TECHNICAL DATA NOTEBOOK

RAINBOW VALLEY ADMP AREAS 1, 2, 3, AND 4 FLOODPLAIN DELINEATION STUDY (FDS)

Study Area 1 (Washes 1S2WS31 (A56), 2S2WS7A (A52), and 2S2WS7B (A51)); Study Area 2 (Wash 1S3WS24A (A60)); Study Area 3 (Washes 1S2WS18A (J27) and 1S2WS18B (J37)); Study Area 4 (Wash 1S2WS31B (I70))

Volume 2 of 2

Contract FCD 2011C003

November 2012

Prepared for:
The Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009
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Project Manager

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Engineer

Technical Data Notebook

RAINBOW VALLEY ADMP AREAS 1, 2, 3, and 4 FLOODPLAIN DELINEATION STUDY (FDS)

Study Area 1 (Washes 1S2WS31 (A56), 2S2WS7A (A52), and 2S2WS7B (A51)) Study Area 2 (Wash 1S3WS24A (A60)) Study Area 3 (Washes 1S2WS18A (J27) and 1S2WS18B (J37)) and Study Area 4 (Wash 1S2WS31B (I70))

CONTRACT FCD 2011C003

Prepared for:
The Flood Control District of Maricopa County
2801 West Durango Street
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(602) 506-1501

Project Manager:
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Engineer:
Nathan Ford, P.E.
November 20, 2012

Registered Professional Engineer (Civil)
CERTIFICATE NO.
40054
NATHAN E.
FORD
Date Signed 11/20/12
ARIZONA, U.S.A.
Nathan Ford
Expires 12/31/12

100-Year 24-Hour Storm HEC-1 Model

(RVADMP ADMP model)

```
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *             JUN  1998                 *
 *            VERSION 4.1                *
 *                                       *
 *  RUN DATE   05OCT12  TIME  13:46:03   *
 *                                       *
*****************************************
```

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

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

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

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

```
1                                          HEC-1 INPUT                                                    PAGE  1

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

   1          ID   FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
   2          ID   WATERMAN WASH - Contract # FCD 2006C029
   3          ID
   4          ID   Prepared by:
   5          ID   URS Corporation
   6          ID   7720 N. 16th Street, Suite 100
   7          ID   Phoenix, Arizona   85020
   8          ID
   9          ID   01/09/09  Filename:  With Railroad.IH1
  10          ID            Last Revised: 06/01/11
  11          ID
  12          ID   1. The following model is modeled with the Union Pacific railroad
  13          ID      embankment located adjacent to SR-238.
  14          ID   2. The storm used was 100-year, 24-hour.
  15          ID   3. S-graph was the unit hydrograph.
  16          ID   4. Time step of 10 minutes.
  17          ID   5. A point rainfall of 3.4 inches from NOAA 14 with Maricopa County Areal
  18          ID      reduction.
  19          ID   6. Green-Ampt loss methods were used. Normal depth Channel routing.
  20          ID   7. The sub-basin parameters were generated using FCDMC's DDMSW software.
  21          ID   8. The contributing area was calculated by estimating the amount of flow
  22          ID      in each routing reach.
              *DIAGRAM
  23          IT      10                    300
  24          IO       5
  25          IN      15
              *
  26          JD   3.438  0.0001
  27          PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
  28          PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
  29          PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
  30          PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
  31          PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
  32          PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
  33          PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
  34          PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
  35          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
  36          PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
  37          JD   3.266    10.0
  38          JD   3.094    30.0
  39          JD   2.991    60.0
  40          JD   2.929    90.0
              * ******************************************************************************
              *
              * ******************************************************************************

  41          KK     C04
  42          KM     URS 2009
  43          KM    Customized XKSAT Values
  44          BA   0.234
  45          LG    0.35    0.35    2.88    0.99       0
  46          UI       0     492     309      79      21       0       0       0       0       0
  47          UI       0       0       0       0       0       0       0       0       0       0
  48          UI       0       0       0       0       0       0       0       0       0       0
  49          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                    PAGE  2

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

  50          KK  RCPC04
  51          KM        Route flow from CP C04 to CP C12
  52          KM    This is in the 10-foot contour area, used the EEC route.
  53          RS       4    FLOW      -1
  54          RC   0.050   0.045   0.050    7890  0.0232
  55          RX       0      85     170     175     180     190     280     375
  56          RY    1667    1666    1665    1663    1663    1665    1666    1667
```

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                 *

  57             KK     C12   BASIN
  58             KM    Customized XKSAT Values
  59             KM     URS 2009
  60             BA   0.201
  61             LG    0.35    0.35    3.09    0.85       0
  62             UI       0     139     397     193      39       0       0       0       0       0
  63             UI       0       0       0       0       0       0       0       0       0       0
  64             UI       0       0       0       0       0       0       0       0       0       0
  65             UI       0       0       0       0       0       0       0       0       0       0
  66             UI       0       0       0       0       0       0       0       0       0       0
                 *

  67             KK   CPC12
  68             KM        Combine C04 with C12
  69             HC       2   0.435
                 *

  70             KK    DC12
  71             KM      Divert flow into C31
  72             KM        Natural divergence of flow due to a braided channel network.
  73             DT   DVC12
  74             DI       0      39     144     291     788    1940    3606    5426    7538
  75             DQ       0      20      72     150     391     941    1739    2610    3620
                 *

  76             KK  RCPC12
  77             KM        Route remainder flow from CP C12 to CP C13
  78             KM    This is in the 10-foot contour area, used the EEC route.
  79             RS       2    FLOW      -1
  80             RC   0.050   0.045   0.050    5110  0.0119
  81             RX       0      80     130     135     155     160     230     280
  82             RY    1529    1528    1527    1525    1525    1527    1528    1529
                 *

  83             KK     C13   BASIN
  84             KM     URS 2009
  85             KM    Customized XKSAT Values
  86             BA   0.520
  87             LG    0.35    0.35    3.21    0.78       0
  88             UI       0     170     498     763     394     125      39      23       0       0
  89             UI       0       0       0       0       0       0       0       0       0       0
  90             UI       0       0       0       0       0       0       0       0       0       0
  91             UI       0       0       0       0       0       0       0       0       0       0
  92             UI       0       0       0       0       0       0       0       0       0       0
                 *
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 LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  93             KM    URS 2009

  94             KK   CPC13
  95             KM        Combine C12 with C13
  96             HC       2   0.733
                 *

  97             KK    DC13
  98             KM    URS 2009
  99             KM    Divert flow into C33A
 100             KM        Flow is split between what passes through/over the structure and
 101             KM        what is diverted parallel to the railroad.
 102             KM    UPRR Structure 1 - MP875.2 (18' Bridge)
 103             DT   DVC13
 104             DI       0      22     103     204     345     513     950    1875
 105             DQ       0      22     103     204     301     389     468     541
                 *

 106             KK  RCPC13
 107             KM    This is in the 10-foot contour area, used the EEC route.
 108             KM        Route remainder flow from CP C13 to CP C31
 109             RS       1    FLOW      -1
 110             RC   0.050   0.045   0.050     630  0.0045
 111             RX       0      20      30     230     430     630     830    1030
 112             RY    1513    1513    1506  1508.8  1511.6  1514.4  1517.2    1520
                 *

 113             KK     C11   BASIN
 114             KM     URS 2009
 115             KM    Customized XKSAT Values
 116             BA   0.289
 117             LG    0.35    0.35    3.11    0.84       0
 118             UI       0     113     343     417     174      52      14       0       0       0
 119             UI       0       0       0       0       0       0       0       0       0       0
 120             UI       0       0       0       0       0       0       0       0       0       0
 121             UI       0       0       0       0       0       0       0       0       0       0
 122             UI       0       0       0       0       0       0       0       0       0       0
                 *

 123             KK    DC11
 124             KM      Divert flow into C14
 125             KM        Natural divergence of flow due to a braided channel network.
 126             DT   DVC11
 127             DI       0      22      92     211     667    1801    3293    5031    7054
 128             DQ       0       9      38      96     330     943    1686    2597    3659
                 *

 129             KK  RCPC11
 130             KM        Route remainder flow from CP C11 to CP C31
 131             KM    This is in the 10-foot contour area, used the EEC route.
 132             RS       4    FLOW      -1
 133             RC   0.050   0.045   0.050    4490  0.0116
 134             RX       0     100     190     195     205     210     300     420
 135             RY    1537    1536    1535    1534    1534    1535    1536    1537
                 *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 136          KK   DRC12
 137          KM        Return diverted flow from CP C12
 138          DR   DVC12
              *

 139          KK   RDC12
 140          KM        Route flow from CP C12 to CP C31
 141          KM    This is in the 10-foot contour area, used the EEC route.
 142          RS       4    FLOW      -1
 143          RC   0.050   0.045   0.050    5320  0.0118
 144          RX       0     100     190     195     205     210     300     420
 145          RY    1537    1536    1535    1534    1534    1535    1536    1537
              *

 146          KK     C31   BASIN
 147          KM     URS 2009
 148          KM    Customized XKSAT Values
 149          BA   0.101
 150          LG    0.35    0.35    3.15    0.82       0
 151          UI       0      79     211      83      14       0       0       0       0       0
 152          UI       0       0       0       0       0       0       0       0       0       0
 153          UI       0       0       0       0       0       0       0       0       0       0
 154          UI       0       0       0       0       0       0       0       0       0       0
 155          UI       0       0       0       0       0       0       0       0       0       0
              *

 156          KK   CPC31
 157          KM    URS 2009
 158          KM        Combine C11, DRC12, RCP13, with C31
 159          HC       4   0.651
              *

 160          KK    DC31
 161          KM    URS 2009
 162          KM    Divert flow into C33A
 163          KM        Flow is split between what passes through/over the structure and
 164          KM        what is diverted parallel to the railroad.
 165          KM    UPRR Structure 2 - MP875.32 (2-36" CMP's)
 166          DT   DVC31
 167          DI       0       2      19      76     221     434     658    1096
 168          DQ       0       2      19      48      81     109     132     172
              *

 169          KK  RCPC31
 170          KM    This is in the 10-foot contour area, used the EEC route.
 171          KM        Route remainder flow from CP C31 to CP C14
 172          RS       1    FLOW      -1
 173          RC   0.050   0.045   0.050     690  0.0041
 174          RX       0      20      30     230     430     630     830    1030
 175          RY    1510    1510    1504  1506.8  1509.6  1512.4  1515.2    1518
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 176          KK   DRC11
 177          KM        Return diverted flow from CP C11
 178          DR   DVC11
              *

 179          KK   RDC11
 180          KM    This is in the 10-foot contour area, used the EEC route.
 181          KM        Route flow from CP C11 to CP C14
 182          RS       7    FLOW      -1
 183          RC   0.050   0.045   0.050    4960  0.0103
 184          RX       0      90     210     215     230     235     350     430
 185          RY    1537    1536    1536    1535    1535    1536    1536    1537
              *

 186          KK     C14   BASIN
 187          KM     URS 2009
 188          KM    Customized XKSAT Values
 189          BA   0.224
 190          LG    0.35    0.35    3.15    0.82       0
 191          UI       0     107     340     290      97      22       0       0       0       0
 192          UI       0       0       0       0       0       0       0       0       0       0
 193          UI       0       0       0       0       0       0       0       0       0       0
 194          UI       0       0       0       0       0       0       0       0       0       0
 195          UI       0       0       0       0       0       0       0       0       0       0
              *

 196          KK   CPC14
 197          KM    URS 2009
 198          KM        Combine DRC11, C14, RCPC31
 199          HC       3   0.771
              *

 200          KK    DC14
 201          KM    URS 2009
 202          KM    Divert flow into C33A
 203          KM        Flow is split between what passes through/over the structure and
 204          KM        what is diverted parallel to the railroad.
 205          KM    UPRR Structure 3 - MP875.44 (10' Bridge)
 206          DT   DVC14
 207          DI       0      15      57     113     215     356     456    1050
 208          DQ       0      15      57     113     180     233     280     324
              *

 209          KK  RCPC14
 210          KM    This is in the 10-foot contour area, used the EEC route.
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```
 211          KM        Route remainder flow from CP C14 to CP C10
 212          RS       1    FLOW      -1
 213          RC   0.050   0.045   0.050    1310  0.0039
 214          RX       0      20      30     210     390     570     750     930
 215          RY    1506    1506    1500  1502.6  1505.2  1507.8  1510.4    1513
              *
1                                        HEC-1 INPUT                                                          PAGE  6

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

 216          KK     C05   BASIN
 217          KM     URS 2009
 218          KM    Customized XKSAT Values
 219          BA   0.228
 220          LG    0.35    0.35    2.95    0.93       0
 221          UI       0     432     412      38       0       0       0       0       0       0
 222          UI       0       0       0       0       0       0       0       0       0       0
 223          UI       0       0       0       0       0       0       0       0       0       0
 224          UI       0       0       0       0       0       0       0       0       0       0
              *

