94	24.52	1.632	0.30(0.28)	0.94	1685.2	30700.00
5	3736.82	26.25	1.570	0.30(0.28)	0.94	1819.8	30600.00
6	3982.57	31.87	1.405	0.30(0.28)	0.93	2275.1	21300.00
7	3989.03	31.99	1.402	0.30(0.28)	0.93	2287.7	30520.00
8	4036.82	33.01	1.377	0.30(0.28)	0.93	2390.6	30410.00
9	4052.30	33.39	1.368	0.30(0.28)	0.93	2427.4	30540.00
10	4093.32	34.75	1.337	0.30(0.28)	0.93	2544.0	30510.00
11	4099.19	34.96	1.332	0.30(0.28)	0.93	2561.5	30210.00
12	4122.10	35.23	1.326	0.30(0.28)	0.93	2602.5	30200.00
13	4189.19	36.18	1.306	0.30(0.28)	0.92	2738.3	30500.00
14	4254.90	37.15	1.286	0.30(0.28)	0.92	2874.3	30100.00
15	4281.24	37.64	1.277	0.30(0.28)	0.92	2941.9	30400.00
16	4372.28	39.40	1.244	0.30(0.27)	0.91	3179.0	30110.00
17	4454.76	42.69	1.188	0.30(0.27)	0.91	3592.1	30300.00
18	4475.56	43.82	1.170	0.30(0.27)	0.90	3722.5	21400.00
19	4698.30	58.33	0.993	0.30(0.26)	0.88	5237.8	13210.00
20	4699.07	58.59	0.991	0.30(0.26)	0.88	5262.8	13200.00
21	4660.56	60.44	0.973	0.30(0.26)	0.88	5388.9	13100.00
22	3905.80	87.57	0.787	0.30(0.26)	0.86	6654.0	13000.00
23	3813.42	90.09	0.774	0.30(0.26)	0.86	6673.9	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 4699.07 Tc(MIN.) = 58.59
AREA-AVERAGED Fm(INCH/HR) = 0.26 AREA-AVERAGED Fp(INCH/HR) = 0.30
AREA-AVERAGED Ap = 0.88 EFFECTIVE AREA(ACRES) = 5262.84

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13307.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<
==========

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13307.00 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 2 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610310W.DNA
MEMORY BANK # 2 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	127.02	21.91	0.30(0.30)	1.00	97.9	31000.00

TOTAL AREA(ACRES) = 97.9

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13307.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3420.57	20.44	1.811	0.30(0.28)	0.94	1378.5	30900.00
2	3423.12	20.48	1.809	0.30(0.28)	0.94	1381.5	30910.00
3	3567.06	22.99	1.694	0.30(0.28)	0.94	1564.2	30800.00
4	3652.94	24.52	1.632	0.30(0.28)	0.94	1685.2	30700.00
5	3736.82	26.25	1.570	0.30(0.28)	0.94	1819.8	30600.00
6	3982.57	31.87	1.405	0.30(0.28)	0.93	2275.1	21300.00
7	3989.03	31.99	1.402	0.30(0.28)	0.93	2287.7	30520.00
8	4036.82	33.01	1.377	0.30(0.28)	0.93	2390.6	30410.00
9	4052.30	33.39	1.368	0.30(0.28)	0.93	2427.4	30540.00
10	4093.32	34.75	1.337	0.30(0.28)	0.93	2544.0	30510.00
11	4099.19	34.96	1.332	0.30(0.28)	0.93	2561.5	30210.00
12	4122.10	35.23	1.326	0.30(0.28)	0.93	2602.5	30200.00
13	4189.19	36.18	1.306	0.30(0.28)	0.92	2738.3	30500.00
14	4254.90	37.15	1.286	0.30(0.28)	0.92	2874.3	30100.00
15	4281.24	37.64	1.277	0.30(0.28)	0.92	2941.9	30400.00
16	4372.28	39.40	1.244	0.30(0.27)	0.91	3179.0	30110.00
17	4454.76	42.69	1.188	0.30(0.27)	0.91	3592.1	30300.00
18	4475.56	43.82	1.170	0.30(0.27)	0.90	3722.5	21400.00
19	4698.30	58.33	0.993	0.30(0.26)	0.88	5237.8	13210.00
20	4699.07	58.59	0.991	0.30(0.26)	0.88	5262.8	13200.00
21	4660.56	60.44	0.973	0.30(0.26)	0.88	5388.9	13100.00
22	3905.80	87.57	0.787	0.30(0.26)	0.86	6654.0	13000.00
23	3813.42	90.09	0.774	0.30(0.26)	0.86	6673.9	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13307.00 = 47838.04 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	127.02	21.91	1.741	0.30(0.30)	1.00	97.9	31000.00

LONGEST FLOWPATH FROM NODE 31000.00 TO NODE 13307.00 = 5162.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3544.88	20.44	1.811	0.30(0.28)	0.94	1469.8	30900.00
2	3547.50	20.48	1.809	0.30(0.28)	0.94	1473.0	30910.00
3	3632.15	21.91	1.741	0.30(0.28)	0.94	1583.5	31000.00

4	3689.91	22.99	1.694	0.30(0.28)	0.94	1662.1	30800.00
5	3770.39	24.52	1.632	0.30(0.28)	0.94	1783.1	30700.00
6	3848.75	26.25	1.570	0.30(0.28)	0.94	1917.6	30600.00
7	4079.95	31.87	1.405	0.30(0.28)	0.94	2373.0	21300.00
8	4086.15	31.99	1.402	0.30(0.28)	0.94	2385.6	30520.00
9	4131.73	33.01	1.377	0.30(0.28)	0.93	2488.5	30410.00
10	4146.42	33.39	1.368	0.30(0.28)	0.93	2525.3	30540.00
11	4184.72	34.75	1.337	0.30(0.28)	0.93	2641.8	30510.00
12	4190.19	34.96	1.332	0.30(0.28)	0.93	2659.3	30210.00
13	4212.56	35.23	1.326	0.30(0.28)	0.93	2700.4	30200.00
14	4277.90	36.18	1.306	0.30(0.28)	0.93	2836.2	30500.00
15	4341.88	37.15	1.286	0.30(0.28)	0.92	2972.1	30100.00
16	4367.36	37.64	1.277	0.30(0.28)	0.92	3039.8	30400.00
17	4455.49	39.40	1.244	0.30(0.27)	0.92	3276.9	30110.00
18	4533.06	42.69	1.188	0.30(0.27)	0.91	3690.0	30300.00
19	4552.31	43.82	1.170	0.30(0.27)	0.91	3820.4	21400.00
20	4759.46	58.33	0.993	0.30(0.26)	0.88	5335.7	13210.00
21	4760.01	58.59	0.991	0.30(0.26)	0.88	5360.7	13200.00
22	4719.96	60.44	0.973	0.30(0.26)	0.88	5486.8	13100.00
23	3948.78	87.57	0.787	0.30(0.26)	0.86	6751.9	13000.00
24	3855.28	90.09	0.774	0.30(0.26)	0.86	6771.8	13010.00

TOTAL AREA(ACRES) = 6771.8

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 4760.01 Tc(MIN.) = 58.592
EFFECTIVE AREA(ACRES) = 5360.72 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.88
TOTAL AREA(ACRES) = 6771.8
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13307.00 = 47838.04 FEET.

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13308.00 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 220.00 DOWNSTREAM(FEET) = 215.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 925.62 CHANNEL SLOPE = 0.0054
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 7.58
CHANNEL FLOW THRU SUBAREA(CFS) = 4760.01
FLOW VELOCITY(FEET/SEC.) = 8.63 FLOW DEPTH(FEET) = 7.58
TRAVEL TIME(MIN.) = 1.79 Tc(MIN.) = 60.38
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13308.00 = 48763.66 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3544.88	22.39	1.719	0.30(0.28)	0.94	1469.8	30900.00
2	3547.50	22.43	1.718	0.30(0.28)	0.94	1473.0	30910.00
3	3632.15	23.85	1.659	0.30(0.28)	0.94	1583.5	31000.00
4	3689.91	24.92	1.617	0.30(0.28)	0.94	1662.1	30800.00
5	3770.39	26.43	1.563	0.30(0.28)	0.94	1783.1	30700.00
6	3848.75	28.15	1.508	0.30(0.28)	0.94	1917.6	30600.00
7	4079.95	33.74	1.359	0.30(0.28)	0.94	2373.0	21300.00
8	4086.15	33.85	1.357	0.30(0.28)	0.94	2385.6	30520.00
9	4131.73	34.87	1.334	0.30(0.28)	0.93	2488.5	30410.00

10	4146.42	35.25	1.326	0.30(0.28)	0.93	2525.3	30540.00
11	4184.72	36.60	1.297	0.30(0.28)	0.93	2641.8	30510.00
12	4190.19	36.81	1.293	0.30(0.28)	0.93	2659.3	30210.00
13	4212.56	37.08	1.288	0.30(0.28)	0.93	2700.4	30200.00
14	4277.90	38.02	1.270	0.30(0.28)	0.93	2836.2	30500.00
15	4341.88	38.99	1.251	0.30(0.28)	0.92	2972.1	30100.00
16	4367.36	39.48	1.242	0.30(0.28)	0.92	3039.8	30400.00
17	4455.49	41.23	1.212	0.30(0.27)	0.92	3276.9	30110.00
18	4533.06	44.50	1.160	0.30(0.27)	0.91	3690.0	30300.00
19	4552.31	45.63	1.144	0.30(0.27)	0.91	3820.4	21400.00
20	4759.46	60.12	0.976	0.30(0.26)	0.88	5335.7	13210.00
21	4760.01	60.38	0.974	0.30(0.26)	0.88	5360.7	13200.00
22	4719.96	62.23	0.957	0.30(0.26)	0.88	5486.8	13100.00
23	3948.78	89.46	0.777	0.30(0.26)	0.86	6751.9	13000.00
24	3855.28	91.99	0.765	0.30(0.26)	0.86	6771.8	13010.00

NEW PEAK FLOW DATA ARE:
PEAK FLOW RATE(CFS) = 4760.01 Tc(MIN.) = 60.38
AREA-AVERAGED Fm(INCH/HR) = 0.26 AREA-AVERAGED Fp(INCH/HR) = 0.30
AREA-AVERAGED Ap = 0.88 EFFECTIVE AREA(ACRES) = 5360.72

****
FLOW PROCESS FROM NODE 13308.00 TO NODE 13308.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<
==========

****
FLOW PROCESS FROM NODE 13308.00 TO NODE 13308.00 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 3 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610212W.DNA
MEMORY BANK # 3 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	316.02	35.32	0.30(0.30)	1.00	342.8	21200.00

TOTAL AREA(ACRES) = 342.8

****
FLOW PROCESS FROM NODE 13308.00 TO NODE 13308.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3544.88	22.39	1.719	0.30(0.28)	0.94	1469.8	30900.00
2	3547.50	22.43	1.718	0.30(0.28)	0.94	1473.0	30910.00
3	3632.15	23.85	1.659	0.30(0.28)	0.94	1583.5	31000.00
4	3689.91	24.92	1.617	0.30(0.28)	0.94	1662.1	30800.00
5	3770.39	26.43	1.563	0.30(0.28)	0.94	1783.1	30700.00
6	3848.75	28.15	1.508	0.30(0.28)	0.94	1917.6	30600.00
7	4079.95	33.74	1.359	0.30(0.28)	0.94	2373.0	21300.00
8	4086.15	33.85	1.357	0.30(0.28)	0.94	2385.6	30520.00
9	4131.73	34.87	1.334	0.30(0.28)	0.93	2488.5	30410.00
10	4146.42	35.25	1.326	0.30(0.28)	0.93	2525.3	30540.00
11	4184.72	36.60	1.297	0.30(0.28)	0.93	2641.8	30510.00

12	4190.19	36.81	1.293	0.30(0.28)	0.93	2659.3	30210.00
13	4212.56	37.08	1.288	0.30(0.28)	0.93	2700.4	30200.00
14	4277.90	38.02	1.270	0.30(0.28)	0.93	2836.2	30500.00
15	4341.88	38.99	1.251	0.30(0.28)	0.92	2972.1	30100.00
16	4367.36	39.48	1.242	0.30(0.28)	0.92	3039.8	30400.00
17	4455.49	41.23	1.212	0.30(0.27)	0.92	3276.9	30110.00
18	4533.06	44.50	1.160	0.30(0.27)	0.91	3690.0	30300.00
19	4552.31	45.63	1.144	0.30(0.27)	0.91	3820.4	21400.00
20	4759.46	60.12	0.976	0.30(0.26)	0.88	5335.7	13210.00
21	4760.01	60.38	0.974	0.30(0.26)	0.88	5360.7	13200.00
22	4719.96	62.23	0.957	0.30(0.26)	0.88	5486.8	13100.00
23	3948.78	89.46	0.777	0.30(0.26)	0.86	6751.9	13000.00
24	3855.28	91.99	0.765	0.30(0.26)	0.86	6771.8	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13308.00 = 48763.66 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	316.02	35.32	1.324	0.30(0.30)	1.00	342.8	21200.00

LONGEST FLOWPATH FROM NODE 21200.00 TO NODE 13308.00 = 11049.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3822.53	22.39	1.719	0.30(0.28)	0.95	1687.2	30900.00
2	3825.29	22.43	1.718	0.30(0.28)	0.95	1690.7	30910.00
3	3915.14	23.85	1.659	0.30(0.28)	0.95	1814.9	31000.00
4	3976.64	24.92	1.617	0.30(0.28)	0.95	1903.9	30800.00
5	4062.14	26.43	1.563	0.30(0.28)	0.95	2039.6	30700.00
6	4145.84	28.15	1.508	0.30(0.28)	0.95	2190.9	30600.00
7	4392.21	33.74	1.359	0.30(0.28)	0.94	2700.4	21300.00
8	4398.69	33.85	1.357	0.30(0.28)	0.94	2714.1	30520.00
9	4446.71	34.87	1.334	0.30(0.28)	0.94	2827.0	30410.00
10	4462.29	35.25	1.326	0.30(0.28)	0.94	2867.4	30540.00
11	4464.28	35.32	1.324	0.30(0.28)	0.94	2873.7	21200.00
12	4492.44	36.60	1.297	0.30(0.28)	0.94	2984.6	30510.00
13	4496.60	36.81	1.293	0.30(0.28)	0.94	3002.1	30210.00
14	4517.31	37.08	1.288	0.30(0.28)	0.94	3043.2	30200.00
15	4577.03	38.02	1.270	0.30(0.28)	0.93	3178.9	30500.00
16	4635.39	38.99	1.251	0.30(0.28)	0.93	3314.9	30100.00
17	4658.13	39.48	1.242	0.30(0.28)	0.93	3382.5	30400.00
18	4736.86	41.23	1.212	0.30(0.28)	0.92	3619.7	30110.00
19	4798.41	44.50	1.160	0.30(0.27)	0.92	4032.8	30300.00
20	4812.56	45.63	1.144	0.30(0.27)	0.91	4163.2	21400.00
21	4968.15	60.12	0.976	0.30(0.27)	0.89	5678.4	13210.00
22	4967.94	60.38	0.974	0.30(0.27)	0.89	5703.5	13200.00
23	4922.74	62.23	0.957	0.30(0.27)	0.88	5829.5	13100.00
24	4096.11	89.46	0.777	0.30(0.26)	0.87	7094.7	13000.00
25	3998.81	91.99	0.765	0.30(0.26)	0.87	7114.6	13010.00

TOTAL AREA(ACRES) = 7114.6

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 4968.15 Tc(MIN.) = 60.117
EFFECTIVE AREA(ACRES) = 5678.44 AREA-AVERAGED Fm(INCH/HR) = 0.27
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.91
TOTAL AREA(ACRES) = 7114.6
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13308.00 = 48763.66 FEET.

****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13308.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
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****
FLOW PROCESS FROM NODE 13307.00 TO NODE 13308.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
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END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 7114.6 TC(MIN.) = 60.12
EFFECTIVE AREA(ACRES) = 5678.44 AREA-AVERAGED Fm(INCH/HR)= 0.27
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.887
PEAK FLOW RATE(CFS) = 4968.15

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3822.53	22.39	1.719	0.30(0.28)	0.95	1687.2	30900.00
2	3825.29	22.43	1.718	0.30(0.28)	0.95	1690.7	30910.00
3	3915.14	23.85	1.659	0.30(0.28)	0.95	1814.9	31000.00
4	3976.64	24.92	1.617	0.30(0.28)	0.95	1903.9	30800.00
5	4062.14	26.43	1.563	0.30(0.28)	0.95	2039.6	30700.00
6	4145.84	28.15	1.508	0.30(0.28)	0.95	2190.9	30600.00
7	4392.21	33.74	1.359	0.30(0.28)	0.94	2700.4	21300.00
8	4398.69	33.85	1.357	0.30(0.28)	0.94	2714.1	30520.00
9	4446.71	34.87	1.334	0.30(0.28)	0.94	2827.0	30410.00
10	4462.29	35.25	1.326	0.30(0.28)	0.94	2867.4	30540.00
11	4464.28	35.32	1.324	0.30(0.28)	0.94	2873.7	21200.00
12	4492.44	36.60	1.297	0.30(0.28)	0.94	2984.6	30510.00
13	4496.60	36.81	1.293	0.30(0.28)	0.94	3002.1	30210.00
14	4517.31	37.08	1.288	0.30(0.28)	0.94	3043.2	30200.00
15	4577.03	38.02	1.270	0.30(0.28)	0.93	3178.9	30500.00
16	4635.39	38.99	1.251	0.30(0.28)	0.93	3314.9	30100.00
17	4658.13	39.48	1.242	0.30(0.28)	0.93	3382.5	30400.00
18	4736.86	41.23	1.212	0.30(0.28)	0.92	3619.7	30110.00
19	4798.41	44.50	1.160	0.30(0.27)	0.92	4032.8	30300.00
20	4812.56	45.63	1.144	0.30(0.27)	0.91	4163.2	21400.00
21	4968.15	60.12	0.976	0.30(0.27)	0.89	5678.4	13210.00
22	4967.94	60.38	0.974	0.30(0.27)	0.89	5703.5	13200.00
23	4922.74	62.23	0.957	0.30(0.27)	0.88	5829.5	13100.00
24	4096.11	89.46	0.777	0.30(0.26)	0.87	7094.7	13000.00
25	3998.81	91.99	0.765	0.30(0.26)	0.87	7114.6	13010.00

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END OF RATIONAL METHOD ANALYSIS

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******************************************************************************
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                          Analysis prepared by:




 ************************ DESCRIPTION OF STUDY *************************
* GOBERNADORA WATERSHED STUDY - RATIONAL METHOD                        *
* LOCAL WATERSHED S33- FREE DRAINING - EXISTING CONDITION              *
* 50-YR EV JULY 2017 JMITAL                                           *
 ***********************************************************************