 225          KK  RCPC05
 226          KM        Route flow from CP C05 to CP C10
 227          KM    This is in the 10-foot contour area, used the EEC route.
 228          RS       6    FLOW      -1
 229          RC   0.050   0.045   0.050   13200  0.0153
 230          RX       0      60     120     135     150     165     250     320
 231          RY    1616    1615    1615    1613    1613    1615    1615    1616
              *

 232          KK     C03   BASIN
 233          KM     URS 2009
 234          KM    Customized XKSAT Values
 235          BA   0.295
 236          LG    0.35    0.35    2.94    0.95       0
 237          UI       0     277     651     184      27       0       0       0       0       0
 238          UI       0       0       0       0       0       0       0       0       0       0
 239          UI       0       0       0       0       0       0       0       0       0       0
 240          UI       0       0       0       0       0       0       0       0       0       0
              *

 241          KK    DC03
 242          KM      Divert flow into C06
 243          KM        Natural divergence of flow due to a braided channel network.
 244          DT   DVC03
 245          DI       0      43     176     373    1014    2415    4457    6668    9228
 246          DQ       0      25      98     201     545    1265    2332    3481    4810
              *

 247          KK  RCPC03
 248          KM    This is in the 10-foot contour area, used the EEC route.
 249          KM        Route remainder flow from CP C03 to CP C09
 250          RS       2    FLOW      -1
 251          RC   0.050   0.045   0.050    6060  0.0167
 252          RX       0      90     210     220     230     240     350     450
 253          RY    1615    1614    1614    1612    1612    1614    1614    1615
              *

 254          KK     C09   BASIN
 255          KM     URS 2009
 256          KM    Customized XKSAT Values
 257          BA   0.138
 258          LG    0.35    0.35    3.13    0.83       0
 259          UI       0      81     248     157      38       8       0       0       0       0
1                                        HEC-1 INPUT                                                          PAGE  7

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

 260          UI       0       0       0       0       0       0       0       0       0       0
 261          UI       0       0       0       0       0       0       0       0       0       0
 262          UI       0       0       0       0       0       0       0       0       0       0
 263          UI       0       0       0       0       0       0       0       0       0       0
              *

 264          KK   CPC09
 265          KM        Combine C03 with C09
 266          HC       2   0.433
              *

 267          KK    DC09
 268          KM      Divert flow into C16
 269          KM        Natural divergence of flow due to a braided channel network.
 270          DT   DVC09
 271          DI       0      31     111     249     519    1155    2695    4796    7315    9984
 272          DQ       0      15      52     115     227     540    1299    2444    3606    4952
              *

 273          KK  RCPC09
 274          KM        Route remainder flow from CP C09 to CP C15
 275          KM    This is in the 10-foot contour area, used the EEC route.
 276          RS       2    FLOW      -1
 277          RC   0.050   0.045   0.050    3650  0.0139
 278          RX       0      40     120     130     155     165     245     300
 279          RY    1553    1552    1552    1550    1550    1552    1552    1553
              *

 280          KK     C15   BASIN
 281          KM     URS 2009
 282          BA   0.095
 283          LG    0.35    0.35    4.20    0.42       0
 284          UI       0      85     208      64      10       0       0       0       0       0
 285          UI       0       0       0       0       0       0       0       0       0       0
 286          UI       0       0       0       0       0       0       0       0       0       0
 287          UI       0       0       0       0       0       0       0       0       0       0
 288          UI       0       0       0       0       0       0       0       0       0       0
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                 *

289              KK   CPC15
290              KM        Combine C09 with C15
291              HC       2   0.241
                 *

292              KK    DC15
293              KM      Divert flow into C30
294              KM        Natural divergence of flow due to a braided channel network.
295              DT   DVC15
296              DI       0      22      83     202     409     591    1269    2894    5081    7600
297              DQ       0      22      83     191     355     456     852    1738    3056    4514
                 *
1                                                HEC-1 INPUT                                          PAGE  8

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

298              KK  RCPC15
299              KM        Route remainder flow from CP C15 to CP C10
300              KM    This is in the 10-foot contour area, used the EEC route.
301              RS       4    FLOW      -1
302              RC   0.050   0.045   0.050    3210  0.0095
303              RX       0      50     150     160     170     180     280     350
304              RY    1617    1616    1616    1614    1614    1616    1616    1617
                 *

305              KK     C10   BASIN
306              KM     URS 2009
307              KM    Customized XKSAT Values
308              BA   0.548
309              LG    0.35    0.35    3.19    0.79       0
310              UI       0     118     361     667     521     284      99      39      20       0
311              UI       0       0       0       0       0       0       0       0       0       0
312              UI       0       0       0       0       0       0       0       0       0       0
313              UI       0       0       0       0       0       0       0       0       0       0
314              UI       0       0       0       0       0       0       0       0       0       0
                 *

315              KK   CPC10
316              KM    URS 2009
317              KM        Combine C05, C15, RCPC14 with C10
318              HC       4   0.999
                 *

319              KK    DC10
320              KM    URS 2009
321              KM    Divert flow into C33A
322              KM        Flow is split between what passes through/over the structure and
323              KM        what is diverted parallel to the railroad.
324              KM    UPRR Structure 4 - MP875.69 (2-36" CMP's)
325              DT   DVC10
326              DI       0       8      23      52     142     271     834    1467
327              DQ       0       8      23      35      44      52      66     179
                 *

328              KK  RCPC10
329              KM    This is in the 10-foot contour area, used the EEC route.
330              KM        Route remainder flow from CP C10 to CP C30
331              RS       2    FLOW      -1
332              RC   0.050   0.045   0.050    2070  0.0039
333              RX       0      20      30     180     330     480     630     780
334              RY    1500    1500    1493  1495.4  1497.8  1500.2  1502.6    1505
                 *

335              KK   DRC03
336              KM        Return diverted flow from CP C03
337              DR   DVC03
                 *
1                                                HEC-1 INPUT                                          PAGE  9

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

338              KK   RDC03
339              KM        Route flow from CP C03 to CP C06
340              KM    This is in the 10-foot contour area, used the EEC route.
341              RS       3    FLOW      -1
342              RC   0.050   0.045   0.050    6650  0.0161
343              RX       0      55     150     160     180     190     300     350
344              RY    1629    1628    1628    1626    1626    1628    1628    1629
                 *

345              KK     C06   BASIN
346              KM    Customized XKSAT Values
347              KM     URS 2009
348              BA   0.349
349              LG    0.35    0.35    3.19    0.79       0
350              UI       0     164     519     458     158      37       0       0       0       0
351              UI       0       0       0       0       0       0       0       0       0       0
352              UI       0       0       0       0       0       0       0       0       0       0
353              UI       0       0       0       0       0       0       0       0       0       0
                 *

354              KK   CPC06
355              KM        Combine DRC03 with C06
356              HC       2   0.511
                 *

357              KK    DC06
358              KM      Divert flow into C18
359              KM        Natural divergence of flow due to a braided channel network.
360              DT   DVC06
361              DI       0      16      68     167     324     409     941    2213    4100    6021
362              DQ       0       8      34      83     162     204     470    1106    2050    3010
```

```
                 *

363              KK  RCPC06
364              KM        Route remainder flow from CP C06 to CP C16
365              KM    This is in the 10-foot contour area, used the EEC route.
366              RS       1    FLOW      -1
367              RC   0.050   0.045   0.050    1800  0.0127
368              RX       0     120     240     250     270     280     400     500
369              RY    1568    1567    1567    1564    1564    1567    1567    1568
                 *

370              KK   DRC09
371              KM        Return diverted flow from CP C09
372              DR   DVC09
                 *

373              KK   RDC09
374              KM    This is in the 10-foot contour area, used the EEC route.
375              KM        Route flow from CP C09 to CP C16
376              RS       1    FLOW      -1
377              RC   0.050   0.045   0.050    2380  0.0132
378              RX       0     120     240     250     270     280     400     500
379              RY    1568    1567    1567    1564    1564    1567    1567    1568
                 *
1                                          HEC-1 INPUT                                                    PAGE 10

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

380              KK     C16   BASIN
381              KM     URS 2009
382              KM    Customized XKSAT Values
383              BA   0.127
384              LG    0.35    0.35    3.23    0.77       0
385              UI       0      78     235     139      31       8       0       0       0       0
386              UI       0       0       0       0       0       0       0       0       0       0
387              UI       0       0       0       0       0       0       0       0       0       0
388              UI       0       0       0       0       0       0       0       0       0       0
389              UI       0       0       0       0       0       0       0       0       0       0
                 *

390              KK   CPC16
391              KM        Combine C06, DRC09 with C16
392              HC       3   0.508
                 *

393              KK  RCPC16
394              KM    This is in the 10-foot contour area, used the EEC route.
395              KM        Route flow from CP C16 to CP C30
396              RS       5    FLOW      -1
397              RC   0.050   0.045   0.050    5730  0.0106
398              RX       0      70     200     210     225     235     360     450
399              RY    1517    1516    1516    1514    1514    1516    1516    1517
                 *

400              KK   DRC06
401              KM        Return diverted flow from CP C06
402              DR   DVC06
                 *

403              KK   RDC06
404              KM    This is in the 10-foot contour area, used the EEC route.
405              KM        Route flow from CP C06 to CP C18
406              RS       1    FLOW      -1
407              RC   0.050   0.045   0.050    2640  0.0117
408              RX       0     200     240     247     272     280     330     450
409              RY    1597    1596    1595    1593    1593    1595    1596    1597
                 *

410              KK     C18   BASIN
411              KM     URS 2009
412              BA   0.078
413              LG    0.35    0.35    4.00    0.46       0
414              UI       0     169     124       0       0       0       0       0       0       0
415              UI       0       0       0       0       0       0       0       0       0       0
416              UI       0       0       0       0       0       0       0       0       0       0
417              UI       0       0       0       0       0       0       0       0       0       0
418              UI       0       0       0       0       0       0       0       0       0       0
                 *
1                                          HEC-1 INPUT                                                    PAGE 11

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

419              KK   CPC18
420              KM        Combine DRC06 with C18
421              HC       2   0.334
                 *

422              KK    DC18
423              KM      Divert flow into C19
424              KM        Natural divergence of flow due to a braided channel network.
425              DT   DVC18
426              DI       0      69     169     349     503    1348    3477    6348    9552
427              DQ       0       0      18      79     205     641    1775    3142    4817
                 *

428              KK  RCPC18
429              KM    This is in the 10-foot contour area, used the EEC route.
430              KM        Route remainder flow from CP C18 to CP C17
431              RS       1    FLOW      -1
432              RC   0.050   0.045   0.050    2210  0.0103
433              RX       0      60     170     180     200     210     300     350
434              RY    1527    1526    1526    1524    1524    1526    1526    1527
                 *
```

```
435          KK     C17   BASIN
436          KM     URS 2009
437          KM    Customized XKSAT Values
438          BA   0.121
439          LG    0.35     0.35     3.48     0.64        0
440          UI       0      142      273       47        0        0        0        0        0        0
441          UI       0        0        0        0        0        0        0        0        0        0
442          UI       0        0        0        0        0        0        0        0        0        0
443          UI       0        0        0        0        0        0        0        0        0        0
444          UI       0        0        0        0        0        0        0        0        0        0
             *

445          KK   CPC17
446          KM        Combine C18 with C17
447          HC       2   0.424
             *

448          KK    DC17
449          KM      Divert flow into C29
450          KM        Natural divergence of flow due to a braided channel network.
451          DT   DVC17
452          DI       0       23       83      189      360      459     1038     2490     4238     6610
453          DQ       0       23       83      181      324      369      727     1601     2650     4163
             *

454          KK  RCPC17
455          KM        Route remainder flow from CP C17 to CP C30
456          KM    This is in the 10-foot contour area, used the EEC route.
457          RS       2    FLOW      -1
458          RC   0.050   0.045   0.050     2920  0.0106
459          RX       0       40      120      150      160      170      250      300
460          RY    1510     1509     1509     1506     1506     1509     1509     1510
             *
```



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

461          KK   DRC15
462          KM        Return diverted flow from CP C15
463          DR   DVC15
             *

464          KK   RDC15
465          KM    This is in the 10-foot contour area, used the EEC route.
466          KM        Route flow from CP C15 to CP C30
467          RS       2    FLOW      -1
468          RC   0.050   0.045   0.050     4430  0.0092
469          RX       0       70      200      210      225      235      360      450
470          RY    1517     1516     1516     1514     1514     1516     1516     1517
             *

471          KK     C30   BASIN
472          KM     URS 2009
473          BA   0.235
474          LG    0.35     0.35     4.20     0.42        0
475          UI       0      188      495      188       31        0        0        0        0        0
476          UI       0        0        0        0        0        0        0        0        0        0
477          UI       0        0        0        0        0        0        0        0        0        0
478          UI       0        0        0        0        0        0        0        0        0        0
479          UI       0        0        0        0        0        0        0        0        0        0
             *

480          KK   CPC30
481          KM    URS 2009
482          KM        Combine C16, C17, DRC15, RCPC10 with C30
483          HC       5   1.991
             *

484          KK    DC30
485          KM    URS 2009
486          KM    Divert flow into C33A
487          KM        Flow is split between what passes through/over the structure and
488          KM        what is diverted parallel to the railroad.
489          KM    UPRR Structure 5 - MP876.09 (3-48" SSP's)
490          DT   DVC30
491          DI       0       38       83      151      252      401      644     1464
492          DQ       0       38       83      151      230      312      381      792
             *

493          KK  RCPC30
494          KM    This is in the 10-foot contour area, used the EEC route.
495          KM        Route remainder flow from CP C30 to CP C29
496          RS       2    FLOW      -1
497          RC   0.050   0.045   0.050     2920  0.0050
498          RX       0       20       30      170      310      450      590      730
499          RY    1488     1488     1483   1485.4   1487.8   1490.2   1492.6     1495
             *
```