  FILE NAME: RE50EV33.DAT
  TIME/DATE OF STUDY: 08:00 07/27/2017
==============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   15.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  36.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *USER-DEFINED TABLED RAINFALL USED*
  NUMBER OF [TIME,INTENSITY] DATA PAIRS = 14
   1)    5.00;  4.440
   2)   10.00;  3.010
   3)   15.00;  2.390
   4)   20.00;  2.030
   5)   25.00;  1.790
   6)   30.00;  1.600
   7)   40.00;  1.370
   8)   50.00;  1.200
   9)   60.00;  1.060
  10)   90.00;  0.860
  11)  120.00;  0.730
  12)  180.00;  0.590
  13)  360.00;  0.410
  14) 1200.00;  0.170
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
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    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S31X50.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     2838.21   34.68  0.30( 0.24) 0.81    2526.0   13100.00
      2     2813.34   59.32  0.30( 0.24) 0.81    3777.1   13000.00
      3     2759.60   61.55  0.30( 0.24) 0.81    3796.8   13010.00
    TOTAL AREA(ACRES) =     3796.8

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S32X50.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     1293.92   32.86  0.30( 0.25) 0.83    1118.5   13210.00
      2     1295.17   33.26  0.30( 0.25) 0.83    1127.6   13200.00
    TOTAL AREA(ACRES) =     1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 14.0
------------------------------------------------------------------------------
  >>>>>MEMORY BANK #  2 COPIED ONTO MAIN-STREAM MEMORY<<<<<
==============================================================================

  MAIN-STREAM MEMORY DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     1293.92   32.86  0.30( 0.25) 0.83    1118.5   13210.00
      2     1295.17   33.26  0.30( 0.25) 0.83    1127.6   13200.00
    TOTAL AREA(ACRES) =      1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE =  11
------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1293.92   32.86    1.534  0.30( 0.25) 0.83    1118.5   13210.00
      2     1295.17   33.26    1.525  0.30( 0.25) 0.83    1127.6   13200.00
  LONGEST FLOWPATH FROM NODE  13200.00 TO NODE  13222.00 =   16821.05 FEET.
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```
 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1      2838.21   34.68     1.492  0.30( 0.24) 0.81     2526.0   13100.00
     2      2813.34   59.32     1.070  0.30( 0.24) 0.81     3777.1   13000.00
     3      2759.60   61.55     1.050  0.30( 0.24) 0.81     3796.8   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1      4073.15   32.86     1.534  0.30( 0.24) 0.82     3511.6   13210.00
     2      4088.12   33.26     1.525  0.30( 0.24) 0.82     3549.7   13200.00
     3      4100.11   34.68     1.492  0.30( 0.24) 0.82     3653.6   13100.00
     4      3646.44   59.32     1.070  0.30( 0.24) 0.81     4904.7   13000.00
     5      3572.56   61.55     1.050  0.30( 0.24) 0.81     4924.4   13010.00
    TOTAL AREA(ACRES) =      4924.4

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     4100.11  Tc(MIN.) =   34.683
 EFFECTIVE AREA(ACRES) =   3653.61  AREA-AVERAGED Fm(INCH/HR) =  0.24
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
 TOTAL AREA(ACRES) =     4924.4
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13222.00 TO NODE  13223.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    427.51  DOWNSTREAM(FEET) =    416.40
 CHANNEL LENGTH THRU SUBAREA(FEET) =   864.00   CHANNEL SLOPE =  0.0129
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   5.51
 CHANNEL FLOW THRU SUBAREA(CFS) =    4100.11
 FLOW VELOCITY(FEET/SEC.) =  11.18   FLOW DEPTH(FEET) =   5.51
 TRAVEL TIME(MIN.) =   1.29   Tc(MIN.) =   35.97
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610301X.DNA
 MEMORY BANK #  1 DEFINED AS FOLLOWS:
  STREAM        Q      Tc      Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)  (MIN.)   (INCH/HR)           (ACRES)     NODE
     1       63.63   12.39  0.30( 0.30) 1.00       29.3   30100.00
     2       55.78   15.02  0.30( 0.30) 1.00       29.7   30110.00
```



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    TOTAL AREA(ACRES) =       29.7

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1      4073.15   34.15     1.505  0.30( 0.24) 0.82     3511.6   13210.00
     2      4088.12   34.55     1.495  0.30( 0.24) 0.82     3549.7   13200.00
     3      4100.11   35.97     1.463  0.30( 0.24) 0.82     3653.6   13100.00
     4      3646.44   60.65     1.056  0.30( 0.24) 0.81     4904.7   13000.00
     5      3572.56   62.89     1.041  0.30( 0.24) 0.81     4924.4   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1       63.63   12.39     2.714  0.30( 0.30) 1.00       29.3   30100.00
     2       55.78   15.02     2.388  0.30( 0.30) 1.00       29.7   30110.00
 LONGEST FLOWPATH FROM NODE  30110.00 TO NODE  13223.00 =    2058.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM        Q      Tc    Intensity   Fp(Fm)      Ap      Ae      HEADWATER
  NUMBER      (CFS)   (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
     1     2959.62   12.39     2.714  0.30( 0.25) 0.82     1303.4   30100.00
     2     3104.48   15.02     2.388  0.30( 0.25) 0.82     1574.5   30110.00
     3     4105.33   34.15     1.505  0.30( 0.25) 0.82     3541.3   13210.00
     4     4120.05   34.55     1.495  0.30( 0.25) 0.82     3579.4   13200.00
     5     4131.16   35.97     1.463  0.30( 0.24) 0.82     3683.3   13100.00
     6     3666.63   60.65     1.056  0.30( 0.24) 0.81     4934.4   13000.00
     7     3592.35   62.89     1.041  0.30( 0.24) 0.81     4954.1   13010.00
    TOTAL AREA(ACRES) =      4954.1

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     4131.16  Tc(MIN.) =   35.972
 EFFECTIVE AREA(ACRES) =   3683.29  AREA-AVERAGED Fm(INCH/HR) =  0.24
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
 TOTAL AREA(ACRES) =     4954.1
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13223.00 TO NODE  13224.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    416.40  DOWNSTREAM(FEET) =    410.60
 CHANNEL LENGTH THRU SUBAREA(FEET) =   408.51   CHANNEL SLOPE =  0.0142
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   5.38
 CHANNEL FLOW THRU SUBAREA(CFS) =    4131.16
 FLOW VELOCITY(FEET/SEC.) =  11.60   FLOW DEPTH(FEET) =   5.38
 TRAVEL TIME(MIN.) =   0.59   Tc(MIN.) =   36.56
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  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610302X.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       28.42   10.46  0.30( 0.30) 1.00      11.9   30210.00
      2       28.25   10.81  0.30( 0.30) 1.00      12.0   30200.00
    TOTAL AREA(ACRES) =       12.0

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2959.62   13.04    2.633  0.30( 0.25) 0.82    1303.4   30100.00
      2     3104.48   15.66    2.342  0.30( 0.25) 0.82    1574.5   30110.00
      3     4105.33   34.74    1.491  0.30( 0.25) 0.82    3541.3   13210.00
      4     4120.05   35.13    1.482  0.30( 0.25) 0.82    3579.4   13200.00
      5     4131.16   36.56    1.449  0.30( 0.24) 0.82    3683.3   13100.00
      6     3666.63   61.26    1.052  0.30( 0.24) 0.81    4934.4   13000.00
      7     3592.35   63.50    1.037  0.30( 0.24) 0.81    4954.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       28.42   10.46    2.953  0.30( 0.30) 1.00      11.9   30210.00
      2       28.25   10.81    2.909  0.30( 0.30) 1.00      12.0   30200.00
  LONGEST FLOWPATH FROM NODE  30200.00 TO NODE  13224.00 =    1209.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2720.25   10.46    2.953  0.30( 0.25) 0.82    1057.1   30210.00
      2     2766.20   10.81    2.909  0.30( 0.25) 0.82    1092.7   30200.00
      3     2984.87   13.04    2.633  0.30( 0.25) 0.82    1315.4   30100.00
      4     3126.59   15.66    2.342  0.30( 0.25) 0.82    1586.5   30110.00
      5     4118.22   34.74    1.491  0.30( 0.25) 0.82    3553.3   13210.00
      6     4132.85   35.13    1.482  0.30( 0.25) 0.82    3591.4   13200.00
      7     4143.60   36.56    1.449  0.30( 0.25) 0.82    3695.3   13100.00
      8     3674.76   61.26    1.052  0.30( 0.24) 0.81    4946.4   13000.00
      9     3600.32   63.50    1.037  0.30( 0.24) 0.81    4966.1   13010.00
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    TOTAL AREA(ACRES) =      4966.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4143.60  Tc(MIN.) =   36.559
  EFFECTIVE AREA(ACRES) =   3695.32  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
  TOTAL AREA(ACRES) =     4966.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13301.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    410.60  DOWNSTREAM(FEET) =    382.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1260.70   CHANNEL SLOPE =  0.0227
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.76
  *  15 YEAR RAINFALL INTENSITY(INCH/HR) =  1.414
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED                -       61.66      0.30      0.998     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    4174.52
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  13.66
  AVERAGE FLOW DEPTH(FEET) =   4.76   TRAVEL TIME(MIN.) =   1.54
  Tc(MIN.) =   38.10
  SUBAREA AREA(ACRES) =    61.66       SUBAREA RUNOFF(CFS) =   61.84
  EFFECTIVE AREA(ACRES) =   3756.98     AREA-AVERAGED Fm(INCH/HR) =   0.25
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.82
  TOTAL AREA(ACRES) =     5027.8         PEAK FLOW RATE(CFS) =    4143.60
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   4.73

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  4.73   FLOW VELOCITY(FEET/SEC.) =  13.63
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610303X.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      253.95   20.68  0.30( 0.30) 1.00     166.2   30300.00
    TOTAL AREA(ACRES) =      166.2

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE =  11
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------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
==============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2720.25   12.21    2.736  0.30( 0.25) 0.83    1118.7   30210.00
      2     2766.20   12.55    2.693  0.30( 0.25) 0.83    1154.4   30200.00
      3     2984.87   14.74    2.422  0.30( 0.25) 0.83    1377.1   30100.00
      4     3126.59   17.34    2.221  0.30( 0.25) 0.83    1648.2   30110.00
      5     4118.22   36.28    1.456  0.30( 0.25) 0.82    3615.0   13210.00
      6     4132.85   36.67    1.447  0.30( 0.25) 0.82    3653.1   13200.00
      7     4143.60   38.10    1.414  0.30( 0.25) 0.82    3757.0   13100.00
      8     3674.76   62.86    1.041  0.30( 0.24) 0.82    5008.1   13000.00
      9     3600.32   65.11    1.026  0.30( 0.24) 0.82    5027.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      253.95   20.68    1.998  0.30( 0.30) 1.00     166.2   30300.00
  LONGEST FLOWPATH FROM NODE  30300.00 TO NODE  13301.00 =    6391.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM        Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2935.45   12.21    2.736  0.30( 0.25) 0.85    1216.9   30210.00
      2     2983.59   12.55    2.693  0.30( 0.25) 0.84    1255.3   30200.00
      3     3211.21   14.74    2.422  0.30( 0.25) 0.84    1495.6   30100.00
      4     3367.67   17.34    2.221  0.30( 0.25) 0.84    1787.6   30110.00
      5     3555.16   20.68    1.998  0.30( 0.25) 0.84    2160.7   30300.00
      6     4291.10   36.28    1.456  0.30( 0.25) 0.83    3781.2   13210.00
      7     4304.37   36.67    1.447  0.30( 0.25) 0.83    3819.3   13200.00
      8     4310.23   38.10    1.414  0.30( 0.25) 0.83    3923.2   13100.00
      9     3785.61   62.86    1.041  0.30( 0.25) 0.82    5174.3   13000.00
     10     3708.92   65.11    1.026  0.30( 0.25) 0.82    5194.0   13010.00
    TOTAL AREA(ACRES) =      5194.0

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4310.23  Tc(MIN.) =   38.097
  EFFECTIVE AREA(ACRES) =   3923.19  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.83
  TOTAL AREA(ACRES) =     5194.0
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    382.00  DOWNSTREAM(FEET) =    375.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1141.09   CHANNEL SLOPE =  0.0061
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.95
  *  15 YEAR RAINFALL INTENSITY(INCH/HR) =  1.366
```



```
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap      SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -        9.42      0.30      1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    4314.74
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.78
  AVERAGE FLOW DEPTH(FEET) =   6.94   TRAVEL TIME(MIN.) =   2.17
  Tc(MIN.) =   40.26
  SUBAREA AREA(ACRES) =     9.42       SUBAREA RUNOFF(CFS) =    9.03
  EFFECTIVE AREA(ACRES) =   3932.61     AREA-AVERAGED Fm(INCH/HR) =   0.25
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.83
  TOTAL AREA(ACRES) =     5203.4         PEAK FLOW RATE(CFS) =    4310.23
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.94

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  6.94   FLOW VELOCITY(FEET/SEC.) =   8.77
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610214X.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM        Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      313.64   24.16  0.30( 0.30) 1.00     227.7   21400.00
    TOTAL AREA(ACRES) =      227.7

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     2935.45   14.64    2.434  0.30( 0.25) 0.85    1226.3   30210.00
      2     2983.59   14.98    2.393  0.30( 0.25) 0.85    1264.7   30200.00
      3     3211.21   17.11    2.238  0.30( 0.25) 0.84    1505.0   30100.00
      4     3367.67   19.67    2.053  0.30( 0.25) 0.84    1797.0   30110.00
      5     3555.16   22.97    1.887  0.30( 0.25) 0.84    2170.1   30300.00
      6     4291.10   38.45    1.406  0.30( 0.25) 0.83    3790.6   13210.00
      7     4304.37   38.84    1.397  0.30( 0.25) 0.83    3828.7   13200.00
      8     4310.23   40.26    1.366  0.30( 0.25) 0.83    3932.6   13100.00
```

```
     9     3785.61   65.11    1.026  0.30( 0.25) 0.82    5183.7   13000.00
    10     3708.92   67.38    1.011  0.30( 0.25) 0.82    5203.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1      313.64   24.16    1.830  0.30( 0.30) 1.00     227.7   21400.00
  LONGEST FLOWPATH FROM NODE  21400.00 TO NODE  13302.00 =    6708.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1     3200.56   14.64    2.434  0.30( 0.26) 0.86    1364.3   30210.00
      2     3249.48   14.98    2.393  0.30( 0.26) 0.86    1405.8   30200.00
      3     3492.53   17.11    2.238  0.30( 0.26) 0.86    1666.3   30100.00
      4     3660.32   19.67    2.053  0.30( 0.26) 0.86    1982.4   30110.00
      5     3864.50   22.97    1.887  0.30( 0.26) 0.85    2386.6   30300.00
      6     3925.10   24.16    1.830  0.30( 0.26) 0.85    2521.8   21400.00
      7     4517.70   38.45    1.406  0.30( 0.25) 0.84    4018.3   13210.00
      8     4529.12   38.84    1.397  0.30( 0.25) 0.84    4056.4   13200.00
      9     4528.60   40.26    1.366  0.30( 0.25) 0.84    4160.3   13100.00
     10     3934.40   65.11    1.026  0.30( 0.25) 0.83    5411.3   13000.00
     11     3854.61   67.38    1.011  0.30( 0.25) 0.83    5431.1   13010.00
    TOTAL AREA(ACRES) =      5431.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4529.12  Tc(MIN.) =   38.841
  EFFECTIVE AREA(ACRES) =   4056.38  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.84
  TOTAL AREA(ACRES) =     5431.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13303.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    375.00  DOWNSTREAM(FEET) =    355.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2193.96   CHANNEL SLOPE =  0.0091
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.40
  CHANNEL FLOW THRU SUBAREA(CFS) =    4529.12
  FLOW VELOCITY(FEET/SEC.) =  10.23   FLOW DEPTH(FEET) =   6.40
  TRAVEL TIME(MIN.) =   3.57   Tc(MIN.) =   42.42
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE = 15.1
----------------------------------------------------------------------------
```



```
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610213X.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)         (ACRES)    NODE
      1      180.87   15.61  0.30( 0.30) 1.00      98.2   21300.00
    TOTAL AREA(ACRES) =       98.2

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1     3200.56   18.62    2.129  0.30( 0.26) 0.86    1364.3   30210.00
      2     3249.48   18.93    2.107  0.30( 0.26) 0.86    1405.8   30200.00
      3     3492.53   20.98    1.983  0.30( 0.26) 0.86    1666.3   30100.00
      4     3660.32   23.49    1.862  0.30( 0.26) 0.86    1982.4   30110.00
      5     3864.50   26.72    1.725  0.30( 0.26) 0.85    2386.6   30300.00
      6     3925.10   27.89    1.680  0.30( 0.26) 0.85    2521.8   21400.00
      7     4517.70   42.03    1.336  0.30( 0.25) 0.84    4018.3   13210.00
      8     4529.12   42.42    1.329  0.30( 0.25) 0.84    4056.4   13200.00
      9     4528.60   43.84    1.305  0.30( 0.25) 0.84    4160.3   13100.00
     10     3934.40   68.85    1.001  0.30( 0.25) 0.83    5411.3   13000.00
     11     3854.61   71.14    0.986  0.30( 0.25) 0.83    5431.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1      180.87   15.61    2.346  0.30( 0.30) 1.00      98.2   21300.00
  LONGEST FLOWPATH FROM NODE  21300.00 TO NODE  13303.00 =    2988.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)         (ACRES)    NODE
      1     3175.02   15.61    2.346  0.30( 0.26) 0.87    1242.2   21300.00
      2     3362.28   18.62    2.129  0.30( 0.26) 0.87    1462.5   30210.00
      3     3409.21   18.93    2.107  0.30( 0.26) 0.87    1504.0   30200.00
      4     3641.29   20.98    1.983  0.30( 0.26) 0.87    1764.5   30100.00
      5     3798.45   23.49    1.862  0.30( 0.26) 0.86    2080.6   30110.00
      6     3990.44   26.72    1.725  0.30( 0.26) 0.86    2484.9   30300.00
      7     4047.11   27.89    1.680  0.30( 0.26) 0.86    2620.0   21400.00
      8     4609.25   42.03    1.336  0.30( 0.25) 0.84    4116.5   13210.00
      9     4620.08   42.42    1.329  0.30( 0.25) 0.84    4154.6   13200.00
     10     4617.42   43.84    1.305  0.30( 0.25) 0.84    4258.5   13100.00
     11     3996.37   68.85    1.001  0.30( 0.25) 0.83    5509.6   13000.00
     12     3915.24   71.14    0.986  0.30( 0.25) 0.83    5529.3   13010.00
    TOTAL AREA(ACRES) =      5529.3

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4620.08  Tc(MIN.) =   42.416
  EFFECTIVE AREA(ACRES) =   4154.60  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.84
```

```
  TOTAL AREA(ACRES) =     5529.3
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13304.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    355.00  DOWNSTREAM(FEET) =    350.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.40   CHANNEL SLOPE =  0.0054
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   7.46
  *  15 YEAR RAINFALL INTENSITY(INCH/HR) =  1.298
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       13.84      0.30     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    4626.30
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.57
  AVERAGE FLOW DEPTH(FEET) =   7.46   TRAVEL TIME(MIN.) =   1.80
  Tc(MIN.) =   44.22
  SUBAREA AREA(ACRES) =    13.84       SUBAREA RUNOFF(CFS) =   12.44
  EFFECTIVE AREA(ACRES) =   4168.44     AREA-AVERAGED Fm(INCH/HR) =   0.25
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.84
  TOTAL AREA(ACRES) =     5543.1         PEAK FLOW RATE(CFS) =    4620.08
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   7.46

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  7.46   FLOW VELOCITY(FEET/SEC.) =   8.56
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 3 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610304X.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)      Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      270.30   18.70  0.30( 0.30) 1.00     164.7   30410.00
      2      256.64   23.53  0.30( 0.30) 1.00     182.7   30400.00
    TOTAL AREA(ACRES) =      182.7

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