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

500          KK     C02   BASIN
501          KM     URS 2009
502          KM    Customized XKSAT Values
503          BA   0.129
504          LG    0.35     0.35     2.91     0.97        0
505          UI       0      310      180        0        0        0        0        0        0        0
506          UI       0        0        0        0        0        0        0        0        0        0
507          UI       0        0        0        0        0        0        0        0        0        0
508          UI       0        0        0        0        0        0        0        0        0        0
             *

509          KK  RCPC02
510          KM        Route flow from CP C02 to CP C07
```

```
 511          KM    This is in the 10-foot contour area, used the EEC route.
 512          RS       5    FLOW      -1
 513          RC   0.050   0.045   0.050   11040  0.0220
 514          RX       0     200     250     265     285     300     350     550
 515          RY    1628    1627    1626    1624    1624    1626    1627    1628
              *

 516          KK     C01   BASIN
 517          KM     URS 2009
 518          KM    Customized XKSAT Values
 519          BA   0.450
 520          LG    0.35    0.35    2.89    0.98       0
 521          UI       0     860     628     186      49       0       0       0       0       0
 522          UI       0       0       0       0       0       0       0       0       0       0
 523          UI       0       0       0       0       0       0       0       0       0       0
 524          UI       0       0       0       0       0       0       0       0       0       0
              *

 525          KK  RCPC01
 526          KM        Route flow from CP C01 to CP C07
 527          KM    This is in the 10-foot contour area, used the EEC route.
 528          RS       5    FLOW      -1
 529          RC   0.050   0.045   0.050   12650  0.0210
 530          RX       0     200     270     280     300     310     380     580
 531          RY    1619    1618    1617    1615    1615    1617    1618    1619
              *

 532          KK     C08   BASIN
 533          KM     URS 2009
 534          KM    Customized XKSAT Values
 535          BA   0.873
 536          LG    0.35    0.35    3.13    0.83       0
 537          UI       0     248     729    1236     732     281      97      35       0       0
 538          UI       0       0       0       0       0       0       0       0       0       0
 539          UI       0       0       0       0       0       0       0       0       0       0
 540          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

 541          KK  RCPC08
 542          KM        Route flow from CP C08 to CP C07
 543          KM    This is in the 10-foot contour area, used the EEC route.
 544          RS       1    FLOW      -1
 545          RC   0.050   0.045   0.050    3060  0.0099
 546          RX       0     300     514     530     570     590     612     806
 547          RY    1573    1570    1569    1566    1566    1569    1570    1580
              *

 548          KK     C07   BASIN
 549          KM     URS 2009
 550          KM    Customized XKSAT Values
 551          BA   1.183
 552          LG    0.35    0.35    3.07    0.86       0
 553          UI       0     422    1253    1738     814     245      65       0       0       0
 554          UI       0       0       0       0       0       0       0       0       0       0
 555          UI       0       0       0       0       0       0       0       0       0       0
 556          UI       0       0       0       0       0       0       0       0       0       0
              *

 557          KK   CPC07
 558          KM        Combine C02, C01, C08 with C07
 559          HC       4   2.411
              *

 560          KK    DC07
 561          KM      Divert flow into C20
 562          KM        Natural divergence of flow due to a braided channel network.
 563          DT   DVC07
 564          DI       0      88     310     730    1418    1808    4633   11215
 565          DQ       0      23      79     209     453     669    2050    5243
              *

 566          KK  RCPC07
 567          KM    This is in the 10-foot contour area, used the EEC route.
 568          KM        Route remainder flow from CP C07 to CP C19
 569          RS       1    FLOW      -1
 570          RC   0.050   0.045   0.050    3830  0.0106
 571          RX       0       8      60      70      85      95     135     143
 572          RY    1558  1556.5    1555    1553    1553    1555  1556.5    1558
              *

 573          KK   DRC18
 574          KM        Return diverted flow from CP C18
 575          DR   DVC18
              *

 576          KK   RDC18
 577          KM    This is in the 10-foot contour area, used the EEC route.
 578          KM        Route flow from CP C18 to CP C19
 579          RS       2    FLOW      -1
 580          RC   0.050   0.045   0.050    3080  0.0130
 581          RX       0     100     210     220     245     255     320     450
 582          RY    1528    1527    1526    1523    1523    1526    1527    1528
              *
```



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

 583          KK     C19   BASIN
 584          KM     URS 2009
 585          KM    Customized XKSAT Values
 586          BA   0.257
```

```
LG    0.35    0.35    3.60    0.58       0
UI       0     222     555     183      28       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK   CPC19
KM        Combine C07, DRC18 with C19
HC       3    2.08
*

KK    DC19
KM      Divert flow into C27
KM        Natural divergence of flow due to a braided channel network.
DT   DVC19
DI       0      35     126     336     751    1155    2993    7167   12787
DQ       0      24      84     211     432     595    1357    3021    5467
*

KK  RCPC19
KM        Route remainder flow from CP C19 to CP C29
KM    This is in the 10-foot contour area, used the EEC route.
RS       3    FLOW      -1
RC   0.050   0.045   0.050    3370  0.0091
RX       0      50     250     260     275     285     400     450
RY    1497    1496    1496    1494    1494    1496    1496    1497
*

KK   DRC17
KM        Return diverted flow from CP C17
DR   DVC17
*

KK   RDC17
KM        Route flow from CP C17 to CP C29
KM    This is in the 10-foot contour area, used the EEC route.
RS       4    FLOW      -1
RC   0.050   0.045   0.050    4890  0.0083
RX       0     100     195     200     210     215     260     335
RY    1512    1511    1510    1508    1508    1510    1511    1512
*

KK     C29   BASIN
KM     URS 2009
KM    Customized XKSAT Values
BA   0.339
LG    0.35    0.35    3.92    0.48       0
UI       0     226     656     340      70       0       0       0       0       0
```



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

UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK   CPC29
KM    URS 2009
KM        Combine C19, DRC17, RCPC30 with C29
HC       4   3.954
*

KK    DC29
KM    URS 2009
KM    Divert flow into C33B
KM        Flow is split between what passes through/over the structure and
KM        what is diverted parallel to the railroad.
KM    UPRR Structure 6 - MP876.64 (3-48" SSP's)
DT   DVC29
DI       0      38     133     351     656    1040    1202    2870
DQ       0      27      59     122     198     280     349     585
*

KK  RCPC29
KM    This is in the 10-foot contour area, used the EEC route.
KM        Route remainder flow from CP C29 to CP C28
RS       1    FLOW      -1
RC   0.050   0.045   0.050     520  0.0052
RX       0      20      30     130     230     330     430     530
RY    1480    1480    1475  1477.0  1479.0  1481.0  1483.0    1485
*

KK     C28   BASIN
KM     URS 2009
BA   0.050
LG    0.35    0.35    4.65    0.32       0
UI       0     158      35       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK   CPC28
KM    URS 2009
KM        Combine C28 AND RCPC29
HC       2   2.778
*

KK    DC28
KM    URS 2009
KM    Divert flow into C33B
```

```
 665          KM        Flow is split between what passes through/over the structure and
 666          KM        what is diverted parallel to the railroad.
 667          KM    UPRR Structure 7 - MP876.78 (3-60" SSP's)
1                                          HEC-1 INPUT                                                    PAGE 17

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

 668          DT   DVC28
 669          DI       0      29      73     245     523     888    1331    1356    3369
 670          DQ       0      29      68     143     237     344     458     570    1200
              *

 671          KK  RCPC28
 672          KM    This is in the 10-foot contour area, used the EEC route.
 673          KM        Route remainder flow from CP C28 to CP C27
 674          RS       1    FLOW      -1
 675          RC   0.050   0.045   0.050    1940  0.0050
 676          RX       0      20      30     110     190     270     350     430
 677          RY    1474    1474    1467  1468.6  1470.2  1471.8  1473.4    1475
              *

 678          KK   DRC19
 679          KM        Return diverted flow from CP C19
 680          DR   DVC19
              *

 681          KK   RDC19
 682          KM        Route flow from CP C19 to CP C27
 683          KM    This is in the 10-foot contour area, used the EEC route.
 684          RS       2    FLOW      -1
 685          RC   0.050   0.045   0.050    5130  0.0081
 686          RX       0     100     220     240     270     290     390     480
 687          RY    1499    1498    1497    1494    1494    1497    1498    1499
              *

 688          KK     C27   BASIN
 689          KM     URS 2009
 690          KM    Customized XKSAT Values
 691          BA   0.214
 692          LG    0.35    0.35    3.60    0.58       0
 693          UI       0     190     466     146      22       0       0       0       0       0
 694          UI       0       0       0       0       0       0       0       0       0       0
 695          UI       0       0       0       0       0       0       0       0       0       0
 696          UI       0       0       0       0       0       0       0       0       0       0
 697          UI       0       0       0       0       0       0       0       0       0       0
              *

 698          KK   CPC27
 699          KM    URS 2009
 700          KM        Combine DRC19, C27, AND RCPC28
 701          HC       3   2.817
              *

 702          KK    DC27
 703          KM    URS 2009
 704          KM    Divert flow into C33B
 705          KM        Flow is split between what passes through/over the structure and
 706          KM        what is diverted parallel to the railroad.
 707          KM    UPRR Structure 8 (3-48" SSP's)
 708          DT   DVC27
 709          DI       0      24      54     151     354     633    1419    2829
 710          DQ       0      24      54     115     190     270     342     395
              *
1                                          HEC-1 INPUT                                                    PAGE 18

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

 711          KK  RCPC27
 712          KM    This is in the 10-foot contour area, used the EEC route.
 713          KM        Route remainder flow from CP C27 to CP C20
 714          RS       1    FLOW      -1
 715          RC   0.050   0.045   0.050    1360  0.0051
 716          RX       0      20      30     170     310     450     590     730
 717          RY    1465    1465    1458  1460.0  1462.0  1464.0  1466.0    1468
              *

 718          KK   DRC07
 719          KM        Return diverted flow from CP C07
 720          DR   DVC07
              *

 721          KK   RDC07
 722          KM        Route flow from CP C07 to CP C20
 723          KM    This is in the 10-foot contour area, used the EEC route.
 724          RS       3    FLOW      -1
 725          RC   0.050   0.045   0.050    9400  0.0096
 726          RX       0     110     200     220     250     270     350     450
 727          RY    1494    1493    1493    1490    1490    1493    1493    1494
              *

 728          KK     C21   BASIN
 729          KM     URS 2009
 730          KM    Customized XKSAT Values
 731          BA   0.563
 732          LG    0.35    0.35    2.86    1.00       0
 733          UI       0     976    1086     111       0       0       0       0       0       0
 734          UI       0       0       0       0       0       0       0       0       0       0
 735          UI       0       0       0       0       0       0       0       0       0       0
 736          UI       0       0       0       0       0       0       0       0       0       0
 737          UI       0       0       0       0       0       0       0       0       0       0
              *

 738          KK    DC21
 739          KM      Divert flow into C22
 740          KM        Natural divergence of flow due to a braided channel network.
```

```
741          DT   DVC21
742          DI       0      59     141     365     858    2108    3600    5595    7685
743          DQ       0      59     129     260     531    1191    1992    3142    4249
             *

744          KK  RCPC21
745          KM        Route remainder flow from CP C21 to CP C20
746          KM    This is in the 10-foot contour area, used the EEC route.
747          RS       2    FLOW      -1
748          RC   0.050   0.045   0.050    4340  0.0093
749          RX       0     110     200     220     250     270     350     450
750          RY    1494    1493    1493    1490    1490    1493    1493    1494
             *
1                                          HEC-1 INPUT                                                    PAGE 19

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

751          KK     C20   BASIN
752          KM     URS 2009
753          KM    Customized XKSAT Values
754          BA   0.464
755          LG    0.35    0.35    3.25    0.76       0
756          UI       0     131     385     655     391     152      53      19       0       0
757          UI       0       0       0       0       0       0       0       0       0       0
758          UI       0       0       0       0       0       0       0       0       0       0
759          UI       0       0       0       0       0       0       0       0       0       0
760          UI       0       0       0       0       0       0       0       0       0       0
             *

761          KK   CPC20
762          KM    URS 2009
763          KM        Combine DRC07, C21, RCPC27 with C20
764          HC       4   3.257
             *

765          KK    DC20
766          KM    URS 2009
767          KM    Divert flow into C33B
768          KM        Flow is split between what passes through/over the structure and
769          KM        what is diverted parallel to the railroad.
770          KM    UPRR Structure 9 - MP877.34 (5-60" SSP's)
771          DT   DVC20
772          DI       0      38     112     248     480     738    1583    3258    5995
773          DQ       0      38     112     237     395     574     763     951    1103
             *