```
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3175.02   17.63    2.201  0.30( 0.26) 0.87    1256.0   21300.00
      2     3362.28   20.60    2.001  0.30( 0.26) 0.87    1476.4   30210.00
      3     3409.21   20.90    1.987  0.30( 0.26) 0.87    1517.9   30200.00
      4     3641.29   22.92    1.890  0.30( 0.26) 0.87    1778.4   30100.00
      5     3798.45   25.40    1.775  0.30( 0.26) 0.86    2094.5   30110.00
      6     3990.44   28.60    1.653  0.30( 0.26) 0.86    2498.7   30300.00
      7     4047.11   29.76    1.609  0.30( 0.26) 0.86    2633.8   21400.00
      8     4609.25   43.83    1.305  0.30( 0.25) 0.84    4130.3   13210.00
      9     4620.08   44.22    1.298  0.30( 0.25) 0.84    4168.4   13200.00
     10     4617.42   45.64    1.274  0.30( 0.25) 0.84    4272.3   13100.00
     11     3996.37   70.73    0.988  0.30( 0.25) 0.83    5523.4   13000.00
     12     3915.24   73.03    0.973  0.30( 0.25) 0.83    5543.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      270.30   18.70    2.124  0.30( 0.30) 1.00     164.7   30410.00
      2      256.64   23.53    1.861  0.30( 0.30) 1.00     182.7   30400.00
  LONGEST FLOWPATH FROM NODE  30400.00 TO NODE  13304.00 =    5899.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)      Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3440.61   17.63    2.201  0.30( 0.27) 0.89    1411.2   21300.00
      2     3512.85   18.70    2.124  0.30( 0.27) 0.89    1500.1   30410.00
      3     3627.21   20.60    2.001  0.30( 0.27) 0.89    1648.2   30210.00
      4     3673.27   20.90    1.987  0.30( 0.27) 0.88    1690.8   30200.00
      5     3899.66   22.92    1.890  0.30( 0.26) 0.88    1958.8   30100.00
      6     3936.58   23.53    1.861  0.30( 0.26) 0.88    2038.8   30400.00
      7     4040.97   25.40    1.775  0.30( 0.26) 0.87    2277.2   30110.00
      8     4212.95   28.60    1.653  0.30( 0.26) 0.87    2681.4   30300.00
      9     4262.37   29.76    1.609  0.30( 0.26) 0.87    2816.5   21400.00
     10     4774.50   43.83    1.305  0.30( 0.25) 0.85    4313.0   13210.00
     11     4784.26   44.22    1.298  0.30( 0.25) 0.85    4351.2   13200.00
     12     4777.62   45.64    1.274  0.30( 0.25) 0.85    4455.0   13100.00
     13     4109.60   70.73    0.988  0.30( 0.25) 0.84    5706.1   13000.00
     14     4025.94   73.03    0.973  0.30( 0.25) 0.84    5725.8   13010.00
    TOTAL AREA(ACRES) =      5725.8

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4784.26  Tc(MIN.) =   44.215
  EFFECTIVE AREA(ACRES) =   4351.15  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
  TOTAL AREA(ACRES) =     5725.8
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13304.00 TO NODE  13305.00 IS CODE =  56
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    350.00  DOWNSTREAM(FEET) =    315.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2966.27   CHANNEL SLOPE =  0.0118
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.15
  *  15 YEAR RAINFALL INTENSITY(INCH/HR) =  1.225
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -       27.39      0.30     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    4795.65
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  11.38
  AVERAGE FLOW DEPTH(FEET) =   6.15   TRAVEL TIME(MIN.) =   4.34
  Tc(MIN.) =   48.56
  SUBAREA AREA(ACRES) =    27.39       SUBAREA RUNOFF(CFS) =   22.79
  EFFECTIVE AREA(ACRES) =   4378.54     AREA-AVERAGED Fm(INCH/HR) =   0.26
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.85
  TOTAL AREA(ACRES) =     5753.2         PEAK FLOW RATE(CFS) =    4784.26
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.14

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  6.14   FLOW VELOCITY(FEET/SEC.) =  11.38
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610305X.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)   (INCH/HR)          (ACRES)    NODE
      1      783.83   22.54  0.30( 0.30) 1.00     541.5   30520.00
      2      783.70   23.94  0.30( 0.30) 1.00     565.1   30540.00
      3      766.51   25.30  0.30( 0.30) 1.00     576.0   30510.00
      4      746.32   26.77  0.30( 0.30) 1.00     582.8   30500.00
    TOTAL AREA(ACRES) =      582.8

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================
```



```
** MAIN STREAM CONFLUENCE DATA **
 STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
 NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
    1     3440.61   22.43    1.913  0.30( 0.27) 0.89    1438.6   21300.00
    2     3512.85   23.47    1.863  0.30( 0.27) 0.89    1527.5   30410.00
    3     3627.21   25.32    1.778  0.30( 0.27) 0.89    1675.5   30210.00
    4     3673.27   25.61    1.767  0.30( 0.27) 0.89    1718.2   30200.00
    5     3899.66   27.54    1.694  0.30( 0.26) 0.88    1986.2   30100.00
    6     3936.58   28.14    1.671  0.30( 0.26) 0.88    2066.2   30400.00
    7     4040.97   29.97    1.601  0.30( 0.26) 0.88    2304.6   30110.00
    8     4212.95   33.12    1.528  0.30( 0.26) 0.87    2708.8   30300.00
    9     4262.37   34.26    1.502  0.30( 0.26) 0.87    2843.9   21400.00
   10     4774.50   48.17    1.231  0.30( 0.26) 0.85    4340.4   13210.00
   11     4784.26   48.56    1.225  0.30( 0.26) 0.85    4378.5   13200.00
   12     4777.62   49.98    1.200  0.30( 0.25) 0.85    4482.4   13100.00
   13     4109.60   75.28    0.958  0.30( 0.25) 0.84    5733.5   13000.00
   14     4025.94   77.61    0.943  0.30( 0.25) 0.84    5753.2   13010.00
LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
 NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
    1      783.83   22.54    1.908  0.30( 0.30) 1.00     541.5   30520.00
    2      783.70   23.94    1.841  0.30( 0.30) 1.00     565.1   30540.00
    3      766.51   25.30    1.778  0.30( 0.30) 1.00     576.0   30510.00
    4      746.32   26.77    1.723  0.30( 0.30) 1.00     582.8   30500.00
LONGEST FLOWPATH FROM NODE  30500.00 TO NODE  13305.00 =    9458.00 FEET.

** PEAK FLOW RATE TABLE **
 STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
 NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
    1     4223.21   22.43    1.913  0.30( 0.28) 0.92    1977.5   21300.00
    2     4231.89   22.54    1.908  0.30( 0.28) 0.92    1989.3   30520.00
    3     4296.59   23.47    1.863  0.30( 0.28) 0.92    2084.7   30410.00
    4     4325.59   23.94    1.841  0.30( 0.28) 0.92    2130.2   30540.00
    5     4392.57   25.30    1.778  0.30( 0.27) 0.92    2250.1   30510.00
    6     4393.46   25.32    1.778  0.30( 0.27) 0.92    2251.7   30210.00
    7     4435.53   25.61    1.767  0.30( 0.27) 0.92    2295.7   30200.00
    8     4555.84   26.77    1.723  0.30( 0.27) 0.91    2462.3   30500.00
    9     4630.71   27.54    1.694  0.30( 0.27) 0.91    2569.0   30100.00
   10     4655.68   28.14    1.671  0.30( 0.27) 0.91    2649.0   30400.00
   11     4723.52   29.97    1.601  0.30( 0.27) 0.90    2887.4   30110.00
   12     4857.32   33.12    1.528  0.30( 0.27) 0.89    3291.6   30300.00
   13     4892.93   34.26    1.502  0.30( 0.27) 0.89    3426.8   21400.00
   14     5262.93   48.17    1.231  0.30( 0.26) 0.87    4923.3   13210.00
   15     5269.25   48.56    1.225  0.30( 0.26) 0.87    4961.4   13200.00
   16     5249.92   49.98    1.200  0.30( 0.26) 0.87    5065.3   13100.00
   17     4454.87   75.28    0.958  0.30( 0.26) 0.85    6316.3   13000.00
   18     4363.07   77.61    0.943  0.30( 0.26) 0.85    6336.1   13010.00
  TOTAL AREA(ACRES) =      6336.1

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) =     5269.25  Tc(MIN.) =   48.559
EFFECTIVE AREA(ACRES) =   4961.38  AREA-AVERAGED Fm(INCH/HR) =  0.26
AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.90
TOTAL AREA(ACRES) =     6336.1
LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.20 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    315.00  DOWNSTREAM(FEET) =    284.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1317.91   CHANNEL SLOPE =  0.0235
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.36
  CHANNEL FLOW THRU SUBAREA(CFS) =    5269.25
  FLOW VELOCITY(FEET/SEC.) =  14.88   FLOW DEPTH(FEET) =   5.36
  TRAVEL TIME(MIN.) =   1.48   Tc(MIN.) =   50.03
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610306X.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       66.67   18.53  0.30( 0.30) 1.00      40.4   30600.00
    TOTAL AREA(ACRES) =       40.4

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4223.21   24.01    1.838  0.30( 0.28) 0.92    1977.5   21300.00
      2     4231.89   24.12    1.832  0.30( 0.28) 0.92    1989.3   30520.00
      3     4296.59   25.04    1.788  0.30( 0.28) 0.92    2084.7   30410.00
      4     4325.59   25.51    1.771  0.30( 0.28) 0.92    2130.2   30540.00
      5     4392.57   26.87    1.719  0.30( 0.27) 0.92    2250.1   30510.00
      6     4393.46   26.89    1.718  0.30( 0.27) 0.92    2251.7   30210.00
      7     4435.53   27.17    1.707  0.30( 0.27) 0.92    2295.7   30200.00
      8     4555.84   28.32    1.664  0.30( 0.27) 0.91    2462.3   30500.00
      9     4630.71   29.07    1.635  0.30( 0.27) 0.91    2569.0   30100.00
     10     4655.68   29.67    1.613  0.30( 0.27) 0.91    2649.0   30400.00
     11     4723.52   31.50    1.566  0.30( 0.27) 0.90    2887.4   30110.00
     12     4857.32   34.63    1.494  0.30( 0.27) 0.89    3291.6   30300.00
     13     4892.93   35.77    1.467  0.30( 0.27) 0.89    3426.8   21400.00
     14     5262.93   49.65    1.206  0.30( 0.26) 0.87    4923.3   13210.00
```



```
     15     5269.25   50.03    1.200  0.30( 0.26) 0.87    4961.4   13200.00
     16     5249.92   51.46    1.180  0.30( 0.26) 0.87    5065.3   13100.00
     17     4454.87   76.83    0.948  0.30( 0.26) 0.85    6316.3   13000.00
     18     4363.07   79.17    0.932  0.30( 0.26) 0.85    6336.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       66.67   18.53    2.136  0.30( 0.30) 1.00      40.4   30600.00
  LONGEST FLOWPATH FROM NODE  30600.00 TO NODE  13305.20 =    2948.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3948.76   18.53    2.136  0.30( 0.28) 0.92    1566.7   30600.00
      2     4279.05   24.01    1.838  0.30( 0.28) 0.92    2017.9   21300.00
      3     4287.55   24.12    1.832  0.30( 0.28) 0.92    2029.6   30520.00
      4     4350.65   25.04    1.788  0.30( 0.28) 0.92    2125.1   30410.00
      5     4379.00   25.51    1.771  0.30( 0.28) 0.92    2170.6   30540.00
      6     4444.10   26.87    1.719  0.30( 0.28) 0.92    2290.4   30510.00
      7     4444.97   26.89    1.718  0.30( 0.28) 0.92    2292.0   30210.00
      8     4486.65   27.17    1.707  0.30( 0.27) 0.92    2336.0   30200.00
      9     4605.38   28.32    1.664  0.30( 0.27) 0.91    2502.7   30500.00
     10     4679.20   29.07    1.635  0.30( 0.27) 0.91    2609.4   30100.00
     11     4703.35   29.67    1.613  0.30( 0.27) 0.91    2689.4   30400.00
     12     4769.48   31.50    1.566  0.30( 0.27) 0.90    2927.8   30110.00
     13     4900.66   34.63    1.494  0.30( 0.27) 0.90    3332.0   30300.00
     14     4935.32   35.77    1.467  0.30( 0.27) 0.89    3467.1   21400.00
     15     5295.84   49.65    1.206  0.30( 0.26) 0.87    4963.6   13210.00
     16     5301.92   50.03    1.200  0.30( 0.26) 0.87    5001.7   13200.00
     17     5281.86   51.46    1.180  0.30( 0.26) 0.87    5105.6   13100.00
     18     4478.40   76.83    0.948  0.30( 0.26) 0.86    6356.7   13000.00
     19     4386.03   79.17    0.932  0.30( 0.26) 0.85    6376.4   13010.00
    TOTAL AREA(ACRES) =      6376.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     5301.92  Tc(MIN.) =   50.035
  EFFECTIVE AREA(ACRES) =   5001.74  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
  TOTAL AREA(ACRES) =     6376.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.40 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    284.00  DOWNSTREAM(FEET) =    274.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   826.37   CHANNEL SLOPE =  0.0121
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.46
  CHANNEL FLOW THRU SUBAREA(CFS) =    5301.92
  FLOW VELOCITY(FEET/SEC.) =  11.84   FLOW DEPTH(FEET) =   6.46
  TRAVEL TIME(MIN.) =   1.16   Tc(MIN.) =   51.20
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.
```

```
****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610307X.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      165.18   18.02  0.30( 0.30) 1.00      98.0   30700.00
    TOTAL AREA(ACRES) =       98.0

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3948.76   19.80    2.044  0.30( 0.28) 0.92    1566.7   30600.00
      2     4279.05   25.25    1.780  0.30( 0.28) 0.92    2017.9   21300.00
      3     4287.55   25.36    1.776  0.30( 0.28) 0.92    2029.6   30520.00
      4     4350.65   26.28    1.741  0.30( 0.28) 0.92    2125.1   30410.00
      5     4379.00   26.74    1.724  0.30( 0.28) 0.92    2170.6   30540.00
      6     4444.10   28.09    1.672  0.30( 0.28) 0.92    2290.4   30510.00
      7     4444.97   28.11    1.672  0.30( 0.28) 0.92    2292.0   30210.00
      8     4486.65   28.40    1.661  0.30( 0.27) 0.92    2336.0   30200.00
      9     4605.38   29.53    1.618  0.30( 0.27) 0.91    2502.7   30500.00
     10     4679.20   30.28    1.594  0.30( 0.27) 0.91    2609.4   30100.00
     11     4703.35   30.88    1.580  0.30( 0.27) 0.91    2689.4   30400.00
     12     4769.48   32.70    1.538  0.30( 0.27) 0.90    2927.8   30110.00
     13     4900.66   35.82    1.466  0.30( 0.27) 0.90    3332.0   30300.00
     14     4935.32   36.96    1.440  0.30( 0.27) 0.89    3467.1   21400.00
     15     5295.84   50.81    1.189  0.30( 0.26) 0.87    4963.6   13210.00
     16     5301.92   51.20    1.183  0.30( 0.26) 0.87    5001.7   13200.00
     17     5281.86   52.62    1.163  0.30( 0.26) 0.87    5105.6   13100.00
     18     4478.40   78.06    0.940  0.30( 0.26) 0.86    6356.7   13000.00
     19     4386.03   80.41    0.924  0.30( 0.26) 0.85    6376.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      165.18   18.02    2.173  0.30( 0.30) 1.00      98.0   30700.00
  LONGEST FLOWPATH FROM NODE  30700.00 TO NODE  13305.40 =    5192.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
```



```
      1     4019.20   18.02    2.173  0.30( 0.28) 0.93    1523.4   30700.00
      2     4102.60   19.80    2.044  0.30( 0.28) 0.93    1664.7   30600.00
      3     4409.63   25.25    1.780  0.30( 0.28) 0.93    2115.9   21300.00
      4     4417.77   25.36    1.776  0.30( 0.28) 0.93    2127.6   30520.00
      5     4477.79   26.28    1.741  0.30( 0.28) 0.92    2223.1   30410.00
      6     4504.58   26.74    1.724  0.30( 0.28) 0.92    2268.6   30540.00
      7     4565.16   28.09    1.672  0.30( 0.28) 0.92    2388.5   30510.00
      8     4565.97   28.11    1.672  0.30( 0.28) 0.92    2390.0   30210.00
      9     4606.70   28.40    1.661  0.30( 0.28) 0.92    2434.0   30200.00
     10     4721.62   29.53    1.618  0.30( 0.27) 0.92    2600.7   30500.00
     11     4793.30   30.28    1.594  0.30( 0.27) 0.91    2707.4   30100.00
     12     4816.24   30.88    1.580  0.30( 0.27) 0.91    2787.4   30400.00
     13     4878.68   32.70    1.538  0.30( 0.27) 0.91    3025.8   30110.00
     14     5003.52   35.82    1.466  0.30( 0.27) 0.90    3430.0   30300.00
     15     5035.87   36.96    1.440  0.30( 0.27) 0.90    3565.1   21400.00
     16     5374.22   50.81    1.189  0.30( 0.26) 0.87    5061.6   13210.00
     17     5379.83   51.20    1.183  0.30( 0.26) 0.87    5099.7   13200.00
     18     5358.01   52.62    1.163  0.30( 0.26) 0.87    5203.6   13100.00
     19     4534.82   78.06    0.940  0.30( 0.26) 0.86    6454.7   13000.00
     20     4441.07   80.41    0.924  0.30( 0.26) 0.86    6474.4   13010.00
   TOTAL AREA(ACRES) =      6474.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     5379.83  Tc(MIN.) =   51.198
  EFFECTIVE AREA(ACRES) =   5099.74  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
  TOTAL AREA(ACRES) =     6474.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.60 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    274.00  DOWNSTREAM(FEET) =    258.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   733.85   CHANNEL SLOPE =  0.0218
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.54
  CHANNEL FLOW THRU SUBAREA(CFS) =    5379.83
  FLOW VELOCITY(FEET/SEC.) =  14.59   FLOW DEPTH(FEET) =   5.54
  TRAVEL TIME(MIN.) =   0.84   Tc(MIN.) =   52.04
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.60 =   44764.55 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610308X.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
```

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	111.54	17.47	0.30(0.30)	1.00	64.8	30800.00

TOTAL AREA(ACRES) = 64.8

****

FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.60 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	4019.20	18.94	2.107	0.30(0.28)	0.93	1523.4	30700.00
2	4102.60	20.72	1.996	0.30(0.28)	0.93	1664.7	30600.00
3	4409.63	26.14	1.747	0.30(0.28)	0.93	2115.9	21300.00
4	4417.77	26.25	1.743	0.30(0.28)	0.93	2127.6	30520.00
5	4477.79	27.17	1.708	0.30(0.28)	0.92	2223.1	30410.00
6	4504.58	27.63	1.690	0.30(0.28)	0.92	2268.6	30540.00
7	4565.16	28.98	1.639	0.30(0.28)	0.92	2388.5	30510.00
8	4565.97	29.00	1.638	0.30(0.28)	0.92	2390.0	30210.00
9	4606.70	29.28	1.628	0.30(0.28)	0.92	2434.0	30200.00
10	4721.62	30.40	1.591	0.30(0.27)	0.92	2600.7	30500.00
11	4793.30	31.15	1.574	0.30(0.27)	0.91	2707.4	30100.00
12	4816.24	31.74	1.560	0.30(0.27)	0.91	2787.4	30400.00
13	4878.68	33.56	1.518	0.30(0.27)	0.91	3025.8	30110.00
14	5003.52	36.68	1.446	0.30(0.27)	0.90	3430.0	30300.00
15	5035.87	37.82	1.420	0.30(0.27)	0.90	3565.1	21400.00
16	5374.22	51.65	1.177	0.30(0.26)	0.87	5061.6	13210.00
17	5379.83	52.04	1.171	0.30(0.26)	0.87	5099.7	13200.00
18	5358.01	53.46	1.152	0.30(0.26)	0.87	5203.6	13100.00
19	4534.82	78.94	0.934	0.30(0.26)	0.86	6454.7	13000.00
20	4441.07	81.30	0.918	0.30(0.26)	0.86	6474.4	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	111.54	17.47	2.212	0.30(0.30)	1.00	64.8	30800.00

LONGEST FLOWPATH FROM NODE 30800.00 TO NODE 13305.60 = 4165.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	4033.98	17.47	2.212	0.30(0.28)	0.93	1470.7	30800.00
2	4124.60	18.94	2.107	0.30(0.28)	0.93	1588.2	30700.00
3	4201.52	20.72	1.996	0.30(0.28)	0.93	1729.5	30600.00
4	4494.03	26.14	1.747	0.30(0.28)	0.93	2180.7	21300.00
5	4501.94	26.25	1.743	0.30(0.28)	0.93	2192.5	30520.00
6	4559.92	27.17	1.708	0.30(0.28)	0.93	2287.9	30410.00
7	4585.69	27.63	1.690	0.30(0.28)	0.93	2333.4	30540.00
8	4643.27	28.98	1.639	0.30(0.28)	0.92	2453.3	30510.00
9	4644.05	29.00	1.638	0.30(0.28)	0.92	2454.9	30210.00
10	4684.15	29.28	1.628	0.30(0.28)	0.92	2498.9	30200.00
11	4796.93	30.40	1.591	0.30(0.28)	0.92	2665.5	30500.00
12	4867.60	31.15	1.574	0.30(0.27)	0.92	2772.2	30100.00
13	4889.75	31.74	1.560	0.30(0.27)	0.91	2852.2	30400.00

14	4949.75	33.56	1.518	0.30(0.27)	0.91	3090.6	30110.00
15	5070.41	36.68	1.446	0.30(0.27)	0.90	3494.8	30300.00
16	5101.23	37.82	1.420	0.30(0.27)	0.90	3629.9	21400.00
17	5425.38	51.65	1.177	0.30(0.26)	0.87	5126.4	13210.00
18	5430.67	52.04	1.171	0.30(0.26)	0.87	5164.6	13200.00
19	5407.69	53.46	1.152	0.30(0.26)	0.87	5268.4	13100.00
20	4571.80	78.94	0.934	0.30(0.26)	0.86	6519.5	13000.00
21	4477.13	81.30	0.918	0.30(0.26)	0.86	6539.3	13010.00

TOTAL AREA(ACRES) = 6539.3

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 5430.67 Tc(MIN.) = 52.037
EFFECTIVE AREA(ACRES) = 5164.56 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.87
TOTAL AREA(ACRES) = 6539.3
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

****

FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.80 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

==========

ELEVATION DATA: UPSTREAM(FEET) = 258.00 DOWNSTREAM(FEET) = 254.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 947.16 CHANNEL SLOPE = 0.0042
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 8.68
CHANNEL FLOW THRU SUBAREA(CFS) = 5430.67
FLOW VELOCITY(FEET/SEC.) = 8.23 FLOW DEPTH(FEET) = 8.68
TRAVEL TIME(MIN.) = 1.92 Tc(MIN.) = 53.96
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

****

FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

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****

FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<

==========

PEAK FLOWRATE TABLE FILE NAME: 0610309X.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	114.93	17.10	0.30(0.30)	1.00	65.9	30900.00
2	114.82	17.15	0.30(0.30)	1.00	65.9	30910.00

TOTAL AREA(ACRES) = 65.9

****

FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	4033.98	19.57	2.061	0.30(0.28)	0.93	1470.7	30800.00
2	4124.60	21.02	1.981	0.30(0.28)	0.93	1588.2	30700.00
3	4201.52	22.79	1.896	0.30(0.28)	0.93	1729.5	30600.00
4	4494.03	28.17	1.670	0.30(0.28)	0.93	2180.7	21300.00
5	4501.94	28.28	1.666	0.30(0.28)	0.93	2192.5	30520.00
6	4559.92	29.18	1.631	0.30(0.28)	0.93	2287.9	30410.00
7	4585.69	29.64	1.614	0.30(0.28)	0.93	2333.4	30540.00
8	4643.27	30.98	1.577	0.30(0.28)	0.92	2453.3	30510.00
9	4644.05	31.00	1.577	0.30(0.28)	0.92	2454.9	30210.00
10	4684.15	31.28	1.571	0.30(0.28)	0.92	2498.9	30200.00
11	4796.93	32.39	1.545	0.30(0.28)	0.92	2665.5	30500.00
12	4867.60	33.13	1.528	0.30(0.27)	0.92	2772.2	30100.00
13	4889.75	33.72	1.514	0.30(0.27)	0.91	2852.2	30400.00
14	4949.75	35.53	1.473	0.30(0.27)	0.91	3090.6	30110.00
15	5070.41	38.64	1.401	0.30(0.27)	0.90	3494.8	30300.00
16	5101.23	39.77	1.375	0.30(0.27)	0.90	3629.9	21400.00
17	5425.38	53.57	1.150	0.30(0.26)	0.87	5126.4	13210.00
18	5430.67	53.96	1.145	0.30(0.26)	0.87	5164.6	13200.00
19	5407.69	55.38	1.125	0.30(0.26)	0.87	5268.4	13100.00
20	4571.80	80.96	0.920	0.30(0.26)	0.86	6519.5	13000.00
21	4477.13	83.33	0.904	0.30(0.26)	0.86	6539.3	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	114.93	17.10	2.238	0.30(0.30)	1.00	65.9	30900.00
2	114.82	17.15	2.235	0.30(0.30)	1.00	65.9	30910.00

LONGEST FLOWPATH FROM NODE 30900.00 TO NODE 13305.80 = 3403.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	3992.04	17.10	2.238	0.30(0.28)	0.93	1351.4	30900.00
2	3995.47	17.15	2.235	0.30(0.28)	0.93	1354.6	30910.00
3	4138.46	19.57	2.061	0.30(0.28)	0.93	1536.6	30800.00
4	4224.34	21.02	1.981	0.30(0.28)	0.93	1654.1	30700.00
5	4296.22	22.79	1.896	0.30(0.28)	0.93	1795.5	30600.00
6	4575.28	28.17	1.670	0.30(0.28)	0.93	2246.6	21300.00
7	4582.95	28.28	1.666	0.30(0.28)	0.93	2258.4	30520.00
8	4638.88	29.18	1.631	0.30(0.28)	0.93	2353.8	30410.00
9	4663.61	29.64	1.614	0.30(0.28)	0.93	2399.3	30540.00
10	4719.06	30.98	1.577	0.30(0.28)	0.93	2519.2	30510.00
11	4719.80	31.00	1.577	0.30(0.28)	0.93	2520.8	30210.00
12	4759.53	31.28	1.571	0.30(0.28)	0.92	2564.8	30200.00
13	4870.80	32.39	1.545	0.30(0.28)	0.92	2731.4	30500.00
14	4940.45	33.13	1.528	0.30(0.28)	0.92	2838.1	30100.00
15	4961.80	33.72	1.514	0.30(0.27)	0.92	2918.1	30400.00
16	5019.32	35.53	1.473	0.30(0.27)	0.91	3156.5	30110.00
17	5135.75	38.64	1.401	0.30(0.27)	0.90	3560.7	30300.00
18	5165.02	39.77	1.375	0.30(0.27)	0.90	3695.8	21400.00
19	5475.81	53.57	1.150	0.30(0.26)	0.88	5192.4	13210.00
20	5480.78	53.96	1.145	0.30(0.26)	0.87	5230.5	13200.00
21	5456.62	55.38	1.125	0.30(0.26)	0.87	5334.4	13100.00
22	4608.60	80.96	0.920	0.30(0.26)	0.86	6585.4	13000.00

23	4513.00	83.33	0.904	0.30(0.26)	0.86	6605.2	13010.00

TOTAL AREA(ACRES) = 6605.2

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 5480.78 Tc(MIN.) = 53.955
EFFECTIVE AREA(ACRES) = 5230.48 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.90
TOTAL AREA(ACRES) = 6605.2
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13306.00 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 254.00 DOWNSTREAM(FEET) = 245.50
CHANNEL LENGTH THRU SUBAREA(FEET) = 583.12 CHANNEL SLOPE = 0.0146
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 6.27
* 15 YEAR RAINFALL INTENSITY(INCH/HR) = 1.134
SUBAREA LOSS RATE DATA(AMC II):

DEVELOPMENT TYPE/ LAND USE	SCS SOIL GROUP	AREA (ACRES)	Fp (INCH/HR)	Ap (DECIMAL)	SCS CN
USER-DEFINED	-	68.77	0.30	0.998	-

SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) = 0.30
SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap = 0.998
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5506.61
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 12.77
AVERAGE FLOW DEPTH(FEET) = 6.27 TRAVEL TIME(MIN.) = 0.76
Tc(MIN.) = 54.72
SUBAREA AREA(ACRES) = 68.77 SUBAREA RUNOFF(CFS) = 51.66
EFFECTIVE AREA(ACRES) = 5299.25 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.88
TOTAL AREA(ACRES) = 6673.9 PEAK FLOW RATE(CFS) = 5480.78
NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 6.25

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 6.25 FLOW VELOCITY(FEET/SEC.) = 12.77
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13306.00 = 46294.83 FEET.

****
FLOW PROCESS FROM NODE 13306.00 TO NODE 13307.00 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 245.50 DOWNSTREAM(FEET) = 220.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1543.21 CHANNEL SLOPE = 0.0165
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 6.04
CHANNEL FLOW THRU SUBAREA(CFS) = 5480.78
FLOW VELOCITY(FEET/SEC.) = 13.33 FLOW DEPTH(FEET) = 6.04

```
  TRAVEL TIME(MIN.) =   1.93   Tc(MIN.) =   56.65
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610310X.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      146.05   21.52  0.30( 0.30) 1.00      97.9   31000.00
    TOTAL AREA(ACRES) =       97.9

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3992.04   20.07    2.027  0.30( 0.28) 0.94    1420.2   30900.00
      2     3995.47   20.11    2.025  0.30( 0.28) 0.94    1423.4   30910.00
      3     4138.46   22.50    1.910  0.30( 0.28) 0.94    1605.3   30800.00
      4     4224.34   23.93    1.841  0.30( 0.28) 0.94    1722.9   30700.00
      5     4296.22   25.68    1.764  0.30( 0.28) 0.93    1864.2   30600.00
      6     4575.28   31.01    1.577  0.30( 0.28) 0.93    2315.4   21300.00
      7     4582.95   31.12    1.574  0.30( 0.28) 0.93    2327.1   30520.00
      8     4638.88   32.01    1.554  0.30( 0.28) 0.93    2422.6   30410.00
      9     4663.61   32.47    1.543  0.30( 0.28) 0.93    2468.1   30540.00
     10     4719.06   33.80    1.513  0.30( 0.28) 0.93    2588.0   30510.00
     11     4719.80   33.82    1.512  0.30( 0.28) 0.93    2589.5   30210.00
     12     4759.53   34.09    1.506  0.30( 0.28) 0.93    2633.5   30200.00
     13     4870.80   35.18    1.481  0.30( 0.28) 0.92    2800.2   30500.00
     14     4940.45   35.91    1.464  0.30( 0.28) 0.92    2906.9   30100.00
     15     4961.80   36.49    1.451  0.30( 0.28) 0.92    2986.9   30400.00
     16     5019.32   38.29    1.409  0.30( 0.27) 0.91    3225.3   30110.00
     17     5135.75   41.38    1.347  0.30( 0.27) 0.90    3629.5   30300.00
     18     5165.02   42.51    1.327  0.30( 0.27) 0.90    3764.6   21400.00
     19     5475.81   56.26    1.112  0.30( 0.26) 0.88    5261.1   13210.00
     20     5480.78   56.65    1.107  0.30( 0.26) 0.88    5299.2   13200.00
     21     5456.62   58.08    1.087  0.30( 0.26) 0.88    5403.1   13100.00
     22     4608.60   83.80    0.901  0.30( 0.26) 0.86    6654.2   13000.00
     23     4513.00   86.18    0.885  0.30( 0.26) 0.86    6673.9   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
```



```
      1     146.05   21.52    1.957  0.30( 0.30) 1.00      97.9   31000.00
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  13307.00 =    5162.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4133.96   20.07    2.027  0.30( 0.28) 0.94    1511.5   30900.00
      2     4137.52   20.11    2.025  0.30( 0.28) 0.94    1514.9   30910.00
      3     4226.00   21.52    1.957  0.30( 0.28) 0.94    1628.8   31000.00
      4     4280.38   22.50    1.910  0.30( 0.28) 0.94    1703.2   30800.00
      5     4360.21   23.93    1.841  0.30( 0.28) 0.94    1820.8   30700.00
      6     4425.27   25.68    1.764  0.30( 0.28) 0.94    1962.1   30600.00
      7     4687.83   31.01    1.577  0.30( 0.28) 0.93    2413.3   21300.00
      8     4695.29   31.12    1.574  0.30( 0.28) 0.93    2425.0   30520.00
      9     4749.40   32.01    1.554  0.30( 0.28) 0.93    2520.5   30410.00
     10     4773.21   32.47    1.543  0.30( 0.28) 0.93    2566.0   30540.00
     11     4825.95   33.80    1.513  0.30( 0.28) 0.93    2685.8   30510.00
     12     4826.67   33.82    1.512  0.30( 0.28) 0.93    2687.4   30210.00
     13     4865.85   34.09    1.506  0.30( 0.28) 0.93    2731.4   30200.00
     14     4974.90   35.18    1.481  0.30( 0.28) 0.92    2898.1   30500.00
     15     5043.08   35.91    1.464  0.30( 0.28) 0.92    3004.8   30100.00
     16     5063.23   36.49    1.451  0.30( 0.28) 0.92    3084.8   30400.00
     17     5117.11   38.29    1.409  0.30( 0.27) 0.91    3323.2   30110.00
     18     5228.02   41.38    1.347  0.30( 0.27) 0.91    3727.4   30300.00
     19     5255.60   42.51    1.327  0.30( 0.27) 0.90    3862.5   21400.00
     20     5547.45   56.26    1.112  0.30( 0.26) 0.88    5359.0   13210.00
     21     5551.95   56.65    1.107  0.30( 0.26) 0.88    5397.1   13200.00
     22     5526.01   58.08    1.087  0.30( 0.26) 0.88    5501.0   13100.00
     23     4661.65   83.80    0.901  0.30( 0.26) 0.86    6752.1   13000.00
     24     4564.65   86.18    0.885  0.30( 0.26) 0.86    6771.8   13010.00
    TOTAL AREA(ACRES) =      6771.8

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     5551.95  Tc(MIN.) =   56.646
  EFFECTIVE AREA(ACRES) =   5397.13  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.88
  TOTAL AREA(ACRES) =     6771.8
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    220.00  DOWNSTREAM(FEET) =    215.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.62   CHANNEL SLOPE =  0.0054
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   8.23
  CHANNEL FLOW THRU SUBAREA(CFS) =    5551.95
  FLOW VELOCITY(FEET/SEC.) =   9.04   FLOW DEPTH(FEET) =   8.23
  TRAVEL TIME(MIN.) =   1.71   Tc(MIN.) =   58.35
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE =  12
----------------------------------------------------------------------------
```

```
  >>>>>CLEAR MEMORY BANK # 3 <<<<<
================================================================================

********************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE = 15.1
--------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
================================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610212X.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      369.68   34.43  0.30( 0.30) 1.00     342.8   21200.00
    TOTAL AREA(ACRES) =      342.8

********************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE =  11
--------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
================================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4133.96   21.93    1.937  0.30( 0.28) 0.94    1511.5   30900.00
      2     4137.52   21.97    1.935  0.30( 0.28) 0.94    1514.9   30910.00
      3     4226.00   23.37    1.868  0.30( 0.28) 0.94    1628.8   31000.00
      4     4280.38   24.34    1.822  0.30( 0.28) 0.94    1703.2   30800.00
      5     4360.21   25.76    1.761  0.30( 0.28) 0.94    1820.8   30700.00
      6     4425.27   27.51    1.695  0.30( 0.28) 0.94    1962.1   30600.00
      7     4687.83   32.81    1.535  0.30( 0.28) 0.93    2413.3   21300.00
      8     4695.29   32.91    1.533  0.30( 0.28) 0.93    2425.0   30520.00
      9     4749.40   33.80    1.513  0.30( 0.28) 0.93    2520.5   30410.00
     10     4773.21   34.25    1.502  0.30( 0.28) 0.93    2566.0   30540.00
     11     4825.95   35.58    1.472  0.30( 0.28) 0.93    2685.8   30510.00
     12     4826.67   35.60    1.471  0.30( 0.28) 0.93    2687.4   30210.00
     13     4865.85   35.86    1.465  0.30( 0.28) 0.93    2731.4   30200.00
     14     4974.90   36.94    1.440  0.30( 0.28) 0.92    2898.1   30500.00
     15     5043.08   37.66    1.424  0.30( 0.28) 0.92    3004.8   30100.00
     16     5063.23   38.25    1.410  0.30( 0.28) 0.92    3084.8   30400.00
     17     5117.11   40.04    1.369  0.30( 0.27) 0.91    3323.2   30110.00
     18     5228.02   43.12    1.317  0.30( 0.27) 0.91    3727.4   30300.00
     19     5255.60   44.24    1.298  0.30( 0.27) 0.90    3862.5   21400.00
     20     5547.45   57.97    1.088  0.30( 0.26) 0.88    5359.0   13210.00
     21     5551.95   58.35    1.083  0.30( 0.26) 0.88    5397.1   13200.00
     22     5526.01   59.79    1.063  0.30( 0.26) 0.88    5501.0   13100.00
     23     4661.65   85.59    0.889  0.30( 0.26) 0.86    6752.1   13000.00
     24     4564.65   87.99    0.873  0.30( 0.26) 0.86    6771.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      369.68   34.43    1.498  0.30( 0.30) 1.00     342.8   21200.00
  LONGEST FLOWPATH FROM NODE  21200.00 TO NODE  13308.00 =   11049.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
```