774          KK  RCPC20
775          KM    This is in the 10-foot contour area, used the EEC route.
776          KM        Route remainder flow from CP C20 to CP C26
777          RS       1    FLOW      -1
778          RC   0.050   0.045   0.050    2300  0.0066
779          RX       0      20      30     210     390     570     750     930
780          RY    1455    1455    1448  1450.4  1452.8  1455.2  1457.6    1460
             *

781          KK     C26   BASIN
782          KM     URS 2009
783          KM    Customized XKSAT Values
784          BA   0.101
785          LG    0.35    0.35    3.15    0.82       0
786          UI       0     102     226      56       8       0       0       0       0       0
787          UI       0       0       0       0       0       0       0       0       0       0
788          UI       0       0       0       0       0       0       0       0       0       0
789          UI       0       0       0       0       0       0       0       0       0       0
790          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

791          KK   CPC26
792          KM    URS 2009
793          KM        Combine Basin C26 and RCPC20
794          HC       2    .785
             *

795          KK    DC26
796          KM    URS 2009
797          KM    Divert flow into C33C
798          KM        Flow is split between what passes through/over the structure and
799          KM        what is diverted parallel to the railroad.
800          KM    UPRR Structure 10 - MP877.77 (2-60" CSP's)
801          DT   DVC26
802          DI       0      33      63     118     213     369     782    2377    5876
803          DQ       0      33      63     118     184     254     319     377     530
             *

804          KK  RCPC26
805          KM    This is in the 10-foot contour area, used the EEC route.
806          KM        Route remainder flow from CP C26 to CP C22
807          RS       2    FLOW      -1
808          RC   0.050   0.045   0.050    3100  0.0066
809          RX       0      20      30     170     310     450     590     730
810          RY    1437    1437    1429  1431.2  1433.4  1435.6  1437.8    1440
             *

811          KK   DRC21
812          KM        Return diverted flow from CP C21
813          DR   DVC21
             *

814          KK   RDC21
815          KM        Route flow from CP C21 to CP C22
```

```
816          KM    This is in the 10-foot contour area, used the EEC route.
817          RS       4    FLOW      -1
818          RC   0.050   0.045   0.050    8780  0.0092
819          RX       0      30     170     190     210     230     280     320
820          RY    1445    1444    1444    1440    1440    1444    1444    1445
             *

821          KK     C23   BASIN
822          KM     URS 2009
823          KM    Customized XKSAT Values
824          BA   0.496
825          LG    0.35    0.35    3.03    0.89       0
826          UI       0     839     972     102       0       0       0       0       0       0
827          UI       0       0       0       0       0       0       0       0       0       0
828          UI       0       0       0       0       0       0       0       0       0       0
829          UI       0       0       0       0       0       0       0       0       0       0
830          UI       0       0       0       0       0       0       0       0       0       0
             *
```



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

831          KK  RCPC23
832          KM        Route flow from CP C23 to CP C22
833          KM    This is in the 10-foot contour area, used the EEC route.
834          RS       1    FLOW      -1
835          RC   0.050   0.045   0.050    2310  0.0044
836          RX       0       8      35      50      70      85     110     118
837          RY    1431  1429.5    1429    1425    1425    1429  1429.5    1431
             *

838          KK     C22   BASIN
839          KM     URS 2009
840          KM    Customized XKSAT Values
841          BA   0.804
842          LG    0.35    0.35    3.11    0.84       0
843          UI       0     518    1526     839     179      49       0       0       0       0
844          UI       0       0       0       0       0       0       0       0       0       0
845          UI       0       0       0       0       0       0       0       0       0       0
846          UI       0       0       0       0       0       0       0       0       0       0
847          UI       0       0       0       0       0       0       0       0       0       0
             *

848          KK   CPC22
849          KM    URS 2009
850          KM        Combine DRC21, C23, C22, AND RCPC22
851          HC       4   1.690
             *

852          KK     C24   BASIN
853          KM    Customized XKSAT Values
854          KM     URS 2009
855          BA   0.162
856          LG    0.35    0.35    3.19    0.79       0
857          UI       0     136     347     121      19       0       0       0       0       0
858          UI       0       0       0       0       0       0       0       0       0       0
859          UI       0       0       0       0       0       0       0       0       0       0
860          UI       0       0       0       0       0       0       0       0       0       0
861          UI       0       0       0       0       0       0       0       0       0       0
             *

862          KK   CPC24
863          KM    URS 2009
864          KM        Combine C24 AND CPC22
865          HC       2   1.852
             *

866          KK  PNDC01
867          KM        Pond C01
868          KM    FROM EEC STUDY
869          KM        Common storage area between CPC22 and CPC24 (behind SPRR embankment)
870          RS       1    STOR      -1
871          SV       0     0.5     2.4     5.9    11.4    19.5    30.7    44.8    62.5    84.3
872          SE  1417.6    1419    1420    1421    1422    1423    1424    1425    1426    1427
873          SQ       0     210     437     759    1197    1715    2230    2676    3109    3630
             *
```



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

874          KK    DC24
875          KM    FROM EEC STUDY
876          KM    Divert flow to Subbasin C33C
877          KM        Flow is split between what passes through/over the structure and
878          KM        what is diverted parallel to the railroad.
879          KM    UPRR Structures 11 and 12 (2-30' Prestressed Concrete Box and 12' Bridge)
880          DT   DVC24
881          DI       0     210     437     759    1197    1715    2230    2676    3109    3630
882          DQ       0     210     437     759    1197    1715    2230    2676    3109    3630
             *

883          KK  RCPC24
884          KM    FROM EEC STUDY
885          KM        Artificial route to reduce hydrographs, no flow from CP C24 gets to CP C
886          KM        Route remainder flow from CP C24 to CP C25
887          RS       1    FLOW      -1
888          RC   0.050   0.045   0.050    1500   0.002
889          RX       0     100     115     120     320     520     720     920
890          RY    1424    1424    1420    1420    1421    1422    1424    1425
             *

891          KK     C25   BASIN
892          KM     URS 2009
893          KM    Customized XKSAT Values
```

```
894          BA   0.076
895          LG    0.35    0.35    3.15    0.82       0
896          UI       0     228      64       0       0       0       0       0       0       0
897          UI       0       0       0       0       0       0       0       0       0       0
898          UI       0       0       0       0       0       0       0       0       0       0
899          UI       0       0       0       0       0       0       0       0       0       0
900          UI       0       0       0       0       0       0       0       0       0       0
             *

901          KK   CPC25
902          KM        Artificial combine to reduce hydrographs, no flow from CP C24 gets to CP
903          KM        Since this is an artificial combine, the area does not carry over to CP
904          KM        And therefore, the area associated with the HC record reflects only the
905          KM        subbasin C25
906          HC       2   0.076
             *

907          KK  PNDC02
908          KM    FROM EEC STUDY
909          KM        POND C02
910          KM        Storage area for CPC25
911          RS       1    STOR      -1
912          SV       0     0.1     1.1     3.1     5.9    10.2    15.6    22.2    30.2    39.6
913          SE  1417.4    1418    1419    1420    1421    1422    1423    1424    1425    1426
914          SQ       0      32      86     141     233     352     551     836    1278    1890
             *
```



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

915          KK    DC25
916          KM    URS 2009
917          KM    Divert flow to Subbasin C33C
918          KM        Flow is split between what passes through/over the structure and
919          KM        what is diverted parallel to the railroad.
920          KM    UPRR Structure 13 - MP878.77 (13' Bridge)
921          DT   DVC25
922          DI       0      65     137     229     351     550     842    1270    2806
923          DQ       0      65     136     223     321     429     535     616    1625
             *

924          KK  RCPC25
925          KM        Route remainder flow from CP C25 to CP D09
926          RS       1    FLOW      -1
927          RC   0.050   0.045   0.050    4950  0.0048
928          RX       0     275     490     550     575     620     810    1110
929          RY    1405    1404    1403    1400    1400    1403    1404    1405
             *
             *

930          KK     D02   BASIN
931          KM    URS 2009
932          KM    Customized XKSAT Values
933          BA   0.496
934          LG    0.35    0.35    3.15    0.82       0
935          UI       0     459    1091     317      47       0       0       0       0       0
936          UI       0       0       0       0       0       0       0       0       0       0
937          UI       0       0       0       0       0       0       0       0       0       0
938          UI       0       0       0       0       0       0       0       0       0       0
939          UI       0       0       0       0       0       0       0       0       0       0
             *

940          KK    DD02
941          KM      Divert flow into D01
942          KM        Natural divergence of flow due to a braided channel network.
943          DT   DVD02
944          DI       0     113     266     523     752    1330    2297    3723    6492    9369
945          DQ       0       0      20      83     183     425     847    1490    2820    4139
             *

946          KK  RCPD02
947          KM        Route remainder flow from CP D02 to CP D03
948          KM    This is in the 10-foot contour area, used the EEC route.
949          RS       1    FLOW      -1
950          RC   0.050   0.045   0.050    2200  0.0190
951          RX     175     185     210     215     225     230     255     265
952          RY    1685    1684    1683    1682    1682    1683    1684    1685
             *
```



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

953          KK     D03   BASIN
954          KM    URS 2009
955          KM    Customized XKSAT Values
956          BA   0.340
957          LG    0.35    0.35    2.99    0.91       0
958          UI       0     180     564     417     117      26       0       0       0       0
959          UI       0       0       0       0       0       0       0       0       0       0
960          UI       0       0       0       0       0       0       0       0       0       0
961          UI       0       0       0       0       0       0       0       0       0       0
962          UI       0       0       0       0       0       0       0       0       0       0
             *
963          KM    URS 2009

964          KK   CPD03
965          KM        Combine D02 with D03
966          HC       2   0.769
             *

967          KK    DD03
968          KM      Divert flow into D01
969          KM        Natural divergence of flow due to a braided channel network.
970          DT   DVD03
```

```
 971          DI       0      75     252     555    1005    1218    2090    3899    6173    9828
 972          DQ       0      44     145     327     608     733    1309    2622    4116    6233
              *

 973          KK  RCPD03
 974          KM        Route remainder flow from CP D03 to CP D04
 975          KM    This is in the 10-foot contour area, used the EEC route.
 976          RS       1    FLOW      -1
 977          RC   0.050   0.045   0.050    4290  0.0133
 978          RX       0      70     153     165     185     195     250     340
 979          RY    1643    1642    1641    1638    1638    1641    1642    1643
              *

 980          KK     D04   BASIN
 981          KM     URS 2009
 982          KM    Customized XKSAT Values
 983          BA   0.198
 984          LG    0.35    0.35    2.85    1.02       0
 985          UI       0     106     331     241      67      15       0       0       0       0
 986          UI       0       0       0       0       0       0       0       0       0       0
 987          UI       0       0       0       0       0       0       0       0       0       0
 988          UI       0       0       0       0       0       0       0       0       0       0
 989          UI       0       0       0       0       0       0       0       0       0       0
              *
 990          KM    URS 2009

 991          KK   CPD04
 992          KM        Combine D03 with D04
 993          HC       2   0.513
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 994          KK    DD04
 995          KM      Divert flow into D05
 996          KM        Natural divergence of flow due to a braided channel network.
 997          DT   DVD04
 998          DI       0      34     123     274     496    1091    1962    3285    5668    8777
 999          DQ       0      20      71     154     276     598    1097    1864    3244    5216
              *

1000          KK  RCPD04
1001          KM        Route remainder flow from CP D04 to CP D01
1002          KM    This is in the 10-foot contour area, used the EEC route.
1003          RS       4    FLOW      -1
1004          RC   0.050   0.045   0.050    7990  0.0120
1005          RX       0     220     360     370     385     395     510     710
1006          RY    1577    1576    1575    1573    1573    1575    1576    1577
              *

1007          KK   DRD02
1008          KM        Return diverted flow from CP D02
1009          DR   DVD02
              *

1010          KK   RDD02
1011          KM        Route flow from CP D02 to CP D01
1012          KM    This is in the 10-foot contour area, used the EEC route.
1013          RS       9    FLOW      -1
1014          RC   0.050   0.045   0.050   14130  0.0120
1015          RX       0     160     295     305     320     330     420     575
1016          RY    1588    1587    1586    1584    1584    1586    1587    1588
              *

1017          KK   DRD03
1018          KM        Return diverted flow from CP D03
1019          DR   DVD03
              *

1020          KK   RDD03
1021          KM        Route flow from CP D03 to CP D01
1022          KM    This is in the 10-foot contour area, used the EEC route.
1023          RS       5    FLOW      -1
1024          RC   0.050   0.045   0.050   12100  0.0120
1025          RX     310     330     360     370     385     395     425     445
1026          RY    1577    1576    1575    1573    1573    1575    1576    1577
              *