```
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4455.77   21.93    1.937  0.30( 0.28) 0.95    1729.9   30900.00
      2     4459.54   21.97    1.935  0.30( 0.28) 0.95    1733.6   30910.00
      3     4554.45   23.37    1.868  0.30( 0.28) 0.95    1861.5   31000.00
      4     4612.31   24.34    1.822  0.30( 0.28) 0.95    1945.6   30800.00
      5     4697.53   25.76    1.761  0.30( 0.28) 0.95    2077.3   30700.00
      6     4769.10   27.51    1.695  0.30( 0.28) 0.95    2236.0   30600.00
      7     5051.07   32.81    1.535  0.30( 0.28) 0.94    2739.9   21300.00
      8     5058.96   32.91    1.533  0.30( 0.28) 0.94    2752.7   30520.00
      9     5116.72   33.80    1.513  0.30( 0.28) 0.94    2857.0   30410.00
     10     5142.25   34.25    1.502  0.30( 0.28) 0.94    2907.0   30540.00
     11     5149.73   34.43    1.498  0.30( 0.28) 0.94    2924.3   21200.00
     12     5187.44   35.58    1.472  0.30( 0.28) 0.94    3028.6   30510.00
     13     5188.04   35.60    1.471  0.30( 0.28) 0.94    3030.2   30210.00
     14     5225.33   35.86    1.465  0.30( 0.28) 0.94    3074.2   30200.00
     15     5326.72   36.94    1.440  0.30( 0.28) 0.93    3240.9   30500.00
     16     5389.78   37.66    1.424  0.30( 0.28) 0.93    3347.6   30100.00
     17     5405.78   38.25    1.410  0.30( 0.28) 0.93    3427.6   30400.00
     18     5447.01   40.04    1.369  0.30( 0.28) 0.92    3665.9   30110.00
     19     5541.79   43.12    1.317  0.30( 0.27) 0.91    4070.2   30300.00
     20     5563.47   44.24    1.298  0.30( 0.27) 0.91    4205.3   21400.00
     21     5790.71   57.97    1.088  0.30( 0.27) 0.89    5701.8   13210.00
     22     5793.54   58.35    1.083  0.30( 0.27) 0.89    5739.9   13200.00
     23     5761.42   59.79    1.063  0.30( 0.27) 0.88    5843.8   13100.00
     24     4843.50   85.59    0.889  0.30( 0.26) 0.87    7094.9   13000.00
     25     4741.57   87.99    0.873  0.30( 0.26) 0.87    7114.6   13010.00
    TOTAL AREA(ACRES) =      7114.6

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     5793.54  Tc(MIN.) =   58.353
  EFFECTIVE AREA(ACRES) =   5739.91  AREA-AVERAGED Fm(INCH/HR) =  0.27
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.89
  TOTAL AREA(ACRES) =     7114.6
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  12
--------------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
================================================================================

********************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  10
--------------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
================================================================================
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =     7114.6  TC(MIN.) =     58.35
  EFFECTIVE AREA(ACRES) =   5739.91  AREA-AVERAGED Fm(INCH/HR)=  0.27
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap = 0.886
  PEAK FLOW RATE(CFS)   =    5793.54

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4455.77   21.93    1.937  0.30( 0.28) 0.95    1729.9   30900.00
      2     4459.54   21.97    1.935  0.30( 0.28) 0.95    1733.6   30910.00
```

3	4554.45	23.37	1.868	0.30(0.28)	0.95	1861.5	31000.00
4	4612.31	24.34	1.822	0.30(0.28)	0.95	1945.6	30800.00
5	4697.53	25.76	1.761	0.30(0.28)	0.95	2077.3	30700.00
6	4769.10	27.51	1.695	0.30(0.28)	0.95	2236.0	30600.00
7	5051.07	32.81	1.535	0.30(0.28)	0.94	2739.9	21300.00
8	5058.96	32.91	1.533	0.30(0.28)	0.94	2752.7	30520.00
9	5116.72	33.80	1.513	0.30(0.28)	0.94	2857.0	30410.00
10	5142.25	34.25	1.502	0.30(0.28)	0.94	2907.0	30540.00
11	5149.73	34.43	1.498	0.30(0.28)	0.94	2924.3	21200.00
12	5187.44	35.58	1.472	0.30(0.28)	0.94	3028.6	30510.00
13	5188.04	35.60	1.471	0.30(0.28)	0.94	3030.2	30210.00
14	5225.33	35.86	1.465	0.30(0.28)	0.94	3074.2	30200.00
15	5326.72	36.94	1.440	0.30(0.28)	0.93	3240.9	30500.00
16	5389.78	37.66	1.424	0.30(0.28)	0.93	3347.6	30100.00
17	5405.78	38.25	1.410	0.30(0.28)	0.93	3427.6	30400.00
18	5447.01	40.04	1.369	0.30(0.28)	0.92	3665.9	30110.00
19	5541.79	43.12	1.317	0.30(0.27)	0.91	4070.2	30300.00
20	5563.47	44.24	1.298	0.30(0.27)	0.91	4205.3	21400.00
21	5790.71	57.97	1.088	0.30(0.27)	0.89	5701.8	13210.00
22	5793.54	58.35	1.083	0.30(0.27)	0.89	5739.9	13200.00
23	5761.42	59.79	1.063	0.30(0.27)	0.88	5843.8	13100.00
24	4843.50	85.59	0.889	0.30(0.26)	0.87	7094.9	13000.00
25	4741.57	87.99	0.873	0.30(0.26)	0.87	7114.6	13010.00

END OF RATIONAL METHOD ANALYSIS

```
******************************************************************************
             RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            (Reference: 1986 ORANGE COUNTY HYDROLOGY CRITERION)
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              Ver. 20.0  Release Date: 06/01/2013  License ID 1264

                          Analysis prepared by:




 ************************ DESCRIPTION OF STUDY *************************
* GOBERNADORA WATERSHED STUDY - RATIONAL METHOD                        *
* LOCAL WATERSHED S33 - FREE DRAINING - EXISTING CONDITION             *
* 100-YR EV JULY 2017 JMITAL                                           *
 ***********************************************************************

  FILE NAME: RE00EV33.DAT
  TIME/DATE OF STUDY: 08:14 07/27/2017
==============================================================================
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
==============================================================================
                    --*TIME-OF-CONCENTRATION MODEL*--

  USER SPECIFIED STORM EVENT(YEAR) =   25.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  36.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  *DATA BANK RAINFALL USED*
  *ANTECEDENT MOISTURE CONDITION (AMC) II ASSUMED FOR RATIONAL METHOD*

  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  ===== ====== ===== =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0312 0.167 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
  *USER-SPECIFIED MINIMUM TOPOGRAPHIC SLOPE ADJUSTMENT NOT SELECTED

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S31X00.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     3200.30   33.81  0.30( 0.24) 0.81    2538.8   13100.00
      2     3223.29   57.47  0.30( 0.24) 0.81    3777.0   13000.00
      3     3119.89   59.67  0.30( 0.24) 0.81    3796.8   13010.00
    TOTAL AREA(ACRES) =     3796.8

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 15.1
------------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
==============================================================================
  PEAK FLOWRATE TABLE FILE NAME: S32X00.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     1444.26   32.09  0.30( 0.25) 0.83    1115.3   13210.00
      2     1446.65   32.62  0.30( 0.25) 0.83    1127.6   13200.00
    TOTAL AREA(ACRES) =     1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13221.00 TO NODE  13222.00 IS CODE = 14.0
------------------------------------------------------------------------------
  >>>>>MEMORY BANK #  2 COPIED ONTO MAIN-STREAM MEMORY<<<<<
==============================================================================

  MAIN-STREAM MEMORY DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1     1444.26   32.09  0.30( 0.25) 0.83    1115.3   13210.00
      2     1446.65   32.62  0.30( 0.25) 0.83    1127.6   13200.00
    TOTAL AREA(ACRES) =      1127.6

******************************************************************************
  FLOW PROCESS FROM NODE  13112.00 TO NODE  13222.00 IS CODE =  11
------------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     1444.26   32.09    1.684  0.30( 0.25) 0.83    1115.3   13210.00
      2     1446.65   32.62    1.669  0.30( 0.25) 0.83    1127.6   13200.00
  LONGEST FLOWPATH FROM NODE  13200.00 TO NODE  13222.00 =   16821.05 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3200.30   33.81    1.635  0.30( 0.24) 0.81    2538.8   13100.00
      2     3223.29   57.47    1.211  0.30( 0.24) 0.81    3777.0   13000.00
      3     3119.89   59.67    1.186  0.30( 0.24) 0.81    3796.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4588.62   32.09    1.684  0.30( 0.24) 0.82    3524.7   13210.00
      2     4608.48   32.62    1.669  0.30( 0.24) 0.82    3576.8   13200.00
      3     4612.72   33.81    1.635  0.30( 0.24) 0.82    3666.4   13100.00
      4     4203.91   57.47    1.211  0.30( 0.24) 0.81    4904.6   13000.00
```

```
      5     4074.50   59.67    1.186  0.30( 0.24) 0.81    4924.4   13010.00
    TOTAL AREA(ACRES) =      4924.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4612.72  Tc(MIN.) =   33.814
  EFFECTIVE AREA(ACRES) =   3666.44  AREA-AVERAGED Fm(INCH/HR) =  0.24
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
  TOTAL AREA(ACRES) =     4924.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13222.00 =   32126.49 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13222.00 TO NODE  13223.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    427.51  DOWNSTREAM(FEET) =    416.40
  CHANNEL LENGTH THRU SUBAREA(FEET) =   864.00   CHANNEL SLOPE =  0.0129
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.89
  CHANNEL FLOW THRU SUBAREA(CFS) =    4612.72
  FLOW VELOCITY(FEET/SEC.) =  11.59   FLOW DEPTH(FEET) =   5.89
  TRAVEL TIME(MIN.) =   1.24   Tc(MIN.) =   35.06
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610301Y.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       68.38   12.33  0.30( 0.30) 1.00      29.3   30100.00
      2       61.22   14.98  0.30( 0.30) 1.00      29.7   30110.00
    TOTAL AREA(ACRES) =       29.7

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13223.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4588.62   33.33    1.648  0.30( 0.24) 0.82    3524.7   13210.00
      2     4608.48   33.86    1.634  0.30( 0.24) 0.82    3576.8   13200.00
      3     4612.72   35.06    1.602  0.30( 0.24) 0.82    3666.4   13100.00
      4     4204.12   58.75    1.196  0.30( 0.24) 0.81    4904.6   13000.00
```



```
      5     4111.33   60.96    1.171  0.30( 0.24) 0.81    4924.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       68.38   12.33    2.894  0.30( 0.30) 1.00      29.3   30100.00
      2       61.22   14.98    2.592  0.30( 0.30) 1.00      29.7   30110.00
  LONGEST FLOWPATH FROM NODE  30110.00 TO NODE  13223.00 =    2058.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3272.12   12.33    2.894  0.30( 0.25) 0.82    1333.2   30100.00
      2     3509.81   14.98    2.592  0.30( 0.25) 0.82    1613.7   30110.00
      3     4624.63   33.33    1.648  0.30( 0.25) 0.82    3554.3   13210.00
      4     4644.11   33.86    1.634  0.30( 0.25) 0.82    3606.5   13200.00
      5     4647.50   35.06    1.602  0.30( 0.24) 0.82    3696.1   13100.00
      6     4228.06   58.75    1.196  0.30( 0.24) 0.81    4934.2   13000.00
      7     4134.61   60.96    1.171  0.30( 0.24) 0.81    4954.1   13010.00
    TOTAL AREA(ACRES) =      4954.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4647.50  Tc(MIN.) =   35.057
  EFFECTIVE AREA(ACRES) =   3696.11  AREA-AVERAGED Fm(INCH/HR) =  0.24
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
  TOTAL AREA(ACRES) =     4954.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13223.00 =   32990.49 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13223.00 TO NODE  13224.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    416.40  DOWNSTREAM(FEET) =    410.60
  CHANNEL LENGTH THRU SUBAREA(FEET) =   408.51   CHANNEL SLOPE =  0.0142
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.75
  CHANNEL FLOW THRU SUBAREA(CFS) =    4647.50
  FLOW VELOCITY(FEET/SEC.) =  12.02   FLOW DEPTH(FEET) =   5.75
  TRAVEL TIME(MIN.) =   0.57   Tc(MIN.) =   35.62
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610302Y.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
```

```
 STREAM        Q      Tc      Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.)   (INCH/HR)           (ACRES)    NODE
    1        30.88   10.44  0.30( 0.30) 1.00       11.9   30210.00
    2        30.60   10.76  0.30( 0.30) 1.00       12.0   30200.00
  TOTAL AREA(ACRES) =        12.0

****************************************************************************
 FLOW PROCESS FROM NODE  13224.00 TO NODE  13224.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
    1      3272.12   12.96     2.813  0.30( 0.25) 0.82    1333.2   30100.00
    2      3509.81   15.60     2.533  0.30( 0.25) 0.82    1613.7   30110.00
    3      4624.63   33.90     1.633  0.30( 0.25) 0.82    3554.3   13210.00
    4      4644.11   34.43     1.618  0.30( 0.25) 0.82    3606.5   13200.00
    5      4647.50   35.62     1.588  0.30( 0.24) 0.82    3696.1   13100.00
    6      4228.06   59.33     1.189  0.30( 0.24) 0.81    4934.2   13000.00
    7      4134.61   61.55     1.165  0.30( 0.24) 0.81    4954.1   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
    1        30.88   10.44     3.181  0.30( 0.30) 1.00       11.9   30210.00
    2        30.60   10.76     3.127  0.30( 0.30) 1.00       12.0   30200.00
 LONGEST FLOWPATH FROM NODE  30200.00 TO NODE  13224.00 =    1209.00 FEET.

 ** PEAK FLOW RATE TABLE **
 STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
    1      3042.09   10.44     3.181  0.30( 0.25) 0.82    1085.3   30210.00
    2      3077.01   10.76     3.127  0.30( 0.25) 0.82    1118.2   30200.00
    3      3299.33   12.96     2.813  0.30( 0.25) 0.82    1345.2   30100.00
    4      3533.99   15.60     2.533  0.30( 0.25) 0.82    1625.7   30110.00
    5      4639.06   33.90     1.633  0.30( 0.25) 0.82    3566.4   13210.00
    6      4658.38   34.43     1.618  0.30( 0.25) 0.82    3618.5   13200.00
    7      4661.44   35.62     1.588  0.30( 0.25) 0.82    3708.1   13100.00
    8      4237.69   59.33     1.189  0.30( 0.24) 0.81    4946.3   13000.00
    9      4143.97   61.55     1.165  0.30( 0.24) 0.81    4966.1   13010.00
  TOTAL AREA(ACRES) =      4966.1

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     4661.44  Tc(MIN.) =   35.624
 EFFECTIVE AREA(ACRES) =   3708.14  AREA-AVERAGED Fm(INCH/HR) =  0.25
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.82
 TOTAL AREA(ACRES) =     4966.1
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13224.00 =   33399.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13224.00 TO NODE  13301.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
```



```
 ELEVATION DATA: UPSTREAM(FEET) =    410.60  DOWNSTREAM(FEET) =    382.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1260.70   CHANNEL SLOPE =  0.0227
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   5.08
 *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  1.551
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       61.66      0.30     0.998     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    4696.18
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  14.18
 AVERAGE FLOW DEPTH(FEET) =   5.08   TRAVEL TIME(MIN.) =   1.48
 Tc(MIN.) =   37.11
 SUBAREA AREA(ACRES) =    61.66       SUBAREA RUNOFF(CFS) =   69.48
 EFFECTIVE AREA(ACRES) =   3769.80     AREA-AVERAGED Fm(INCH/HR) =   0.25
 AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.82
 TOTAL AREA(ACRES) =     5027.8          PEAK FLOW RATE(CFS) =    4661.44
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   5.06

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  5.06   FLOW VELOCITY(FEET/SEC.) =  14.15
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610303Y.DNA
 MEMORY BANK #  3 DEFINED AS FOLLOWS:
  STREAM        Q      Tc      Fp(Fm)      Ap      Ae     HEADWATER
  NUMBER      (CFS)  (MIN.)   (INCH/HR)           (ACRES)    NODE
     1       280.53   20.42  0.30( 0.30) 1.00      166.2   30300.00
   TOTAL AREA(ACRES) =       166.2

****************************************************************************
 FLOW PROCESS FROM NODE  13301.00 TO NODE  13301.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
 NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)    NODE
    1      3042.09   12.12     2.922  0.30( 0.25) 0.83    1146.9   30210.00
    2      3077.01   12.44     2.880  0.30( 0.25) 0.83    1179.8   30200.00
    3      3299.33   14.61     2.629  0.30( 0.25) 0.83    1406.9   30100.00
    4      3533.99   17.21     2.396  0.30( 0.25) 0.83    1687.4   30110.00
    5      4639.06   35.38     1.594  0.30( 0.25) 0.82    3628.0   13210.00
    6      4658.38   35.91     1.580  0.30( 0.25) 0.82    3680.1   13200.00
    7      4661.44   37.11     1.551  0.30( 0.25) 0.82    3769.8   13100.00
    8      4237.69   60.86     1.172  0.30( 0.24) 0.82    5007.9   13000.00
```

```
     9     4143.97   63.09    1.149  0.30( 0.24) 0.82    5027.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      280.53   20.42    2.175  0.30( 0.30) 1.00     166.2   30300.00
  LONGEST FLOWPATH FROM NODE  30300.00 TO NODE  13301.00 =    6391.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3274.96   12.12    2.922  0.30( 0.25) 0.84    1245.6   30210.00
      2     3312.07   12.44    2.880  0.30( 0.25) 0.84    1281.1   30200.00
      3     3548.60   14.61    2.629  0.30( 0.25) 0.84    1525.8   30100.00
      4     3798.29   17.21    2.396  0.30( 0.25) 0.84    1827.5   30110.00
      5     4009.74   20.42    2.175  0.30( 0.25) 0.84    2196.4   30300.00
      6     4832.59   35.38    1.594  0.30( 0.25) 0.83    3794.2   13210.00
      7     4849.92   35.91    1.580  0.30( 0.25) 0.83    3846.4   13200.00
      8     4848.64   37.11    1.551  0.30( 0.25) 0.83    3936.0   13100.00
      9     4368.21   60.86    1.172  0.30( 0.25) 0.82    5174.1   13000.00
     10     4270.95   63.09    1.149  0.30( 0.25) 0.82    5194.0   13010.00
    TOTAL AREA(ACRES) =      5194.0

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     4849.92  Tc(MIN.) =   35.912
  EFFECTIVE AREA(ACRES) =   3846.37  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.83
  TOTAL AREA(ACRES) =     5194.0
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13301.00 =   34659.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    382.00  DOWNSTREAM(FEET) =    375.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1141.09   CHANNEL SLOPE =  0.0061
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   7.40
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  1.530
  SUBAREA LOSS RATE DATA(AMC  II):
   DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
       LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
  USER-DEFINED               -        9.42      0.30     1.000     -
  SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
  SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    4855.13
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   9.09
  AVERAGE FLOW DEPTH(FEET) =   7.40   TRAVEL TIME(MIN.) =   2.09
  Tc(MIN.) =   38.00
  SUBAREA AREA(ACRES) =     9.42       SUBAREA RUNOFF(CFS) =   10.43
  EFFECTIVE AREA(ACRES) =   3855.79     AREA-AVERAGED Fm(INCH/HR) =   0.25
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.83
  TOTAL AREA(ACRES) =     5203.4         PEAK FLOW RATE(CFS) =    4849.92
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
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```
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   7.40

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  7.40   FLOW VELOCITY(FEET/SEC.) =   9.08
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13301.00 TO NODE  13302.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610214Y.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      346.82   23.85  0.30( 0.30) 1.00     227.7   21400.00
    TOTAL AREA(ACRES) =      227.7

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13302.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3274.96   14.48    2.643  0.30( 0.25) 0.85    1255.0   30210.00
      2     3312.07   14.78    2.612  0.30( 0.25) 0.85    1290.5   30200.00
      3     3548.60   16.91    2.421  0.30( 0.25) 0.84    1535.2   30100.00
      4     3798.29   19.46    2.235  0.30( 0.25) 0.84    1836.9   30110.00
      5     4009.74   22.64    2.052  0.30( 0.25) 0.84    2205.8   30300.00
      6     4832.59   37.48    1.543  0.30( 0.25) 0.83    3803.7   13210.00
      7     4849.92   38.00    1.530  0.30( 0.25) 0.83    3855.8   13200.00
      8     4848.64   39.20    1.504  0.30( 0.25) 0.83    3945.4   13100.00
      9     4368.21   63.02    1.150  0.30( 0.25) 0.82    5183.6   13000.00
     10     4270.95   65.26    1.127  0.30( 0.25) 0.82    5203.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      346.82   23.85    1.992  0.30( 0.30) 1.00     227.7   21400.00
  LONGEST FLOWPATH FROM NODE  21400.00 TO NODE  13302.00 =    6708.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3566.43   14.48    2.643  0.30( 0.26) 0.86    1393.3   30210.00
      2     3605.73   14.78    2.612  0.30( 0.26) 0.86    1431.6   30200.00
```

```
      3     3856.70   16.91    2.421  0.30( 0.26) 0.86    1696.6   30100.00
      4     4121.96   19.46    2.235  0.30( 0.26) 0.86    2022.7   30110.00
      5     4350.56   22.64    2.052  0.30( 0.26) 0.85    2422.0   30300.00
      6     4423.60   23.85    1.992  0.30( 0.26) 0.85    2563.7   21400.00
      7     5087.22   37.48    1.543  0.30( 0.25) 0.84    4031.3   13210.00
      8     5102.08   38.00    1.530  0.30( 0.25) 0.84    4083.4   13200.00
      9     5095.36   39.20    1.504  0.30( 0.25) 0.84    4173.1   13100.00
     10     4542.31   63.02    1.150  0.30( 0.25) 0.83    5411.2   13000.00
     11     4440.43   65.26    1.127  0.30( 0.25) 0.83    5431.1   13010.00
    TOTAL AREA(ACRES) =      5431.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     5102.08  Tc(MIN.) =   38.004
  EFFECTIVE AREA(ACRES) =   4083.44  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.84
  TOTAL AREA(ACRES) =     5431.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13302.00 =   35800.79 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13302.00 TO NODE  13303.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    375.00  DOWNSTREAM(FEET) =    355.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  2193.96   CHANNEL SLOPE =  0.0091
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.83
  CHANNEL FLOW THRU SUBAREA(CFS) =    5102.08
  FLOW VELOCITY(FEET/SEC.) =  10.60   FLOW DEPTH(FEET) =   6.83
  TRAVEL TIME(MIN.) =   3.45   Tc(MIN.) =   41.46
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610213Y.DNA
  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      198.30   15.49  0.30( 0.30) 1.00      98.2   21300.00
    TOTAL AREA(ACRES) =       98.2

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13303.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================
```



```
  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3566.43   18.33    2.313  0.30( 0.26) 0.86    1393.3   30210.00
      2     3605.73   18.62    2.292  0.30( 0.26) 0.86    1431.6   30200.00
      3     3856.70   20.66    2.161  0.30( 0.26) 0.86    1696.6   30100.00
      4     4121.96   23.14    2.027  0.30( 0.26) 0.86    2022.7   30110.00
      5     4350.56   26.26    1.887  0.30( 0.26) 0.85    2422.0   30300.00
      6     4423.60   27.45    1.840  0.30( 0.26) 0.85    2563.7   21400.00
      7     5087.22   40.93    1.467  0.30( 0.25) 0.84    4031.3   13210.00
      8     5102.08   41.46    1.457  0.30( 0.25) 0.84    4083.4   13200.00
      9     5095.36   42.65    1.434  0.30( 0.25) 0.84    4173.1   13100.00
     10     4542.31   66.59    1.114  0.30( 0.25) 0.83    5411.2   13000.00
     11     4440.43   68.86    1.093  0.30( 0.25) 0.83    5431.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      198.30   15.49    2.543  0.30( 0.30) 1.00      98.2   21300.00
  LONGEST FLOWPATH FROM NODE  21300.00 TO NODE  13303.00 =    2988.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3551.92   15.49    2.543  0.30( 0.26) 0.87    1276.2   21300.00
      2     3744.35   18.33    2.313  0.30( 0.26) 0.87    1491.5   30210.00
      3     3781.83   18.62    2.292  0.30( 0.26) 0.87    1529.8   30200.00
      4     4021.19   20.66    2.161  0.30( 0.26) 0.87    1794.8   30100.00
      5     4274.59   23.14    2.027  0.30( 0.26) 0.86    2120.9   30110.00
      6     4490.83   26.26    1.887  0.30( 0.26) 0.86    2520.2   30300.00
      7     4559.73   27.45    1.840  0.30( 0.26) 0.86    2661.9   21400.00
      8     5190.42   40.93    1.467  0.30( 0.25) 0.84    4129.5   13210.00
      9     5204.36   41.46    1.457  0.30( 0.25) 0.84    4181.7   13200.00
     10     5195.59   42.65    1.434  0.30( 0.25) 0.84    4271.3   13100.00
     11     4614.29   66.59    1.114  0.30( 0.25) 0.83    5509.4   13000.00
     12     4510.56   68.86    1.093  0.30( 0.25) 0.83    5529.3   13010.00
    TOTAL AREA(ACRES) =      5529.3

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     5204.36  Tc(MIN.) =   41.455
  EFFECTIVE AREA(ACRES) =   4181.66  AREA-AVERAGED Fm(INCH/HR) =  0.25
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.84
  TOTAL AREA(ACRES) =     5529.3
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13303.00 =   37994.75 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13303.00 TO NODE  13304.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    355.00  DOWNSTREAM(FEET) =    350.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.40   CHANNEL SLOPE =  0.0054
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   7.95
  *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  1.423
```

```
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       13.84      0.30      1.000     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    5211.36
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   8.87
 AVERAGE FLOW DEPTH(FEET) =   7.95   TRAVEL TIME(MIN.) =   1.74
 Tc(MIN.) =   43.19
 SUBAREA AREA(ACRES) =    13.84       SUBAREA RUNOFF(CFS) =   14.00
 EFFECTIVE AREA(ACRES) =   4195.50     AREA-AVERAGED Fm(INCH/HR) =   0.25
 AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.84
 TOTAL AREA(ACRES) =     5543.1         PEAK FLOW RATE(CFS) =    5204.36
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   7.95

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  7.95   FLOW VELOCITY(FEET/SEC.) =   8.87
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 3 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610304Y.DNA
 MEMORY BANK #  3 DEFINED AS FOLLOWS:
  STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
     1      296.79   18.50  0.30( 0.30) 1.00     164.8   30410.00
     2      283.27   23.22  0.30( 0.30) 1.00     182.7   30400.00
   TOTAL AREA(ACRES) =      182.7

****************************************************************************
 FLOW PROCESS FROM NODE  13304.00 TO NODE  13304.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     3551.92   17.44    2.378  0.30( 0.26) 0.87    1290.0   21300.00
     2     3744.35   20.24    2.186  0.30( 0.26) 0.87    1505.3   30210.00
     3     3781.83   20.53    2.169  0.30( 0.26) 0.87    1543.7   30200.00
     4     4021.19   22.54    2.057  0.30( 0.26) 0.87    1808.7   30100.00
     5     4274.59   24.98    1.941  0.30( 0.26) 0.86    2134.8   30110.00
     6     4490.83   28.07    1.817  0.30( 0.26) 0.86    2534.0   30300.00
     7     4559.73   29.25    1.775  0.30( 0.26) 0.86    2675.7   21400.00
```



```
     8     5190.42   42.67    1.433  0.30( 0.25) 0.84    4143.4   13210.00
     9     5204.36   43.19    1.423  0.30( 0.25) 0.84    4195.5   13200.00
    10     5195.59   44.39    1.402  0.30( 0.25) 0.84    4285.2   13100.00
    11     4614.29   68.39    1.097  0.30( 0.25) 0.83    5523.3   13000.00
    12     4510.56   70.67    1.077  0.30( 0.25) 0.83    5543.1   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

 ** MEMORY BANK #  3 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      296.79   18.50    2.301  0.30( 0.30) 1.00     164.8   30410.00
     2      283.27   23.22    2.023  0.30( 0.30) 1.00     182.7   30400.00
 LONGEST FLOWPATH FROM NODE  30400.00 TO NODE  13304.00 =    5899.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     3842.66   17.44    2.378  0.30( 0.27) 0.89    1445.4   21300.00
     2     3921.26   18.50    2.301  0.30( 0.27) 0.89    1536.0   30410.00
     3     4036.15   20.24    2.186  0.30( 0.27) 0.88    1676.7   30210.00
     4     4072.81   20.53    2.169  0.30( 0.27) 0.88    1716.2   30200.00
     5     4306.42   22.54    2.057  0.30( 0.26) 0.88    1988.8   30100.00
     6     4375.22   23.22    2.023  0.30( 0.26) 0.88    2082.4   30400.00
     7     4544.37   24.98    1.941  0.30( 0.26) 0.87    2317.5   30110.00
     8     4740.25   28.07    1.817  0.30( 0.26) 0.87    2716.7   30300.00
     9     4802.24   29.25    1.775  0.30( 0.26) 0.87    2858.4   21400.00
    10     5376.79   42.67    1.433  0.30( 0.25) 0.85    4326.1   13210.00
    11     5389.11   43.19    1.423  0.30( 0.25) 0.85    4378.2   13200.00
    12     5376.76   44.39    1.402  0.30( 0.25) 0.85    4467.9   13100.00
    13     4745.44   68.39    1.097  0.30( 0.25) 0.84    5706.0   13000.00
    14     4638.38   70.67    1.077  0.30( 0.25) 0.84    5725.8   13010.00
  TOTAL AREA(ACRES) =      5725.8

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     5389.11  Tc(MIN.) =   43.193
 EFFECTIVE AREA(ACRES) =   4378.21  AREA-AVERAGED Fm(INCH/HR) =  0.25
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
 TOTAL AREA(ACRES) =     5725.8
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13304.00 =   38920.15 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13304.00 TO NODE  13305.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    350.00  DOWNSTREAM(FEET) =    315.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  2966.27   CHANNEL SLOPE =  0.0118
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   6.57
 *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  1.351
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/       SCS SOIL   AREA      Fp         Ap      SCS
      LAND USE             GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED                -       27.39      0.30      1.000     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  1.000
```

```
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    5402.06
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  11.80
  AVERAGE FLOW DEPTH(FEET) =   6.57   TRAVEL TIME(MIN.) =   4.19
  Tc(MIN.) =   47.38
  SUBAREA AREA(ACRES) =    27.39       SUBAREA RUNOFF(CFS) =   25.91
  EFFECTIVE AREA(ACRES) =   4405.60     AREA-AVERAGED Fm(INCH/HR) =   0.25
  AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.85
  TOTAL AREA(ACRES) =     5753.2         PEAK FLOW RATE(CFS) =    5389.11
  NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.56

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  6.56   FLOW VELOCITY(FEET/SEC.) =  11.79
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610305Y.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      864.46   22.23  0.30( 0.30) 1.00     541.6   30520.00
      2      866.54   23.62  0.30( 0.30) 1.00     565.4   30540.00
      3      851.47   24.95  0.30( 0.30) 1.00     576.1   30510.00
      4      829.62   26.39  0.30( 0.30) 1.00     582.8   30500.00
    TOTAL AREA(ACRES) =      582.8

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     3842.66   22.08    2.081  0.30( 0.27) 0.89    1472.8   21300.00
      2     3921.26   23.11    2.028  0.30( 0.27) 0.89    1563.4   30410.00
      3     4036.15   24.81    1.948  0.30( 0.27) 0.89    1704.1   30210.00
      4     4072.81   25.09    1.936  0.30( 0.27) 0.89    1743.6   30200.00
      5     4306.42   27.02    1.856  0.30( 0.26) 0.88    2016.2   30100.00
      6     4375.22   27.68    1.831  0.30( 0.26) 0.88    2109.8   30400.00
      7     4544.37   29.39    1.770  0.30( 0.26) 0.88    2344.8   30110.00
      8     4740.25   32.42    1.674  0.30( 0.26) 0.87    2744.1   30300.00
      9     4802.24   33.59    1.641  0.30( 0.26) 0.87    2885.8   21400.00
     10     5376.79   46.86    1.359  0.30( 0.26) 0.85    4353.5   13210.00
     11     5389.11   47.38    1.351  0.30( 0.25) 0.85    4405.6   13200.00
```



```
     12     5376.76   48.58    1.332  0.30( 0.25) 0.85    4495.3   13100.00
     13     4745.44   72.74    1.060  0.30( 0.25) 0.84    5733.4   13000.00
     14     4638.38   75.06    1.041  0.30( 0.25) 0.84    5753.2   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      864.46   22.23    2.073  0.30( 0.30) 1.00     541.6   30520.00
      2      866.54   23.62    2.003  0.30( 0.30) 1.00     565.4   30540.00
      3      851.47   24.95    1.942  0.30( 0.30) 1.00     576.1   30510.00
      4      829.62   26.39    1.881  0.30( 0.30) 1.00     582.8   30500.00
  LONGEST FLOWPATH FROM NODE  30500.00 TO NODE  13305.00 =    9458.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4705.22   22.08    2.081  0.30( 0.28) 0.92    2011.0   21300.00
      2     4718.12   22.23    2.073  0.30( 0.28) 0.92    2027.1   30520.00
      3     4787.04   23.11    2.028  0.30( 0.28) 0.92    2120.0   30410.00
      4     4822.52   23.62    2.003  0.30( 0.27) 0.92    2171.3   30540.00
      5     4889.17   24.81    1.948  0.30( 0.27) 0.91    2279.1   30210.00
      6     4905.81   24.95    1.942  0.30( 0.27) 0.91    2299.8   30510.00
      7     4922.18   25.09    1.936  0.30( 0.27) 0.91    2320.3   30200.00
      8     5059.31   26.39    1.881  0.30( 0.27) 0.91    2509.5   30500.00
      9     5122.83   27.02    1.856  0.30( 0.27) 0.91    2599.0   30100.00
     10     5178.45   27.68    1.831  0.30( 0.27) 0.91    2692.7   30400.00
     11     5315.53   29.39    1.770  0.30( 0.27) 0.90    2927.7   30110.00
     12     5461.26   32.42    1.674  0.30( 0.27) 0.89    3327.0   30300.00
     13     5505.81   33.59    1.641  0.30( 0.27) 0.89    3468.7   21400.00
     14     5932.48   46.86    1.359  0.30( 0.26) 0.87    4936.3   13210.00
     15     5940.38   47.38    1.351  0.30( 0.26) 0.87    4988.4   13200.00
     16     5918.08   48.58    1.332  0.30( 0.26) 0.87    5078.1   13100.00
     17     5144.03   72.74    1.060  0.30( 0.26) 0.85    6316.2   13000.00
     18     5027.21   75.06    1.041  0.30( 0.26) 0.85    6336.1   13010.00
    TOTAL AREA(ACRES) =      6336.1

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     5940.38  Tc(MIN.) =   47.382
  EFFECTIVE AREA(ACRES) =   4988.44  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.90
  TOTAL AREA(ACRES) =     6336.1
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.00 =   41886.42 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.00 TO NODE  13305.20 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    315.00  DOWNSTREAM(FEET) =    284.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =  1317.91   CHANNEL SLOPE =  0.0235
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.73
  CHANNEL FLOW THRU SUBAREA(CFS) =    5940.38
  FLOW VELOCITY(FEET/SEC.) =  15.44   FLOW DEPTH(FEET) =   5.73
  TRAVEL TIME(MIN.) =   1.42   Tc(MIN.) =   48.80
```

```
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610306Y.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS) (MIN.)  (INCH/HR)          (ACRES)    NODE
      1       72.95   18.38  0.30( 0.30) 1.00      40.4   30600.00
    TOTAL AREA(ACRES) =       40.4