1027          KK     D01   BASIN
1028          KM     URS 2009
1029          KM    Customized XKSAT Values
1030          BA   2.428
1031          LG    0.35    0.35    3.11    0.84       0
1032          UI       0     421    1335    2351    2554    1523     681     320      99      79
1033          UI       0       0       0       0       0       0       0       0       0       0
1034          UI       0       0       0       0       0       0       0       0       0       0
1035          UI       0       0       0       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1036          UI       0       0       0       0       0       0       0       0       0       0
              *
1037          KM    URS 2009

1038          KK   CPD01
1039          KM        Combine DRD02, DRD03, D04 with D01
1040          HC       4   3.169
              *

1041          KK    DD01
1042          KM      Divert flow into D09
1043          KM        Natural divergence of flow due to a braided channel network.
1044          DT   DVD01
```

```
1045          DI       0      83     190     360     603     930    1599    2843    4760    8253
1046          DQ       0      83     176     305     473     686     979    1623    2628    4474
              *

1047          KK   RDD01
1048          KM        Route diverted flow from CP D01 to CP D09
1049          RS       4    FLOW      -1
1050          RC   0.050   0.045   0.050   12290  0.0088
1051          RX       0     150     280     290     330     340     500     650
1052          RY    1487    1486    1485    1482    1482    1485    1486    1487
              *

1053          KK     D09
1054          KM     URS 2009
1055          KM    Customized XKSAT Values
1056          BA   0.544
1057          LG    0.35    0.35    3.40    0.68       0
1058          UI       0     178     521     798     412     131      41      24       0       0
1059          UI       0       0       0       0       0       0       0       0       0       0
1060          UI       0       0       0       0       0       0       0       0       0       0
1061          UI       0       0       0       0       0       0       0       0       0       0
1062          UI       0       0       0       0       0       0       0       0       0       0
              *

1063          KK   CPD09
1064          KM    URS 2009
1065          KM        Combine RCPD01, D09, and RCPC25
1066          HC       3   1.748
              *

1067          KK    DD09
1068          KM    URS 2009
1069          KM    Divert flow into Watershed C, to CP C33C
1070          KM        Flow is split between what passes through/over the structure and
1071          KM        what is diverted parallel to the railroad.
1072          KM    UPRR Structure 14 - MP878.92 (30' PreStressed Concrete Box (PCB) Girder(30" d
1073          DT   DVD09
1074          DI       0      63     191     310     404     487     568    1775
1075          DQ       0      63     191     310     404     487     563    1750
              *
```



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

1076          KK  RCPD09
1077          KM    This is in the 10-foot contour area, used the EEC route.
1078          KM        Route remainder flow from CP D09 to CP D12
1079          RS       1    FLOW      -1
1080          RC   0.050   0.045   0.050    1190  0.0048
1081          RX       0      20      30     170     310     450     590     730
1082          RY    1426    1426    1419  1421.2  1423.4  1425.6  1427.8    1430
              *

1083          KK     D12
1084          KM     URS 2009
1085          KM    Customized XKSAT Values
1086          BA   0.128
1087          LG    0.35    0.35    3.17    0.81       0
1088          UI       0     114     279      88      13       0       0       0       0       0
1089          UI       0       0       0       0       0       0       0       0       0       0
1090          UI       0       0       0       0       0       0       0       0       0       0
1091          UI       0       0       0       0       0       0       0       0       0       0
              *

1092          KK   CPD12
1093          KM    URS 2009
1094          KM       Combine RCPD09 and Basin D12
1095          HC       2   0.145
              *

1096          KK    DD12
1097          KM    URS 2009
1098          KM    Divert flow into Watershed C, to CP C33C
1099          KM        Flow is split between what passes through/over the structure and
1100          KM        what is diverted parallel to the railroad.
1101          KM    UPRR Structure 15 - MP879.14 (2-48" SSP's)
1102          DT   DVD12
1103          DI       0      41      78     127     189     256     315     470    1513
1104          DQ       0      41      78     127     180     226     263     295    1050
              *

1105          KK  RCPD12
1106          KM    This is in the 10-foot contour area, used the EEC route.
1107          KM        Route remainder flow from CP D12 to CP D13
1108          RS       1    FLOW      -1
1109          RC   0.050   0.045   0.050     590  0.0024
1110          RX       0      20      30     170     310     450     590     730
1111          RY    1425    1425    1417  1419.6  1422.2  1424.8  1427.4    1430
              *

1112          KK   DRD01
1113          KM        Return diverted flow from CP D01 in basin D09
1114          DR   DVD01
              *
```



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

1115          KK  RCPD01
1116          KM        Route remainder flow from CP D01 to CP D05
1117          KM    This is in the 10-foot contour area, used the EEC route.
1118          RS       7    FLOW      -1
1119          RC   0.050   0.045   0.050    7540  0.0092
1120          RX      80      90     192     197     207     212     325     335
```

```
1121        RY  1489.5    1488    1487    1486    1486    1487    1488  1489.5
            *
            *

1122        KK   DRD04
1123        KM        Return diverted flow from CP D04
1124        DR   DVD04
            *

1125        KK   RDD04
1126        KM        Route flow from CP D04 to CP D05
1127        KM    This is in the 10-foot contour area, used the EEC route.
1128        RS      15    FLOW      -1
1129        RC   0.050   0.045   0.050   15200  0.0092
1130        RX       0      90     192     197     207     212     325     590
1131        RY    1489    1488    1487    1486    1486    1487    1488    1489
            *

1132        KK     D05   BASIN
1133        KM     URS 2009
1134        KM    Customized XKSAT Values
1135        BA   1.927
1136        LG    0.35    0.35    3.17    0.81       0
1137        UI       0     143     548     835    1220    1663    1165     820     497     243
1138        UI     154      61      44      44       0       0       0       0       0       0
1139        UI       0       0       0       0       0       0       0       0       0       0
1140        UI       0       0       0       0       0       0       0       0       0       0
1141        UI       0       0       0       0       0       0       0       0       0       0
            *
1142        KM    URS 2009

1143        KK   CPD05
1144        KM        Combine D01, DRD04 with D05
1145        HC       3   4.184
            *

1146        KK    DD05
1147        KM    URS 2009
1148        KM    Divert flow into D11
1149        KM        Natural divergence of flow due to a braided channel network.
1150        DT   DVD05
1151        DI       0      60     202     425     738    1146    1656    2420    4086
1152        DQ       0       0       4      12      26      45      70     132     248
            *
```



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

1153        KK   RDD05
1154        KM        Route flow from CP D05 to CP D13
1155        RS       2    FLOW      -1
1156        RC   0.050   0.045   0.050    5890  0.0080
1157        RX      90     100     200     210     240     250     375     385
1158        RY  1457.5    1456    1455    1453    1453    1455    1456  1457.5
            *

1159        KK     D13   BASIN
1160        KM     URS 2009
1161        BA   0.559
1162        LG    0.35    0.35    4.40    0.37       0
1163        UI       0     290     912     695     201      46       0       0       0       0
1164        UI       0       0       0       0       0       0       0       0       0       0
1165        UI       0       0       0       0       0       0       0       0       0       0
1166        UI       0       0       0       0       0       0       0       0       0       0
1167        UI       0       0       0       0       0       0       0       0       0       0
            *

1168        KK   CPD13
1169        KM    URS 2009
1170        KM        Combine Basin D13, RCPD12 and RCPD05
1171        HC       3   4.579
            *

1172        KK    DD13
1173        KM    URS 2009
1174        KM    Divert flow into D22
1175        KM        Flow is split between what passes through/over the structure and
1176        KM        what is diverted parallel to the railroad.
1177        KM    UPRR Structure 16 - MP879.78 (4-60" SSP's AND 2-60" CSP's)
1178        DT   DVD13
1179        DI       0     580     813    1101    1509    2553    5155
1180        DQ       0     580     800    1017    1193    1348    2088
            *

1181        KK  RCPD13
1182        KM    This is in the 10-foot contour area, used the EEC route.
1183        KM        Route remainder flow from CP D13 to CP D46
1184        RS       3    FLOW      -1
1185        RC   0.050   0.045   0.050    4420  0.0040
1186        RX       0      20      30     230     430     630     830    1030
1187        RY    1411    1411    1405  1408.0  1411.0  1414.0  1417.0    1420
            *

1188        KK     D46   BASIN
1189        KM     URS 2009
1190        BA   0.055
1191        LG    0.35    0.35    4.65    0.32       0
1192        UI       0     124      84       0       0       0       0       0       0       0
1193        UI       0       0       0       0       0       0       0       0       0       0
1194        UI       0       0       0       0       0       0       0       0       0       0
1195        UI       0       0       0       0       0       0       0       0       0       0
1196        UI       0       0       0       0       0       0       0       0       0       0
            *
```

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

1197          KM    URS 2009

1198          KK   CPD46
1199          KM        Combine Basin D46 and RCPD13
1200          HC       2   0.147
              *

1201          KK    DD46
1202          KM    URS 2009
1203          KM    Divert flow into D22
1204          KM        Flow is split between what passes through/over the structure and
1205          KM        what is diverted parallel to the railroad.
1206          KM    UPRR Structure 17 - MP880.08 (17' bridge)
1207          DT   DVD46
1208          DI       0      47     125     251     421     945    2258    5382    9762
1209          DQ       0      47     125     230     348     431     591    1700    3067
              *

1210          KK  RCPD46
1211          KM    This is in the 10-foot contour area, used the EEC route.
1212          KM        Route remainder flow from CP D46 to CP D10
1213          RS       2    FLOW      -1
1214          RC   0.050   0.045   0.050    1100  0.0040
1215          RX       0      20      30     230     430     630     830    1030
1216          RY    1409    1409    1403  1406.0  1409.0  1412.0  1415.0    1418
              *

1217          KK     D06   BASIN
1218          KM     URS 2009
1219          KM    Customized XKSAT Values
1220          BA   1.216
1221          LG    0.35    0.35    2.82    1.04       0
1222          UI       0     165     552     873    1310     860     523     217     116      35
1223          UI      35       0       0       0       0       0       0       0       0       0
1224          UI       0       0       0       0       0       0       0       0       0       0
1225          UI       0       0       0       0       0       0       0       0       0       0
1226          UI       0       0       0       0       0       0       0       0       0       0
              *

1227          KK    DD06
1228          KM      Divert flow into D08
1229          KM        Natural divergence of flow due to a braided channel network.
1230          DT   DVD06
1231          DI       0      34     133     276     658    1341    2396    4365    6763    9307
1232          DQ       0      23      89     184     418     826    1445    2534    4013    5489
              *