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.20 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4705.22   23.61    2.004  0.30( 0.28) 0.92    2011.0   21300.00
      2     4718.12   23.75    1.997  0.30( 0.28) 0.92    2027.1   30520.00
      3     4787.04   24.63    1.956  0.30( 0.28) 0.92    2120.0   30410.00
      4     4822.52   25.14    1.934  0.30( 0.27) 0.92    2171.3   30540.00
      5     4889.17   26.32    1.884  0.30( 0.27) 0.91    2279.1   30210.00
      6     4905.81   26.46    1.879  0.30( 0.27) 0.91    2299.8   30510.00
      7     4922.18   26.59    1.873  0.30( 0.27) 0.91    2320.3   30200.00
      8     5059.31   27.88    1.824  0.30( 0.27) 0.91    2509.5   30500.00
      9     5122.83   28.51    1.801  0.30( 0.27) 0.91    2599.0   30100.00
     10     5178.45   29.16    1.778  0.30( 0.27) 0.91    2692.7   30400.00
     11     5315.53   30.86    1.722  0.30( 0.27) 0.90    2927.7   30110.00
     12     5461.26   33.88    1.633  0.30( 0.27) 0.89    3327.0   30300.00
     13     5505.81   35.05    1.602  0.30( 0.27) 0.89    3468.7   21400.00
     14     5932.48   48.29    1.336  0.30( 0.26) 0.87    4936.3   13210.00
     15     5940.38   48.80    1.328  0.30( 0.26) 0.87    4988.4   13200.00
     16     5918.08   50.00    1.310  0.30( 0.26) 0.87    5078.1   13100.00
     17     5144.03   74.23    1.048  0.30( 0.26) 0.85    6316.2   13000.00
     18     5027.21   76.56    1.030  0.30( 0.26) 0.85    6336.1   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1       72.95   18.38    2.309  0.30( 0.30) 1.00      40.4   30600.00
  LONGEST FLOWPATH FROM NODE  30600.00 TO NODE  13305.20 =    2948.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
```



```
      1     4382.56   18.38    2.309  0.30( 0.28) 0.92    1605.9   30600.00
      2     4767.09   23.61    2.004  0.30( 0.28) 0.92    2051.3   21300.00
      3     4779.74   23.75    1.997  0.30( 0.28) 0.92    2067.5   30520.00
      4     4847.19   24.63    1.956  0.30( 0.28) 0.92    2160.4   30410.00
      5     4881.85   25.14    1.934  0.30( 0.28) 0.92    2211.6   30540.00
      6     4946.69   26.32    1.884  0.30( 0.27) 0.92    2319.5   30210.00
      7     4963.14   26.46    1.879  0.30( 0.27) 0.92    2340.2   30510.00
      8     4979.31   26.59    1.873  0.30( 0.27) 0.92    2360.7   30200.00
      9     5114.64   27.88    1.824  0.30( 0.27) 0.91    2549.8   30500.00
     10     5177.33   28.51    1.801  0.30( 0.27) 0.91    2639.4   30100.00
     11     5232.12   29.16    1.778  0.30( 0.27) 0.91    2733.0   30400.00
     12     5367.17   30.86    1.722  0.30( 0.27) 0.90    2968.0   30110.00
     13     5509.68   33.88    1.633  0.30( 0.27) 0.89    3367.3   30300.00
     14     5553.10   35.05    1.602  0.30( 0.27) 0.89    3509.0   21400.00
     15     5970.12   48.29    1.336  0.30( 0.26) 0.87    4976.7   13210.00
     16     5977.73   48.80    1.328  0.30( 0.26) 0.87    5028.8   13200.00
     17     5954.77   50.00    1.310  0.30( 0.26) 0.87    5118.4   13100.00
     18     5171.19   74.23    1.048  0.30( 0.26) 0.86    6356.6   13000.00
     19     5053.71   76.56    1.030  0.30( 0.26) 0.85    6376.4   13010.00
   TOTAL AREA(ACRES) =      6376.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     5977.73  Tc(MIN.) =   48.804
  EFFECTIVE AREA(ACRES) =   5028.79  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
  TOTAL AREA(ACRES) =     6376.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.20 =   43204.33 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.20 TO NODE  13305.40 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    284.00  DOWNSTREAM(FEET) =    274.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   826.37   CHANNEL SLOPE =  0.0121
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   6.89
  CHANNEL FLOW THRU SUBAREA(CFS) =    5977.73
  FLOW VELOCITY(FEET/SEC.) =  12.27   FLOW DEPTH(FEET) =   6.89
  TRAVEL TIME(MIN.) =   1.12   Tc(MIN.) =   49.93
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610307Y.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
```

```
 NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
    1      180.81   17.82  0.30( 0.30) 1.00      98.0   30700.00
  TOTAL AREA(ACRES) =       98.0

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.40 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     4382.56   19.61    2.225  0.30( 0.28) 0.92    1605.9   30600.00
     2     4767.09   24.81    1.948  0.30( 0.28) 0.92    2051.3   21300.00
     3     4779.74   24.96    1.942  0.30( 0.28) 0.92    2067.5   30520.00
     4     4847.19   25.83    1.905  0.30( 0.28) 0.92    2160.4   30410.00
     5     4881.85   26.33    1.884  0.30( 0.28) 0.92    2211.6   30540.00
     6     4946.69   27.51    1.838  0.30( 0.27) 0.92    2319.5   30210.00
     7     4963.14   27.65    1.832  0.30( 0.27) 0.92    2340.2   30510.00
     8     4979.31   27.78    1.827  0.30( 0.27) 0.92    2360.7   30200.00
     9     5114.64   29.06    1.782  0.30( 0.27) 0.91    2549.8   30500.00
    10     5177.33   29.68    1.760  0.30( 0.27) 0.91    2639.4   30100.00
    11     5232.12   30.33    1.739  0.30( 0.27) 0.91    2733.0   30400.00
    12     5367.17   32.02    1.686  0.30( 0.27) 0.90    2968.0   30110.00
    13     5509.68   35.03    1.603  0.30( 0.27) 0.89    3367.3   30300.00
    14     5553.10   36.19    1.573  0.30( 0.27) 0.89    3509.0   21400.00
    15     5970.12   49.41    1.319  0.30( 0.26) 0.87    4976.7   13210.00
    16     5977.73   49.93    1.311  0.30( 0.26) 0.87    5028.8   13200.00
    17     5954.77   51.13    1.294  0.30( 0.26) 0.87    5118.4   13100.00
    18     5171.19   75.40    1.038  0.30( 0.26) 0.86    6356.6   13000.00
    19     5053.71   77.74    1.021  0.30( 0.26) 0.85    6376.4   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      180.81   17.82    2.350  0.30( 0.30) 1.00      98.0   30700.00
  LONGEST FLOWPATH FROM NODE  30700.00 TO NODE  13305.40 =    5192.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     4415.76   17.82    2.350  0.30( 0.28) 0.93    1556.6   30700.00
     2     4552.38   19.61    2.225  0.30( 0.28) 0.93    1703.9   30600.00
     3     4912.46   24.81    1.948  0.30( 0.28) 0.92    2149.3   21300.00
     4     4924.56   24.96    1.942  0.30( 0.28) 0.92    2165.5   30520.00
     5     4988.71   25.83    1.905  0.30( 0.28) 0.92    2258.4   30410.00
     6     5021.53   26.33    1.884  0.30( 0.28) 0.92    2309.6   30540.00
     7     5082.32   27.51    1.838  0.30( 0.28) 0.92    2417.5   30210.00
     8     5098.31   27.65    1.832  0.30( 0.28) 0.92    2438.2   30510.00
     9     5114.04   27.78    1.827  0.30( 0.28) 0.92    2458.7   30200.00
    10     5245.33   29.06    1.782  0.30( 0.27) 0.91    2647.8   30500.00
    11     5306.14   29.68    1.760  0.30( 0.27) 0.91    2737.4   30100.00
    12     5359.03   30.33    1.739  0.30( 0.27) 0.91    2831.0   30400.00
    13     5489.44   32.02    1.686  0.30( 0.27) 0.90    3066.0   30110.00
    14     5624.59   35.03    1.603  0.30( 0.27) 0.90    3465.3   30300.00
    15     5665.42   36.19    1.573  0.30( 0.27) 0.90    3607.0   21400.00
```



```
    16     6060.02   49.41    1.319  0.30( 0.26) 0.87    5074.7   13210.00
    17     6066.94   49.93    1.311  0.30( 0.26) 0.87    5126.8   13200.00
    18     6042.44   51.13    1.294  0.30( 0.26) 0.87    5216.4   13100.00
    19     5236.33   75.40    1.038  0.30( 0.26) 0.86    6454.6   13000.00
    20     5117.29   77.74    1.021  0.30( 0.26) 0.86    6474.4   13010.00
  TOTAL AREA(ACRES) =      6474.4

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     6066.94  Tc(MIN.) =   49.927
  EFFECTIVE AREA(ACRES) =   5126.79  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.87
  TOTAL AREA(ACRES) =     6474.4
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.40 =   44030.70 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.40 TO NODE  13305.60 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    274.00  DOWNSTREAM(FEET) =    258.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   733.85   CHANNEL SLOPE =  0.0218
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   5.92
  CHANNEL FLOW THRU SUBAREA(CFS) =    6066.94
  FLOW VELOCITY(FEET/SEC.) =  15.14   FLOW DEPTH(FEET) =   5.92
  TRAVEL TIME(MIN.) =   0.81   Tc(MIN.) =   50.73
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.60 =   44764.55 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 1 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610308Y.DNA
  MEMORY BANK #  1 DEFINED AS FOLLOWS:
   STREAM       Q      Tc      Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.)  (INCH/HR)          (ACRES)    NODE
      1      121.86   17.31  0.30( 0.30) 1.00      64.8   30800.00
    TOTAL AREA(ACRES) =       64.8

****************************************************************************
  FLOW PROCESS FROM NODE  13305.60 TO NODE  13305.60 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)  (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4415.76   18.71    2.286  0.30( 0.28) 0.93    1556.6   30700.00
```

2	4552.38	20.50	2.171	0.30(0.28)	0.93	1703.9	30600.00
3	4912.46	25.68	1.911	0.30(0.28)	0.92	2149.3	21300.00
4	4924.56	25.82	1.905	0.30(0.28)	0.92	2165.5	30520.00
5	4988.71	26.68	1.870	0.30(0.28)	0.92	2258.4	30410.00
6	5021.53	27.19	1.850	0.30(0.28)	0.92	2309.6	30540.00
7	5082.32	28.36	1.806	0.30(0.28)	0.92	2417.5	30210.00
8	5098.31	28.50	1.801	0.30(0.28)	0.92	2438.2	30510.00
9	5114.04	28.63	1.796	0.30(0.28)	0.92	2458.7	30200.00
10	5245.33	29.90	1.753	0.30(0.27)	0.91	2647.8	30500.00
11	5306.14	30.52	1.733	0.30(0.27)	0.91	2737.4	30100.00
12	5359.03	31.17	1.712	0.30(0.27)	0.91	2831.0	30400.00
13	5489.44	32.85	1.662	0.30(0.27)	0.90	3066.0	30110.00
14	5624.59	35.86	1.582	0.30(0.27)	0.90	3465.3	30300.00
15	5665.42	37.02	1.553	0.30(0.27)	0.90	3607.0	21400.00
16	6060.02	50.22	1.307	0.30(0.26)	0.87	5074.7	13210.00
17	6066.94	50.73	1.300	0.30(0.26)	0.87	5126.8	13200.00
18	6042.44	51.93	1.282	0.30(0.26)	0.87	5216.4	13100.00
19	5236.33	76.25	1.032	0.30(0.26)	0.86	6454.6	13000.00
20	5117.29	78.59	1.014	0.30(0.26)	0.86	6474.4	13010.00

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	121.86	17.31	2.389	0.30(0.30)	1.00	64.8	30800.00

LONGEST FLOWPATH FROM NODE 30800.00 TO NODE 13305.60 = 4165.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	4416.43	17.31	2.389	0.30(0.28)	0.93	1504.9	30800.00
2	4531.62	18.71	2.286	0.30(0.28)	0.93	1621.5	30700.00
3	4661.52	20.50	2.171	0.30(0.28)	0.93	1768.7	30600.00
4	5006.44	25.68	1.911	0.30(0.28)	0.93	2214.1	21300.00
5	5018.19	25.82	1.905	0.30(0.28)	0.93	2230.3	30520.00
6	5080.29	26.68	1.870	0.30(0.28)	0.92	2323.2	30410.00
7	5111.95	27.19	1.850	0.30(0.28)	0.92	2374.5	30540.00
8	5170.19	28.36	1.806	0.30(0.28)	0.92	2482.3	30210.00
9	5185.91	28.50	1.801	0.30(0.28)	0.92	2503.0	30510.00
10	5201.36	28.63	1.796	0.30(0.28)	0.92	2523.5	30200.00
11	5330.10	29.90	1.753	0.30(0.27)	0.92	2712.7	30500.00
12	5389.72	30.52	1.733	0.30(0.27)	0.91	2802.2	30100.00
13	5441.42	31.17	1.712	0.30(0.27)	0.91	2895.9	30400.00
14	5568.91	32.85	1.662	0.30(0.27)	0.91	3130.9	30110.00
15	5699.37	35.86	1.582	0.30(0.27)	0.90	3530.1	30300.00
16	5738.55	37.02	1.553	0.30(0.27)	0.90	3671.9	21400.00
17	6118.79	50.22	1.307	0.30(0.26)	0.87	5139.5	13210.00
18	6125.27	50.73	1.300	0.30(0.26)	0.87	5191.6	13200.00
19	6099.77	51.93	1.282	0.30(0.26)	0.87	5281.3	13100.00
20	5279.04	76.25	1.032	0.30(0.26)	0.86	6519.4	13000.00
21	5158.97	78.59	1.014	0.30(0.26)	0.86	6539.3	13010.00

TOTAL AREA(ACRES) = 6539.3

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 6125.27 Tc(MIN.) = 50.734
EFFECTIVE AREA(ACRES) = 5191.62 AREA-AVERAGED Fm(INCH/HR) = 0.26
AREA-AVERAGED Fp(INCH/HR) = 0.30 AREA-AVERAGED Ap = 0.87
TOTAL AREA(ACRES) = 6539.3

LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.60 = 44764.55 FEET.

****
FLOW PROCESS FROM NODE 13305.60 TO NODE 13305.80 IS CODE = 56

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
==========
ELEVATION DATA: UPSTREAM(FEET) = 258.00 DOWNSTREAM(FEET) = 254.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 947.16 CHANNEL SLOPE = 0.0042
GIVEN CHANNEL BASE(FEET) = 50.00 CHANNEL FREEBOARD(FEET) = 0.0
"Z" FACTOR = 3.000 MANNING'S FACTOR = 0.040
*ESTIMATED CHANNEL HEIGHT(FEET) = 9.25
CHANNEL FLOW THRU SUBAREA(CFS) = 6125.27
FLOW VELOCITY(FEET/SEC.) = 8.52 FLOW DEPTH(FEET) = 9.25
TRAVEL TIME(MIN.) = 1.85 Tc(MIN.) = 52.59
LONGEST FLOWPATH FROM NODE 13010.00 TO NODE 13305.80 = 45711.71 FEET.

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
==========

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 15.1

>>>>>DEFINE MEMORY BANK # 1 <<<<<
==========
PEAK FLOWRATE TABLE FILE NAME: 0610309Y.DNA
MEMORY BANK # 1 DEFINED AS FOLLOWS:

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	125.41	16.97	0.30(0.30)	1.00	65.9	30900.00
2	125.27	17.02	0.30(0.30)	1.00	65.9	30910.00

TOTAL AREA(ACRES) = 65.9

****
FLOW PROCESS FROM NODE 13305.80 TO NODE 13305.80 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
==========

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	Q (CFS)	Tc (MIN.)	Intensity (INCH/HR)	Fp(Fm) (INCH/HR)	Ap	Ae (ACRES)	HEADWATER NODE
1	4416.43	19.35	2.243	0.30(0.28)	0.93	1504.9	30800.00
2	4531.62	20.73	2.157	0.30(0.28)	0.93	1621.5	30700.00
3	4661.52	22.50	2.059	0.30(0.28)	0.93	1768.7	30600.00
4	5006.44	27.64	1.833	0.30(0.28)	0.93	2214.1	21300.00
5	5018.19	27.78	1.828	0.30(0.28)	0.93	2230.3	30520.00
6	5080.29	28.64	1.796	0.30(0.28)	0.92	2323.2	30410.00
7	5111.95	29.14	1.779	0.30(0.28)	0.92	2374.5	30540.00
8	5170.19	30.31	1.739	0.30(0.28)	0.92	2482.3	30210.00
9	5185.91	30.44	1.735	0.30(0.28)	0.92	2503.0	30510.00
10	5201.36	30.57	1.731	0.30(0.28)	0.92	2523.5	30200.00
11	5330.10	31.83	1.692	0.30(0.27)	0.92	2712.7	30500.00
12	5389.72	32.45	1.674	0.30(0.27)	0.91	2802.2	30100.00

```
    13     5441.42   33.09    1.655  0.30( 0.27) 0.91    2895.9   30400.00
    14     5568.91   34.76    1.610  0.30( 0.27) 0.91    3130.9   30110.00
    15     5699.37   37.75    1.536  0.30( 0.27) 0.90    3530.1   30300.00
    16     5738.55   38.91    1.510  0.30( 0.27) 0.90    3671.9   21400.00
    17     6118.79   52.07    1.281  0.30( 0.26) 0.87    5139.5   13210.00
    18     6125.27   52.59    1.273  0.30( 0.26) 0.87    5191.6   13200.00
    19     6099.77   53.79    1.257  0.30( 0.26) 0.87    5281.3   13100.00
    20     5279.04   78.18    1.017  0.30( 0.26) 0.86    6519.4   13000.00
    21     5158.97   80.53    1.000  0.30( 0.26) 0.86    6539.3   13010.00
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.80 =   45711.71 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1      125.41   16.97    2.415  0.30( 0.30) 1.00      65.9   30900.00
     2      125.27   17.02    2.412  0.30( 0.30) 1.00      65.9   30910.00
 LONGEST FLOWPATH FROM NODE  30900.00 TO NODE  13305.80 =    3403.00 FEET.

 ** PEAK FLOW RATE TABLE **
  STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
  NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
     1     4339.96   16.97    2.415  0.30( 0.28) 0.93    1386.0   30900.00
     2     4344.17   17.02    2.412  0.30( 0.28) 0.93    1389.8   30910.00
     3     4531.69   19.35    2.243  0.30( 0.28) 0.93    1570.9   30800.00
     4     4641.77   20.73    2.157  0.30( 0.28) 0.93    1687.4   30700.00
     5     4765.87   22.50    2.059  0.30( 0.28) 0.93    1834.6   30600.00
     6     5097.37   27.64    1.833  0.30( 0.28) 0.93    2280.0   21300.00
     7     5108.82   27.78    1.828  0.30( 0.28) 0.93    2296.2   30520.00
     8     5169.06   28.64    1.796  0.30( 0.28) 0.93    2389.1   30410.00
     9     5199.67   29.14    1.779  0.30( 0.28) 0.93    2440.4   30540.00
    10     5255.59   30.31    1.739  0.30( 0.28) 0.92    2548.2   30210.00
    11     5271.05   30.44    1.735  0.30( 0.28) 0.92    2568.9   30510.00
    12     5286.25   30.57    1.731  0.30( 0.28) 0.92    2589.4   30200.00
    13     5412.68   31.83    1.692  0.30( 0.28) 0.92    2778.6   30500.00
    14     5471.21   32.45    1.674  0.30( 0.27) 0.92    2868.1   30100.00
    15     5521.82   33.09    1.655  0.30( 0.27) 0.91    2961.8   30400.00
    16     5646.61   34.76    1.610  0.30( 0.27) 0.91    3196.8   30110.00
    17     5772.71   37.75    1.536  0.30( 0.27) 0.90    3596.0   30300.00
    18     5810.35   38.91    1.510  0.30( 0.27) 0.90    3737.8   21400.00
    19     6176.96   52.07    1.281  0.30( 0.26) 0.88    5205.4   13210.00
    20     6183.02   52.59    1.273  0.30( 0.26) 0.87    5257.5   13200.00
    21     6156.56   53.79    1.257  0.30( 0.26) 0.87    5347.2   13100.00
    22     5321.60   78.18    1.017  0.30( 0.26) 0.86    6585.3   13000.00
    23     5200.53   80.53    1.000  0.30( 0.26) 0.86    6605.2   13010.00
   TOTAL AREA(ACRES) =      6605.2

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     6183.02  Tc(MIN.) =   52.588
 EFFECTIVE AREA(ACRES) =   5257.54  AREA-AVERAGED Fm(INCH/HR) =  0.26
 AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.90
 TOTAL AREA(ACRES) =     6605.2
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13305.80 =   45711.71 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13305.80 TO NODE  13306.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
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============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    254.00  DOWNSTREAM(FEET) =    245.50
 CHANNEL LENGTH THRU SUBAREA(FEET) =   583.12   CHANNEL SLOPE =  0.0146
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   6.70
 *  25 YEAR RAINFALL INTENSITY(INCH/HR) =  1.264
 SUBAREA LOSS RATE DATA(AMC  II):
  DEVELOPMENT TYPE/      SCS SOIL   AREA      Fp         Ap     SCS
      LAND USE            GROUP   (ACRES)  (INCH/HR)  (DECIMAL)  CN
 USER-DEFINED               -       68.77      0.30     0.998     -
 SUBAREA AVERAGE PERVIOUS LOSS RATE, Fp(INCH/HR) =  0.30
 SUBAREA AVERAGE PERVIOUS AREA FRACTION, Ap =  0.998
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    6212.85
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  13.26
 AVERAGE FLOW DEPTH(FEET) =   6.69   TRAVEL TIME(MIN.) =   0.73
 Tc(MIN.) =   53.32
 SUBAREA AREA(ACRES) =    68.77       SUBAREA RUNOFF(CFS) =   59.68
 EFFECTIVE AREA(ACRES) =   5326.31     AREA-AVERAGED Fm(INCH/HR) =   0.26
 AREA-AVERAGED Fp(INCH/HR) =   0.30  AREA-AVERAGED Ap =   0.88
 TOTAL AREA(ACRES) =     6673.9         PEAK FLOW RATE(CFS) =    6183.02
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   6.67

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  6.67   FLOW VELOCITY(FEET/SEC.) =  13.23
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13306.00 =   46294.83 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13306.00 TO NODE  13307.00 IS CODE =  56
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    245.50  DOWNSTREAM(FEET) =    220.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  1543.21   CHANNEL SLOPE =  0.0165
 GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
 "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
 *ESTIMATED CHANNEL HEIGHT(FEET) =   6.45
 CHANNEL FLOW THRU SUBAREA(CFS) =    6183.02
 FLOW VELOCITY(FEET/SEC.) =  13.82   FLOW DEPTH(FEET) =   6.45
 TRAVEL TIME(MIN.) =   1.86   Tc(MIN.) =   55.18
 LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE = 15.1
----------------------------------------------------------------------------
 >>>>>DEFINE MEMORY BANK # 2 <<<<<
============================================================================
 PEAK FLOWRATE TABLE FILE NAME: 0610310Y.DNA
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  MEMORY BANK #  2 DEFINED AS FOLLOWS:
   STREAM        Q      Tc      Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER      (CFS) (MIN.)  (INCH/HR)           (ACRES)     NODE
      1      160.93   21.26  0.30( 0.30) 1.00       97.9   31000.00
    TOTAL AREA(ACRES) =       97.9

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13307.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1     4339.96   19.86    2.210  0.30( 0.28) 0.94    1454.7   30900.00
      2     4344.17   19.90    2.207  0.30( 0.28) 0.94    1458.6   30910.00
      3     4531.69   22.20    2.075  0.30( 0.28) 0.93    1639.6   30800.00
      4     4641.77   23.56    2.006  0.30( 0.28) 0.93    1756.1   30700.00
      5     4765.87   25.31    1.926  0.30( 0.28) 0.93    1903.4   30600.00
      6     5097.37   30.39    1.737  0.30( 0.28) 0.93    2348.8   21300.00
      7     5108.82   30.53    1.733  0.30( 0.28) 0.93    2365.0   30520.00
      8     5169.06   31.38    1.706  0.30( 0.28) 0.93    2457.9   30410.00
      9     5199.67   31.88    1.691  0.30( 0.28) 0.93    2509.2   30540.00
     10     5255.59   33.03    1.657  0.30( 0.28) 0.93    2617.0   30210.00
     11     5271.05   33.16    1.653  0.30( 0.28) 0.93    2637.7   30510.00
     12     5286.25   33.29    1.649  0.30( 0.28) 0.92    2658.2   30200.00
     13     5412.68   34.53    1.616  0.30( 0.28) 0.92    2847.4   30500.00
     14     5471.21   35.14    1.600  0.30( 0.28) 0.92    2936.9   30100.00
     15     5521.82   35.77    1.584  0.30( 0.27) 0.92    3030.5   30400.00
     16     5646.61   37.42    1.544  0.30( 0.27) 0.91    3265.6   30110.00
     17     5772.71   40.40    1.478  0.30( 0.27) 0.90    3664.8   30300.00
     18     5810.35   41.55    1.455  0.30( 0.27) 0.90    3806.5   21400.00
     19     6176.96   54.66    1.246  0.30( 0.26) 0.88    5274.2   13210.00
     20     6183.02   55.18    1.239  0.30( 0.26) 0.88    5326.3   13200.00
     21     6156.56   56.39    1.224  0.30( 0.26) 0.87    5416.0   13100.00
     22     5321.60   80.90    0.998  0.30( 0.26) 0.86    6654.1   13000.00
     23     5200.53   83.27    0.982  0.30( 0.26) 0.86    6673.9   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

  ** MEMORY BANK #  2 CONFLUENCE DATA **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1      160.93   21.26    2.126  0.30( 0.30) 1.00       97.9   31000.00
  LONGEST FLOWPATH FROM NODE  31000.00 TO NODE  13307.00 =    5162.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM        Q      Tc   Intensity   Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER      (CFS)  (MIN.) (INCH/HR) (INCH/HR)           (ACRES)     NODE
      1     4497.15   19.86    2.210  0.30( 0.28) 0.94    1546.1   30900.00
      2     4501.48   19.90    2.207  0.30( 0.28) 0.94    1550.2   30910.00
      3     4616.46   21.26    2.126  0.30( 0.28) 0.94    1664.0   31000.00
      4     4688.13   22.20    2.075  0.30( 0.28) 0.94    1737.5   30800.00
      5     4792.14   23.56    2.006  0.30( 0.28) 0.94    1854.0   30700.00
      6     4909.22   25.31    1.926  0.30( 0.28) 0.94    2001.3   30600.00
      7     5224.04   30.39    1.737  0.30( 0.28) 0.93    2446.7   21300.00
      8     5235.09   30.53    1.733  0.30( 0.28) 0.93    2462.9   30520.00
      9     5292.97   31.38    1.706  0.30( 0.28) 0.93    2555.8   30410.00
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     10     5322.26   31.88    1.691  0.30( 0.28) 0.93    2607.0   30540.00
     11     5375.19   33.03    1.657  0.30( 0.28) 0.93    2714.9   30210.00
     12     5390.33   33.16    1.653  0.30( 0.28) 0.93    2735.6   30510.00
     13     5405.21   33.29    1.649  0.30( 0.28) 0.93    2756.1   30200.00
     14     5528.67   34.53    1.616  0.30( 0.28) 0.92    2945.2   30500.00
     15     5585.80   35.14    1.600  0.30( 0.28) 0.92    3034.8   30100.00
     16     5634.99   35.77    1.584  0.30( 0.28) 0.92    3128.4   30400.00
     17     5756.26   37.42    1.544  0.30( 0.27) 0.91    3363.4   30110.00
     18     5876.59   40.40    1.478  0.30( 0.27) 0.91    3762.7   30300.00
     19     5912.18   41.55    1.455  0.30( 0.27) 0.90    3904.4   21400.00
     20     6260.36   54.66    1.246  0.30( 0.26) 0.88    5372.1   13210.00
     21     6265.83   55.18    1.239  0.30( 0.26) 0.88    5424.2   13200.00
     22     6238.05   56.39    1.224  0.30( 0.26) 0.88    5513.8   13100.00
     23     5383.16   80.90    0.998  0.30( 0.26) 0.86    6752.0   13000.00
     24     5260.67   83.27    0.982  0.30( 0.26) 0.86    6771.8   13010.00
    TOTAL AREA(ACRES) =      6771.8

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     6265.83  Tc(MIN.) =   55.181
  EFFECTIVE AREA(ACRES) =   5424.19  AREA-AVERAGED Fm(INCH/HR) =  0.26
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.88
  TOTAL AREA(ACRES) =     6771.8
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13307.00 =   47838.04 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  56
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    220.00  DOWNSTREAM(FEET) =    215.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   925.62   CHANNEL SLOPE =  0.0054
  GIVEN CHANNEL BASE(FEET) =   50.00   CHANNEL FREEBOARD(FEET) =  0.0
  "Z" FACTOR =   3.000   MANNING'S FACTOR = 0.040
  *ESTIMATED CHANNEL HEIGHT(FEET) =   8.77
  CHANNEL FLOW THRU SUBAREA(CFS) =    6265.83
  FLOW VELOCITY(FEET/SEC.) =   9.36   FLOW DEPTH(FEET) =   8.77
  TRAVEL TIME(MIN.) =   1.65   Tc(MIN.) =   56.83
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 3 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE = 15.1
----------------------------------------------------------------------------
  >>>>>DEFINE MEMORY BANK # 3 <<<<<
============================================================================
  PEAK FLOWRATE TABLE FILE NAME: 0610212Y.DNA
  MEMORY BANK #  3 DEFINED AS FOLLOWS:
   STREAM        Q      Tc      Fp(Fm)      Ap      Ae     HEADWATER
   NUMBER      (CFS) (MIN.)  (INCH/HR)           (ACRES)     NODE
      1      411.81   33.82  0.30( 0.30) 1.00      342.8   21200.00
    TOTAL AREA(ACRES) =      342.8
```

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****************************************************************************
  FLOW PROCESS FROM NODE  13308.00 TO NODE  13308.00 IS CODE =  11
----------------------------------------------------------------------------
  >>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

  ** MAIN STREAM CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4497.15   21.67    2.103  0.30( 0.28) 0.94    1546.1   30900.00
      2     4501.48   21.72    2.101  0.30( 0.28) 0.94    1550.2   30910.00
      3     4616.46   23.07    2.030  0.30( 0.28) 0.94    1664.0   31000.00
      4     4688.13   23.99    1.986  0.30( 0.28) 0.94    1737.5   30800.00
      5     4792.14   25.34    1.925  0.30( 0.28) 0.94    1854.0   30700.00
      6     4909.22   27.08    1.854  0.30( 0.28) 0.94    2001.3   30600.00
      7     5224.04   32.13    1.683  0.30( 0.28) 0.93    2446.7   21300.00
      8     5235.09   32.26    1.679  0.30( 0.28) 0.93    2462.9   30520.00
      9     5292.97   33.11    1.655  0.30( 0.28) 0.93    2555.8   30410.00
     10     5322.26   33.60    1.641  0.30( 0.28) 0.93    2607.0   30540.00
     11     5375.19   34.76    1.610  0.30( 0.28) 0.93    2714.9   30210.00
     12     5390.33   34.89    1.606  0.30( 0.28) 0.93    2735.6   30510.00
     13     5405.21   35.01    1.603  0.30( 0.28) 0.93    2756.1   30200.00
     14     5528.67   36.24    1.572  0.30( 0.28) 0.92    2945.2   30500.00
     15     5585.80   36.84    1.558  0.30( 0.28) 0.92    3034.8   30100.00
     16     5634.99   37.47    1.543  0.30( 0.28) 0.92    3128.4   30400.00
     17     5756.26   39.11    1.506  0.30( 0.27) 0.91    3363.4   30110.00
     18     5876.59   42.08    1.445  0.30( 0.27) 0.91    3762.7   30300.00
     19     5912.18   43.23    1.423  0.30( 0.27) 0.90    3904.4   21400.00
     20     6260.36   56.31    1.225  0.30( 0.26) 0.88    5372.1   13210.00
     21     6265.83   56.83    1.219  0.30( 0.26) 0.88    5424.2   13200.00
     22     6238.05   58.04    1.204  0.30( 0.26) 0.88    5513.8   13100.00
     23     5383.16   82.62    0.986  0.30( 0.26) 0.86    6752.0   13000.00
     24     5260.67   85.00    0.970  0.30( 0.26) 0.86    6771.8   13010.00
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

  ** MEMORY BANK #  3 CONFLUENCE DATA **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1      411.81   33.82    1.635  0.30( 0.30) 1.00     342.8   21200.00
  LONGEST FLOWPATH FROM NODE  21200.00 TO NODE  13308.00 =   11049.00 FEET.

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4853.62   21.67    2.103  0.30( 0.28) 0.95    1765.8   30900.00
      2     4858.20   21.72    2.101  0.30( 0.28) 0.95    1770.3   30910.00
      3     4980.50   23.07    2.030  0.30( 0.28) 0.95    1897.7   31000.00
      4     5056.98   23.99    1.986  0.30( 0.28) 0.95    1980.6   30800.00
      5     5167.76   25.34    1.925  0.30( 0.28) 0.94    2110.9   30700.00
      6     5293.08   27.08    1.854  0.30( 0.28) 0.94    2275.7   30600.00
      7     5629.34   32.13    1.683  0.30( 0.28) 0.94    2772.3   21300.00
      8     5640.93   32.26    1.679  0.30( 0.28) 0.94    2789.8   30520.00
      9     5702.08   33.11    1.655  0.30( 0.28) 0.94    2891.3   30410.00
     10     5733.24   33.60    1.641  0.30( 0.28) 0.94    2947.6   30540.00
     11     5744.14   33.82    1.635  0.30( 0.28) 0.94    2970.4   21200.00
     12     5779.28   34.76    1.610  0.30( 0.28) 0.94    3057.7   30210.00
     13     5793.38   34.89    1.606  0.30( 0.28) 0.94    3078.3   30510.00
     14     5807.25   35.01    1.603  0.30( 0.28) 0.94    3098.9   30200.00
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     15     5921.17   36.24    1.572  0.30( 0.28) 0.93    3288.0   30500.00
     16     5973.78   36.84    1.558  0.30( 0.28) 0.93    3377.6   30100.00
     17     6018.38   37.47    1.543  0.30( 0.28) 0.93    3471.2   30400.00
     18     6128.24   39.11    1.506  0.30( 0.28) 0.92    3706.2   30110.00
     19     6229.76   42.08    1.445  0.30( 0.27) 0.91    4105.5   30300.00
     20     6258.61   43.23    1.423  0.30( 0.27) 0.91    4247.2   21400.00
     21     6545.77   56.31    1.225  0.30( 0.27) 0.89    5714.9   13210.00
     22     6549.29   56.83    1.219  0.30( 0.27) 0.89    5767.0   13200.00
     23     6517.05   58.04    1.204  0.30( 0.27) 0.88    5856.6   13100.00
     24     5594.85   82.62    0.986  0.30( 0.26) 0.87    7094.8   13000.00
     25     5467.50   85.00    0.970  0.30( 0.26) 0.87    7114.6   13010.00
    TOTAL AREA(ACRES) =      7114.6

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     6549.29  Tc(MIN.) =   56.829
  EFFECTIVE AREA(ACRES) =   5766.97  AREA-AVERAGED Fm(INCH/HR) =  0.27
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap =  0.89
  TOTAL AREA(ACRES) =     7114.6
  LONGEST FLOWPATH FROM NODE  13010.00 TO NODE  13308.00 =   48763.66 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE  13307.00 TO NODE  13308.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =     7114.6  TC(MIN.) =     56.83
  EFFECTIVE AREA(ACRES) =   5766.97  AREA-AVERAGED Fm(INCH/HR)=  0.27
  AREA-AVERAGED Fp(INCH/HR) =  0.30  AREA-AVERAGED Ap = 0.885
  PEAK FLOW RATE(CFS)   =    6549.29

  ** PEAK FLOW RATE TABLE **
   STREAM       Q      Tc   Intensity   Fp(Fm)     Ap     Ae     HEADWATER
   NUMBER     (CFS)   (MIN.) (INCH/HR) (INCH/HR)          (ACRES)    NODE
      1     4853.62   21.67    2.103  0.30( 0.28) 0.95    1765.8   30900.00
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      3     4980.50   23.07    2.030  0.30( 0.28) 0.95    1897.7   31000.00
      4     5056.98   23.99    1.986  0.30( 0.28) 0.95    1980.6   30800.00
      5     5167.76   25.34    1.925  0.30( 0.28) 0.94    2110.9   30700.00
      6     5293.08   27.08    1.854  0.30( 0.28) 0.94    2275.7   30600.00
      7     5629.34   32.13    1.683  0.30( 0.28) 0.94    2772.3   21300.00
      8     5640.93   32.26    1.679  0.30( 0.28) 0.94    2789.8   30520.00
      9     5702.08   33.11    1.655  0.30( 0.28) 0.94    2891.3   30410.00
     10     5733.24   33.60    1.641  0.30( 0.28) 0.94    2947.6   30540.00
     11     5744.14   33.82    1.635  0.30( 0.28) 0.94    2970.4   21200.00
     12     5779.28   34.76    1.610  0.30( 0.28) 0.94    3057.7   30210.00
     13     5793.38   34.89    1.606  0.30( 0.28) 0.94    3078.3   30510.00
     14     5807.25   35.01    1.603  0.30( 0.28) 0.94    3098.9   30200.00
     15     5921.17   36.24    1.572  0.30( 0.28) 0.93    3288.0   30500.00
     16     5973.78   36.84    1.558  0.30( 0.28) 0.93    3377.6   30100.00
     17     6018.38   37.47    1.543  0.30( 0.28) 0.93    3471.2   30400.00
```

18	6128.24	39.11	1.506	0.30(0.28)	0.92	3706.2	30110.00
19	6229.76	42.08	1.445	0.30(0.27)	0.91	4105.5	30300.00
20	6258.61	43.23	1.423	0.30(0.27)	0.91	4247.2	21400.00
21	6545.77	56.31	1.225	0.30(0.27)	0.89	5714.9	13210.00
22	6549.29	56.83	1.219	0.30(0.27)	0.89	5767.0	13200.00
23	6517.05	58.04	1.204	0.30(0.27)	0.88	5856.6	13100.00
24	5594.85	82.62	0.986	0.30(0.26)	0.87	7094.8	13000.00
25	5467.50	85.00	0.970	0.30(0.26)	0.87	7114.6	13010.00

END OF RATIONAL METHOD ANALYSIS