1233          KK  RCPD06
1234          KM        Route flow from CP D06 to CP D10
1235          KM    This is in the 10-foot contour area, used the EEC route.
1236          RS       8    FLOW      -1
1237          RC   0.050   0.045   0.050   16830  0.0078
1238          RX       0     140     310     320     340     350     540     835
1239          RY    1459    1458    1457    1455    1455    1457    1458    1459
              *
```



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

1240          KK   DRD06
1241          KM        Return diverted flow from CP D06
1242          DR   DVD06
              *

1243          KK   RDD06
1244          KM        Route flow from CP D06 to CP D08
1245          KM    This is in the 10-foot contour area, used the EEC route.
1246          RS       2    FLOW      -1
1247          RC   0.050   0.045   0.050    3320  0.0081
1248          RX     290     310     340     350     360     370     390     410
1249          RY    1523    1522    1521    1520    1520    1521    1522    1523
              *

1250          KK     D08   BASIN
1251          KM     URS 2009
1252          KM    Customized XKSAT Values
1253          BA   0.280
1254          LG    0.35    0.35    3.13    0.83       0
1255          UI       0     131     416     367     127      29       0       0       0       0
1256          UI       0       0       0       0       0       0       0       0       0       0
1257          UI       0       0       0       0       0       0       0       0       0       0
1258          UI       0       0       0       0       0       0       0       0       0       0
1259          UI       0       0       0       0       0       0       0       0       0       0
              *
1260          KM    URS 2009

1261          KK   CPD08
1262          KM        Combine DRD06 with D08
1263          HC       2    0.73
              *

1264          KK  RCPD08
1265          KM        Route flow from CP D08 to CP D10
1266          KM    This is in the 10-foot contour area, used the EEC route.
1267          RS       6    FLOW      -1
1268          RC   0.050   0.045   0.050   13880  0.0078
1269          RX     280     290     310     320     340     350     370     380
1270          RY    1459    1458    1457    1455    1455    1457    1458    1459
              *
              *

1271          KK   DRD05
1272          KM        Return diverted flow from CP D05
```

```
1273          DR   DVD05
              *
              *

1274          KK  RCPD05
1275          KM        Route flow from CP D05 to CP D11
1276          KM    This is in the 10-foot contour area, used the EEC route.
1277          RS       4    FLOW     -1
1278          RC   0.050   0.045   0.050    6030  0.0084
1279          RX       0    1025    1052    1056    1060    1064    1090    1615
1                                          HEC-1 INPUT                                                          PAGE 32

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

1280          RY    1465    1464    1463  1460.5  1460.5    1463    1464    1465
              *

1281          KK     D11   BASIN
1282          KM     URS 2009
1283          KM    Customized XKSAT Values
1284          BA   0.395
1285          LG    0.35    0.35    3.64    0.57       0
1286          UI       0     127     371     578     305      98      31      17       0       0
1287          UI       0       0       0       0       0       0       0       0       0       0
1288          UI       0       0       0       0       0       0       0       0       0       0
1289          UI       0       0       0       0       0       0       0       0       0       0
              *
1290          KM    URS 2009

1291          KK   CPD11
1292          KM        Combine D05 with D11
1293          HC       2   .562
              *

1294          KK  RCPD11
1295          KM        Route flow from CP D11 to CP D10
1296          KM    This is in the 10-foot contour area, used the EEC route.
1297          RS       3    FLOW     -1
1298          RC   0.050   0.045   0.050    3640  0.0073
1299          RX     140     650     700     750     800     850     900    1410
1300          RY    1416    1415    1415    1414    1414    1415    1415    1416
              *

1301          KK     D10   BASIN
1302          KM     URS 2009
1303          KM    Customized XKSAT Values
1304          BA   0.841
1305          LG    0.35    0.35    3.85    0.50       0
1306          UI       0      84     307     465     773     662     446     266     120      69
1307          UI      22      22       0       0       0       0       0       0       0       0
1308          UI       0       0       0       0       0       0       0       0       0       0
1309          UI       0       0       0       0       0       0       0       0       0       0
1310          UI       0       0       0       0       0       0       0       0       0       0
              *
1311          KM    URS 2009

1312          KK   CPD10
1313          KM        Combine D06, D08, D11, CPD46 with D10
1314          HC       5   2.953
              *

1315          KK    DD10
1316          KM    URS 2009
1317          KM    Divert flow into D22
1318          KM        Flow is split between what passes through/over the structure and
1319          KM        what is diverted parallel to the railroad.
1320          KM    UPRR Structure 18 - MP880.29 (3-72" SSP's)
1321          DT   DVD10
1322          DI       0     515     678     902    1642    3759
1                                          HEC-1 INPUT                                                          PAGE 33

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

1323          DQ       0     515     663     812     992    1663
              *

1324          KK  RCPD10
1325          KM    This is in the 10-foot contour area, used the EEC route.
1326          KM        Route remainder flow from CP D10 to CP D47
1327          RS       1    FLOW     -1
1328          RC   0.050   0.045   0.050     910  0.0033
1329          RX       0      20      30     170     310     450     590     730
1330          RY    1403    1403    1397  1399.6  1402.2  1404.8  1407.4    1410
              *

1331          KK     D47   BASIN
1332          KM     URS 2009
1333          KM    Customized XKSAT Values
1334          BA   0.040
1335          LG    0.35    0.35    3.40    0.68       0
1336          UI       0      84      66       0       0       0       0       0       0       0
1337          UI       0       0       0       0       0       0       0       0       0       0
1338          UI       0       0       0       0       0       0       0       0       0       0
1339          UI       0       0       0       0       0       0       0       0       0       0
1340          UI       0       0       0       0       0       0       0       0       0       0
              *

1341          KK   CPD47
1342          KM    URS 2009
1343          KM        Combine Basin D47 and RCPD10
1344          HC       2   0.158
              *

1345          KK    DD47
1346          KM    URS 2009
1347          KM    Divert flow into D22
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1348          KM        Flow is split between what passes through/over the structure and
1349          KM        what is diverted parallel to the railroad.
1350          KM           UPRR Structure 19 - MP880.45 (12' Bridge)
1351          DT   DVD47
1352          DI       0     101     130     208     478    1462    2490
1353          DQ       0     101     123     163     197     428     810
              *

1354          KK  RCPD47
1355          KM    This is in the 10-foot contour area, used the EEC route.
1356          KM        Route remainder flow from CP D47 to CP D15
1357          RS       2    FLOW      -1
1358          RC   0.050   0.045   0.050    2150  0.0040
1359          RX       0      20      30     230     430     630     830    1030
1360          RY    1399    1399    1393  1396.0  1399.0  1402.0  1405.0    1408
              *
```



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

1361          KK     D07   BASIN
1362          KM     URS 2009
1363          KM    Customized XKSAT Values
1364          BA   1.050
1365          LG    0.35    0.35    3.27    0.75       0
1366          UI       0     121     422     645    1060     789     519     253     130      59
1367          UI      29      29       0       0       0       0       0       0       0       0
1368          UI       0       0       0       0       0       0       0       0       0       0
1369          UI       0       0       0       0       0       0       0       0       0       0
1370          UI       0       0       0       0       0       0       0       0       0       0
              *

1371          KK    DD07
1372          KM      Divert flow into D17
1373          KM        Natural divergence of flow due to a braided channel network.
1374          DT   DVD07
1375          DI       0      53     127     249     354     652    1157    2011    3786    5850
1376          DQ       0      53     121     220     288     474     779    1253    2178    3304
              *

1377          KK   RDD07
1378          KM        Route remainder flow from CP D07 to CP D15
1379          KM    This is in the 10-foot contour area, used the EEC route.
1380          RS       6    FLOW      -1
1381          RC   0.050   0.045   0.050    8710  0.0071
1382          RX     440     455     485     495     510     537     567     582
1383          RY    1425    1424    1423    1422    1422    1423    1424    1425
              *

1384          KK     D15   BASIN
1385          KM     URS 2009
1386          BA   0.653
1387          LG    0.35    0.35    4.40    0.37       0
1388          UI       0     121     378     686     666     392     160      76      22      22
1389          UI       0       0       0       0       0       0       0       0       0       0
1390          UI       0       0       0       0       0       0       0       0       0       0
1391          UI       0       0       0       0       0       0       0       0       0       0
1392          UI       0       0       0       0       0       0       0       0       0       0
              *

1393          KK   CPD15
1394          KM    URS 2009
1395          KM        Combine Basin D15, RCPD07, and RCPD47
1396          HC       3   0.947
              *

1397          KK    DD15
1398          KM    URS 2009
1399          KM    Divert flow into D22
1400          KM        Flow is split between what passes through/over the structure and
1401          KM        what is diverted parallel to the railroad.
1402          KM    UPRR Structure 20 - MP880.88 (2-60" SSP's 2-60" CSP's)
1403          DT   DVD15
1404          DI       0     264     415     624    1100    2059    3838    7307
```



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

1405          DQ       0     264     401     547     688     800     936    1700
              *

1406          KK  RCPD15
1407          KM    This is in the 10-foot contour area, used the EEC route.
1408          KM        Route remainder flow from CP D15 to CP D17
1409          RS       2    FLOW      -1
1410          RC   0.050   0.045   0.050    1810  0.0029
1411          RX       0      20      30     210     390     570     750     930
1412          RY    1394    1394    1386  1388.8  1391.6  1394.4  1397.2    1400
              *

1413          KK   DRD07
1414          KM        Return diverted flow from CP D07
1415          DR   DVD07
              *

1416          KK  RCPD07
1417          KM        Route flow from CP D07 to CP D17
1418          KM    This is in the 10-foot contour area, used the EEC route.
1419          RS       6    FLOW      -1
1420          RC   0.050   0.045   0.050    9970  0.0066
1421          RX     330     340     360     405     425     480     500     510
1422          RY    1425    1424    1423    1422    1422    1423    1424    1425
              *

1423          KK     D17   BASIN
```

```
1424          KM     URS 2009
1425          KM    Customized XKSAT Values
1426          BA   0.778
1427          LG    0.35    0.35    3.50    0.63       0
1428          UI       0     105     352     555     837     552     337     140      76      23
1429          UI      23       0       0       0       0       0       0       0       0       0
1430          UI       0       0       0       0       0       0       0       0       0       0
1431          UI       0       0       0       0       0       0       0       0       0       0
1432          UI       0       0       0       0       0       0       0       0       0       0
              *
1433          KM    URS 2009

1434          KK   CPD17
1435          KM        Combine D17 with RDD07 and RCPD15
1436          HC       3   1.534
              *

1437          KK    DD17
1438          KM    URS 2009
1439          KM    Divert flow into D23
1440          KM        Flow is split between what passes through/over the structure and
1441          KM        what is diverted parallel to the railroad.
1442          KM    UPRR Structure 21 - MP881.2 (3-60" SSP's)
1443          DT   DVD17
1444          DI       0     390     527     780    1385    3337    5201
1445          DQ       0     390     503     602     684    1300    2117
              *
```



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

1446          KK  RCPD17
1447          KM    This is in the 10-foot contour area, used the EEC route.
1448          KM        Route remainder flow from CP D17 to CP D18
1449          RS       2     FLOW      -1
1450          RC   0.050   0.045   0.050    1410  0.0038
1451          RX       0      20      30     270     510     750     990    1230
1452          RY    1388    1388    1380  1383.0  1386.0  1389.0  1392.0    1395
              *

1453          KK     D18   BASIN
1454          KM     URS 2009
1455          BA   0.432
1456          KM    Customized XKSAT Values
1457          LG    0.35    0.35    3.21    0.78       0
1458          UI       0     103     311     563     394     189      71      22      16       0
1459          UI       0       0       0       0       0       0       0       0       0       0
1460          UI       0       0       0       0       0       0       0       0       0       0
1461          UI       0       0       0       0       0       0       0       0       0       0
1462          UI       0       0       0       0       0       0       0       0       0       0
              *

1463          KK   CPD18
1464          KM    URS 2009
1465          KM        Combine D18 with RCPD17
1466          HC       2   1.199
              *

1467          KK    DD18
1468          KM    URS 2009
1469          KM    Divert flow into D23
1470          KM        Flow is split between what passes through/over the structure and
1471          KM        what is diverted parallel to the railroad.
1472          KM    UPRR Structure 22 - MP881.45 (3-48" SSP's)
1473          DT   DVD18
1474          DI       0     151     261     476    1269    3091    6707
1475          DQ       0     151     230     309     369     444     980
              *

1476          KK  RCPD18
1477          KM    This is in the 10-foot contour area, used the EEC route.
1478          KM        Route remainder flow from CP D18 to CP D19
1479          RS       1     FLOW      -1
1480          RC   0.050   0.045   0.050    1290  0.0045
1481          RX       0      20      30     210     390     570     750     930
1482          RY    1381    1381    1375  1377.0  1379.0  1381.0  1383.0    1385
              *

1483          KK     D19   BASIN
1484          KM     URS 2009
1485          KM    Customized XKSAT Values
1486          BA   0.247
1487          LG    0.35    0.35    3.21    0.78       0
1488          UI       0     126     396     310      94      22       0       0       0       0
1489          UI       0       0       0       0       0       0       0       0       0       0
```



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

1490          UI       0       0       0       0       0       0       0       0       0       0
1491          UI       0       0       0       0       0       0       0       0       0       0
1492          UI       0       0       0       0       0       0       0       0       0       0
              *

1493          KK   CPD19
1494          KM    URS 2009
1495          KM        Combine D19 with RCPD18
1496          HC       2   0.517
              *

1497          KK    DD19
1498          KM    URS 2009
1499          KM    Divert flow into D24
1500          KM        Flow is split between what passes through/over the structure and
1501          KM        what is diverted parallel to the railroad.
```

```
1502          KM    UPRR Structure 23 - MP881.75 (3-48" SSP)
1503          DT   DVD19
1504          DI       0      159      262      449      733     2029
1505          DQ       0        0       24      132      348     1329
              *

1506          KK  RCPD19
1507          KM    This is in the 10-foot contour area, used the EEC route.
1508          KM        Route remainder flow from CP D19 to CP D20
1509          RS       2    FLOW      -1
1510          RC   0.050   0.045   0.050    1700  0.0038
1511          RX       0      20      30     200     370     540     710     880
1512          RY    1375    1375    1368  1370.4  1372.8  1375.2  1377.6    1380
              *

1513          KK     D20   BASIN
1514          KM    Customized XKSAT Values
1515          KM     URS 2009
1516          BA   0.110
1517          LG    0.35    0.35    3.21    0.78       0
1518          UI       0     111     246      61       8       0       0       0       0       0
1519          UI       0       0       0       0       0       0       0       0       0       0
1520          UI       0       0       0       0       0       0       0       0       0       0
1521          UI       0       0       0       0       0       0       0       0       0       0
1522          UI       0       0       0       0       0       0       0       0       0       0
              *

1523          KK   CPD20
1524          KM    URS 2009
1525          KM        Combine D20 with RCPD19
1526          HC       2   0.586
              *

1527          KK    DD20
1528          KM    URS 2009
1529          KM    Divert flow into D25
1530          KM        Flow is split between what passes through/over the structure and
1531          KM        what is diverted parallel to the railroad.
1532          KM    UPRR Structure 24 - MP881.99 (2-72" SSP)
```



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

1533          DT   DVD20
1534          DI       0     189     305     484     709    1529    3192    6277    8644
1535          DQ       0     189     277     373     472     571     656    1100    1663
              *

1536          KK  RCPD20
1537          KM    This is in the 10-foot contour area, used the EEC route.
1538          KM        Route remainder flow from CP D20 to CP D21
1539          RS      17    FLOW      -1
1540          RC   0.050   0.045   0.050     850  0.0039
1541          RX       0      20      30     180     330     480     630     780
1542          RY    1371    1371    1364  1366.2  1368.4  1370.6  1372.8    1375
              *

1543          KK     D21   BASIN
1544          KM     URS 2009
1545          KM    Customized XKSAT Values
1546          BA   0.077
1547          LG    0.35    0.35    3.21    0.78       0
1548          UI       0     133     148      15       0       0       0       0       0       0
1549          UI       0       0       0       0       0       0       0       0       0       0
1550          UI       0       0       0       0       0       0       0       0       0       0
1551          UI       0       0       0       0       0       0       0       0       0       0
1552          UI       0       0       0       0       0       0       0       0       0       0
              *

1553          KK   CPD21
1554          KM    URS 2009
1555          KM        Combine D21 with RCPD20
1556          HC       2    .089
              *

1557          KK    DD21
1558          KM    URS 2009
1559          KM        Divert flow into D25
1560          KM        Flow is split between what passes through/over the structure and
1561          KM        what is diverted parallel to the railroad.
1562          KM    UPRR Structure 25-MP882.15 (2-48" CMP's)
1563          DT   DVD21
1564          DI       0      37      92     198     428     951    1674    3459
1565          DQ       0      37      68     116     168     216     257     299
              *

1566          KK  RCPD21
1567          KM    This is in the 10-foot contour area, used the EEC route.
1568          KM        Route remainder flow from CP D21 to CP E33
1569          RS      52    FLOW      -1
1570          RC   0.050   0.045   0.050    1550   0.004
1571          RX       0      20      97     107     177     247     317     390
1572          RY  1369.8  1368.5    1368    1364  1365.5    1367  1368.5    1370
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1573          KK     E33   BASIN
1574          KM     URS 2009
1575          KM        Customized XKSAT Values
1576          BA   0.049
1577          LG    0.35    0.35    3.21    0.78       0
1578          UI       0     101      82       0       0       0       0       0       0       0
1579          UI       0       0       0       0       0       0       0       0       0       0
```

```
1580          UI       0       0       0       0       0       0       0       0       0       0
1581          UI       0       0       0       0       0       0       0       0       0       0
1582          UI       0       0       0       0       0       0       0       0       0       0
              *
1583          KM    URS 2009

1584          KK   CPE33
1585          KM        Combine E33 with RCPD21
1586          HC       2   0.072
              *

1587          KK    DE33
1588          KM    URS 2009
1589          KM    Divert flow into E42
1590          KM        Flow is split between what passes through/over the structure and
1591          KM        what is diverted parallel to the railroad.
1592          KM    UPRR Structure 26 - MP882.37 (2-58"x36" CMP's)
1593          DT   DVE33
1594          DI       0     162     214     310     427     924    2720
1595          DQ       0     162     203     236     267     297     675
              *

1596          KK  RCPE33
1597          KM    URS 2009
1598          KM        Route remainder flow from CP E33 to CP E32
1599          RS       1     FLOW      -1
1600          RC   0.050   0.045   0.050    1486  0.0034
1601          RX       0       5      10      90     100     250     400     588
1602          RY  1361.4 1362.12 1362.12 1362.54 1359.17  1359.5  1359.7    1360
              *

1603          KK     E17   BASIN
1604          KM     URS 2009
1605          KM        Customized XKSAT Values
1606          BA   1.478
1607          LG    0.35    0.35    3.21    0.78       0
1608          UI       0     121     481     721    1132    1249     844     570     267     159
1609          UI      80      36      36       0       0       0       0       0       0       0
1610          UI       0       0       0       0       0       0       0       0       0       0
1611          UI       0       0       0       0       0       0       0       0       0       0
1612          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

1613          KK  RCPE17
1614          KM        URS 2009
1615          KM        Route flow from CP E17 to CP E32
1616          RS       4    FLOW      -1
1617          RC   0.050   0.045   0.050    5189  0.0062
1618          RX       0     249     401     425     450     490     527     710
1619          RY  1369.9  1370.1  1367.9  1367.9  1367.9  1367.9  1368.6  1369.3
              *

1620          KK     E32   BASIN
1621          KM     URS 2009
1622          KM        Customized XKSAT Values
1623          BA   0.284
1624          LG    0.35    0.35    3.55    0.61       0
1625          UI       0     142     447     361     113      26       0       0       0       0
1626          UI       0       0       0       0       0       0       0       0       0       0
1627          UI       0       0       0       0       0       0       0       0       0       0
1628          UI       0       0       0       0       0       0       0       0       0       0
1629          UI       0       0       0       0       0       0       0       0       0       0
              *
1630          KM    URS 2009

1631          KK   CPE32
1632          KM        Combine RCPE17 with E32 and RCPE33
1633          HC       3   1.762
              *

1634          KK    DE32
1635          KM    URS 2009
1636          KM    Divert flow into E40
1637          KM        Flow is split between what passes through/over the structure and
1638          KM        what is diverted parallel to the railroad.
1639          KM    UPRR Structure 27 - MP882.66 (3-60" SSP's)
1640          DT   DVE32
1641          DI       0     345     705    2069    3392
1642          DQ       0     345     459     600     814
              *

1643          KK  RCPE32
1644          KM    URS 2009
1645          KM        Route remainder flow from CP E32 to CP E53
1646          RS       1    FLOW      -1
1647          RC   0.050   0.045   0.050    1024  0.0059
1648          RX       0       5      16      79     102     400     500     880
1649          RY  1355.1  1355.5 1356.08 1356.23 1353.15 1354.25 1354.61    1356
              *

1650          KK     E53   BASIN
1651          KM     URS 2009
1652          KM        Customized XKSAT Values
1653          BA   0.110
1654          LG    0.35    0.35    3.23    0.77       0
1655          UI       0     129     248      42       0       0       0       0       0       0
1656          UI       0       0       0       0       0       0       0       0       0       0
```



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

1657          UI       0       0       0       0       0       0       0       0       0       0
```

```
1658          UI       0       0       0       0       0       0       0       0       0       0
1659          UI       0       0       0       0       0       0       0       0       0       0
              *
1660          KM    URS 2009

1661          KK   CPE53
1662          KM        Combine Basin E53 and RCPE32
1663          HC       2   0.709
              *

1664          KK    DE53
1665          KM    URS 2009
1666          KM    Divert flow into E42
1667          KM        Flow is split between what passes through/over the structure and
1668          KM        what is diverted parallel to the railroad.
1669          KM    UPRR Structure 28 - MP882.91 (12' Bridge)
1670          DT   DVE53
1671          DI       0      76     180     348    1239    3445    7823
1672          DQ       0      76     144     196     238     294     638
              *

1673          KK  RCPE53
1674          KM    URS 2009
1675          KM        Route remainder flow from CP E53 to CP E31
1676          RS       7    FLOW      -1
1677          RC   0.050   0.045   0.050    1922  0.0021
1678          RX       0      10      15      97     117     200     300     460
1679          RY  1348.1  1347.5  1348.8  1348.8 1345.51 1346.11  1346.8    1348
              *

1680          KK     E18   BASIN
1681          KM     URS 2009
1682          KM        Customized XKSAT Values
1683          BA   0.730
1684          LG    0.35    0.35    3.35    0.70       0
1685          UI       0     159     485     894     692     374     131      51      26       0
1686          UI       0       0       0       0       0       0       0       0       0       0
1687          UI       0       0       0       0       0       0       0       0       0       0
1688          UI       0       0       0       0       0       0       0       0       0       0
1689          UI       0       0       0       0       0       0       0       0       0       0
              *

1690          KK  RCPE18
1691          KM         URS 2009
1692          KM        Route flow from CP E18 to CP E31
1693          RS      11    FLOW      -1
1694          RC   0.050   0.045   0.050    9291  0.0060
1695          RX       0     550     600     659     780    1150    1180    1703
1696          RY  1381.0  1380.0  1380.0  1380.0  1378.9  1380.0  1380.0  1381.0
              *
```



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

1697          KK     E31   BASIN
1698          KM     URS 2009
1699          BA   0.380
1700          LG    0.35    0.35    4.15    0.43       0
1701          UI       0      76     235     434     374     213      81      33      13       0
1702          UI       0       0       0       0       0       0       0       0       0       0
1703          UI       0       0       0       0       0       0       0       0       0       0
1704          UI       0       0       0       0       0       0       0       0       0       0
1705          UI       0       0       0       0       0       0       0       0       0       0
              *
1706          KM    URS 2009

1707          KK   CPE31
1708          KM        Combine E53, E18 with E31
1709          HC       3   1.280
              *

1710          KK    DE31
1711          KM    URS 2009
1712          KM    Divert flow into E43
1713          KM        Flow is split between what passes through/over the structure and
1714          KM        what is diverted parallel to the railroad.
1715          KM    UPRR Structure 29 - MP883.25 (3-60" SSP's)
1716          DT   DVE31
1717          DI       0      75     187     473    1426    3395    6758   11973   19739
1718          DQ       0      75     151     247     356     469     576     729    1430
              *

1719          KK  RCPE31
1720          KM    URS 2009
1721          KM        Route remainder flow from CP E31 to CP E30
1722          RS       2    FLOW      -1
1723          RC   0.050   0.045   0.050    1105  0.0057
1724          RX       0      10      17      93     108     400     650     830
1725          RY  1318.5  1318.3  1318.2  1318.3  1318.2  1318.3  1318.9  1318.9
              *

1726          KK     E01   BASIN
1727          KM     URS 2009
1728          KM        Customized XKSAT Values
1729          BA   4.541
1730          LG    0.35    0.35    3.38    0.69       0
1731          UI       0     500    1900    3236    3716    2254    1728    1199     910     605
1732          UI     460     315     218     193      77      77      77      77       0       0
1733          UI       0       0       0       0       0       0       0       0       0       0
1734          UI       0       0       0       0       0       0       0       0       0       0
              *

1735          KK  RCPE01
1736          KM        Route flow from CP E01 to CP E02
1737          KM    This is in the 10-foot contour area, used the EEC route.
```

```
1738          RS       4    FLOW      -1
1739          RC   0.050   0.045   0.050   12040  0.0118
1740          RX       0       8      60     100     130     160     230     238
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1741          RY  1630.5  1628.5    1628    1626    1626    1628  1628.5  1630.5
              *

1742          KK     E02   BASIN
1743          KM     URS 2009
1744          KM        Customized XKSAT Values
1745          BA   6.365
1746          LG    0.35    0.35    2.86    1.00       0
1747          UI       0     776    2668    4122    6622    4683    3026    1359     736     287
1748          UI     178     178       0       0       0       0       0       0       0       0
1749          UI       0       0       0       0       0       0       0       0       0       0
1750          UI       0       0       0       0       0       0       0       0       0       0
              *

1751          KK   CPE02
1752          KM        Combine E01 with E02
1753          HC       2  10.907
              *

1754          KK  RCPE02
1755          KM        Route flow from CP E02 to CP E03
1756          KM    This is in the 10-foot contour area, used the EEC route.
1757          RS       3    FLOW      -1
1758          RC   0.050   0.045   0.050    8490  0.0083
1759          RX       0       8     240     260     290     310     500     508
1760          RY    1551  1549.5    1548    1545    1545    1548  1549.5    1551
              *

1761          KK     E03   BASIN
1762          KM     URS 2009
1763          KM        Customized XKSAT Values
1764          BA   2.027
1765          LG    0.35    0.35    2.94    0.95       0
1766          UI       0     495    1490    2678    1828     853     327      91      77       0
1767          UI       0       0       0       0       0       0       0       0       0       0
1768          UI       0       0       0       0       0       0       0       0       0       0
1769          UI       0       0       0       0       0       0       0       0       0       0
1770          UI       0       0       0       0       0       0       0       0       0       0
              *

1771          KK   CPE03
1772          KM        Combine E02 with E03
1773          HC       2  12.934
              *

1774          KK  RCPE03
1775          KM        Route flow from CP E03 to CP E16
1776          KM    This is in the 10-foot contour area, used the EEC route.
1777          RS       3    FLOW      -1
1778          RC   0.050   0.045   0.050    8400  0.0084
1779          RX       0       8     100     170     205     270     370     378
1780          RY  1510.5    1509    1508    1505    1505    1508    1509  1510.5
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1781          KK     E16   BASIN
1782          KM     URS 2009
1783          KM        Customized XKSAT Values
1784          BA   0.785
1785          LG    0.35    0.35    3.35    0.70       0
1786          UI       0     266     781    1155     574     176      53       0       0       0
1787          UI       0       0       0       0       0       0       0       0       0       0
1788          UI       0       0       0       0       0       0       0       0       0       0
1789          UI       0       0       0       0       0       0       0       0       0       0
              *
1790          KM    URS 2009

1791          KK   CPE16
1792          KM        Combine E03 with E16
1793          HC       2  13.719
              *

1794          KK    DE16
1795          KM      Divert flow into E20
1796          KM        Natural divergence of flow due to a braided channel network.
1797          DT   DVE16
1798          DI       0     104     236     439     719    1082    1357    1881    3316    7597
1799          DQ       0       0      16      56     123     219     271     473    1230    2975
              *

1800          KK   RDE16
1801          KM    This is in the 10-foot contour area, used the EEC route.
1802          KM        Route flow from CP E16 to CP E19
1803          RS       8    FLOW      -1
1804          RC   0.050   0.045   0.050  4978.5  0.0061
1805          RX       0       5     205     225     235     255     455     460
1806          RY    1445    1443    1442    1440    1440    1442    1443    1445
              *

1807          KK     E19   BASIN
1808          KM     URS 2009
1809          KM        Customized XKSAT Values
1810          BA   0.466
1811          LG    0.35    0.35    3.71    0.55       0
1812          UI       0      88     274     502     471     275     110      50      16      16
1813          UI       0       0       0       0       0       0       0       0       0       0
```

```
1814          UI       0       0       0       0       0       0       0       0       0       0
1815          UI       0       0       0       0       0       0       0       0       0       0
1816          UI       0       0       0       0       0       0       0       0       0       0
              *
1817          KM    URS 2009

1818          KK   CPE19
1819          KM        Combine DRE16 with E19
1820          HC       2  10.481
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1821          KK    DE19
1822          KM      Divert flow into E29
1823          KM        Natural divergence of flow due to a braided channel network.
1824          DT   DVE19
1825          DI       0      89     198     366     600     910    1172    2364    4042    6060
1826          DQ       0       0      10      39      92     174     354     850    1571    2457
              *

1827          KK   RDE19
1828          KM        Route flow from CP E19 to CP E30
1829          KM     URS 2009
1830          RS       6    FLOW      -1
1831          RC   0.050   0.045   0.050   13440  0.0064
1832          RX       0    1218    1286    1288    1296    1300    1332    3526
1833          RY  1409.8  1408.7  1408.1  1407.9  1407.9  1408.2  1408.4  1410.7
              *

1834          KK     E30   BASIN
1835          KM     URS 2009
1836          BA   0.637
1837          LG    0.35    0.35    4.40    0.37       0
1838          UI       0      89     297     474     690     445     264     109      53      19
1839          UI      19       0       0       0       0       0       0       0       0       0
1840          UI       0       0       0       0       0       0       0       0       0       0
1841          UI       0       0       0       0       0       0       0       0       0       0
              *

1842          KK   CPE30
1843          KM    URS 2009
1844          KM        Combine E31, E19 with E30
1845          HC       3   8.422
              *

1846          KK    DE30
1847          KM    URS 2009
1848          KM    Divert flow into E44
1849          KM        Flow is split between what passes through/over the structure and
1850          KM        what is diverted parallel to the railroad.
1851          KM    UPRR Structure 30-MP883.46 (3-20' Spans of Prestressed Concrete Slab (PCS))
1852          DT   DVE30
1853          DI       0    1030    1368    1800    3231    6609
1854          DQ       0    1030    1257    1433    1789    2817
              *

1855          KK  RCPE30
1856          KM    URS 2009
1857          KM        Route remainder flow from CP E30 to CP E38
1858          RS       3    FLOW      -1
1859          RC   0.050   0.045   0.050    2859  0.0031
1860          RX       0      10      16      95     105     350     500     760
1861          RY  1333.6  1333.9 1334.04 1334.55 1332.42 1333.75  1334.6    1336
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1862          KK     E28   BASIN
1863          KM     URS 2009
1864          BA   0.204
1865          LG    0.35    0.35    4.65    0.32       0
1866          UI       0      79     239     295     125      37      10       0       0       0
1867          UI       0       0       0       0       0       0       0       0       0       0
1868          UI       0       0       0       0       0       0       0       0       0       0
1869          UI       0       0       0       0       0       0       0       0       0       0
1870          UI       0       0       0       0       0       0       0       0       0       0
              *

1871          KK    DE28
1872          KM      Divert flow into E29
1873          KM        Natural divergence of flow due to a braided channel network.
1874          DT   DVE28
1875          DI       0     257    1038    2194    3666    5421    7434    9688   12167    1775
1876          DQ       0     155     585    1211    2004    2947    4026    5232    6558     954
              *

1877          KK  RCPE28
1878          KM        URS 2009
1879          KM        Route remainder flow from CP E28 to CP E20
1880          RS      14    FLOW      -1
1881          RC   0.050   0.045   0.050    7115  0.0059
1882          RX       0     242     312     328     351     371     523     524
1883          RY  1382.3  1381.3  1380.8  1380.8  1380.8  1380.9  1381.5  1381.5
              *

1884          KK     E21   BASIN
1885          KM     URS 2009
1886          KM        Customized XKSAT Values
1887          BA   0.349
1888          LG    0.35    0.35    3.25    0.76       0
1889          UI       0     114     334     512     265      84      26      15       0       0
```

```
1890          UI       0       0       0       0       0       0       0       0       0       0
1891          UI       0       0       0       0       0       0       0       0       0       0
1892          UI       0       0       0       0       0       0       0       0       0       0
1893          UI       0       0       0       0       0       0       0       0       0       0
              *

1894          KK    DE21
1895          KM      Divert flow into E20
1896          KM        Natural divergence of flow due to a braided channel network.
1897          DT   DVE21
1898          DI       0      41      91     216     444    1025    2232    3785    5647    7789
1899          DQ       0       0       6      28     109     359     887    1587    2438    3426
              *

1900          KK   RDE21
1901          KM        Route flow from CP E21 to CP E20
1902          KM     URS 2009
1903          RS      17    FLOW      -1
1904          RC   0.050   0.045   0.050   11991  0.0058
1905          RX       0     548     688     690     820     881     882    1456
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1906          RY  1407.1  1406.0  1405.9  1405.9  1405.9  1406.0  1406.0  1407.2
              *

1907          KK   DRE16
1908          KM        Return diverted flow from CP E16
1909          DR   DVE16
              *

1910          KK  RCPE16
1911          KM        Route remainder flow from CP E16 to CP E20
1912          KM     URS 2009
1913          RS      22    FLOW      -1
1914          RC   0.050   0.045   0.050   16012  0.0064
1915          RX       0     689     690     700     712     800     821    1456
1916          RY  1407.1  1405.9  1405.9  1405.9  1405.9  1405.9  1405.9  1407.2
              *

1917          KK     E20   BASIN
1918          KM     URS 2009
1919          BA   0.508
1920          LG    0.35    0.35    4.20    0.42       0
1921          UI       0      40     161     242     372     435     294     201      99      57
1922          UI      31      12      12       0       0       0       0       0       0       0
1923          UI       0       0       0       0       0       0       0       0       0       0
1924          UI       0       0       0       0       0       0       0       0       0       0
1925          UI       0       0       0       0       0       0       0       0       0       0
              *
1926          KM    URS 2009

1927          KK   CPE20
1928          KM        Combine E28, DRE21, DRE16 with E20
1929          HC       4   4.578
              *

1930          KK   DRE28
1931          KM        Return diverted flow from CP E28
1932          DR   DVE28
              *

1933          KK   RDE28
1934          KM        Route flow from CP E28 to CP E29
1935          KM     URS 2009
1936          RS       9    FLOW      -1
1937          RC   0.050   0.045   0.050     797  0.0056
1938          RX       0     575     616     692     766     766     766    1266
1939          RY  1391.3  1390.0  1389.9  1389.9  1390.1  1390.1  1390.1  1391.1
              *

1940          KK   DRE19
1941          KM        Return diverted flow from CP E19
1942          DR   DVE19
              *
1                                        HEC-1 INPUT                                                    PAGE 48

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

1943          KK  RCPE19
1944          KM        Route remainder flow from CP E19 to CP E29
1945          KM    URS 2009
1946          RS       7    FLOW      -1
1947          RC   0.050   0.045   0.050   10970  0.0065
1948          RX       0     500     700     750     800     900    1100    1600
1949          RY       6       4       2       0       0       2       4       6
              *

1950          KK     E29   BASIN
1951          KM     URS 2009
1952          BA   0.561
1953          LG    0.35    0.35    4.65    0.32       0
1954          UI       0      85     279     462     606     378     204      85      38      17
1955          UI      17       0       0       0       0       0       0       0       0       0
1956          UI       0       0       0       0       0       0       0       0       0       0
1957          UI       0       0       0       0       0       0       0       0       0       0
              *
1958          KM    URS 2009

1959          KK  CPE29A
1960          KM        Combine DRE28, DRE19 with E29
1961          HC       3   3.829
              *
1962          KM    URS 2009
```

```
1963          KK   CPE29
1964          KM        Combine E20 with E29
1965          HC       2   8.407
              *

1966          KK  RCPE29
1967          KM          URS 2009
1968          KM        Route flow from CP E29 to CP E38
1969          KM       Typical Sheet Flow Route
1970          RS       4     FLOW      -1
1971          RC   0.050   0.045   0.050    5934  0.0051
1972          RX       0     500     700     750     800     900    1100    1600
1973          RY       6       4       2       0       0       2       4       6
              *

1974          KK     E07   BASIN
1975          KM     URS 2009
1976          KM        Customized XKSAT Values
1977          BA   1.070
1978          LG    0.35    0.35    2.86    1.00       0
1979          UI       0     200     623    1134    1088     639     259     121      36      36
1980          UI       0       0       0       0       0       0       0       0       0       0
1981          UI       0       0       0       0       0       0       0       0       0       0
1982          UI       0       0       0       0       0       0       0       0       0       0
1983          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1984          KK  RCPE07
1985          KM        Route flow from CP E07 to CP E15
1986          KM    This is in the 10-foot contour area, used the EEC route.
1987          RS       4     FLOW      -1
1988          RC   0.050   0.045   0.050    9640  0.0074
1989          RX       0       9      30      40      50      70      90      99
1990          RY  1490.5 1488.25    1488    1486    1486    1488 1488.25  1490.5
              *

1991          KK     E14   BASIN
1992          KM     URS 2009
1993          KM        Customized XKSAT Values
1994          BA   0.816
1995          LG    0.35    0.35    2.99    0.91       0
1996          UI       0    1514    1498     143       0       0       0       0       0       0
1997          UI       0       0       0       0       0       0       0       0       0       0
1998          UI       0       0       0       0       0       0       0       0       0       0
1999          UI       0       0       0       0       0       0       0       0       0       0
              *

2000          KK  RCPE14
2001          KM        Route flow from CP E14 to CP E15
2002          KM    This is in the 10-foot contour area, used the EEC route.
2003          RS       3     FLOW      -1
2004          RC   0.050   0.045   0.050    5980  0.0051
2005          RX       0       9      40      50      60      80     110     119
2006          RY  1490.5 1488.25    1488    1486    1486    1488 1488.25  1490.5
              *

2007          KK     E15   BASIN
2008          KM     URS 2009
2009          KM        Customized XKSAT Values
2010          BA   0.922
2011          LG    0.35    0.35    3.35    0.70       0
2012          UI       0     315     926    1357     669     203      60       0       0       0
2013          UI       0       0       0       0       0       0       0       0       0       0
2014          UI       0       0       0       0       0       0       0       0       0       0
2015          UI       0       0       0       0       0       0       0       0       0       0
2016          UI       0       0       0       0       0       0       0       0       0       0
              *
2017          KM    URS 2009

2018          KK   CPE15
2019          KM        Combine E07, E14 with E15
2020          HC       3   2.808
              *

2021          KK  RCPE15
2022          KM        Route flow from CP E15 to CP E22
2023          KM    URS 2009
2024          RS      21     FLOW      -1
2025          RC   0.050   0.045   0.050   15473  0.0063
2026          RX       0     185     222     304     448     512     569    1187
2027          RY  1438.3  1437.7  1437.5  1437.6  1437.4  1437.6  1437.2  1438.7
              *
1                                          HEC-1 INPUT                                                PAGE 50

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

2028          KK     E27   BASIN
2029          KM     URS 2009
2030          BA   0.128
2031          LG    0.35    0.35    4.65    0.32       0
2032          UI       0      52     159     182      73      21       6       0       0       0
2033          UI       0       0       0       0       0       0       0       0       0       0
2034          UI       0       0       0       0       0       0       0       0       0       0
2035          UI       0       0       0       0       0       0       0       0       0       0
2036          UI       0       0       0       0       0       0       0       0       0       0
              *

2037          KK  RCPE27
2038          KM        Route flow from CP E27 to CP E22
2039          KM     URS 2009
```

```
2040          RS       7    FLOW      -1
2041          RC   0.050   0.045   0.050    2590  0.0062
2042          RX       0     638     696     700     724     785     942    1445
2043          RY  1383.4  1382.0  1382.0  1382.0  1382.0  1382.0  1382.2  1383.3
              *

2044          KK   DRE21
2045          KM        Return diverted flow from CP E21
2046          DR   DVE21
              *

2047          KK  RCPE21
2048          KM    URS 2009
2049          KM        Route flow from CP E21 to CP E22
2050          RS      38    FLOW      -1
2051          RC   0.050   0.045   0.050    9499  0.0065
2052          RX       0     209     212     310     350     413     414     415
2053          RY  1421.8  1421.6  1421.6  1421.6  1421.7  1421.9  1421.9  1421.9
              *

2054          KK     E22   BASIN
2055          KM     URS 2009
2056          KM        Customized XKSAT Values
2057          BA   1.103
2058          LG    0.35    0.35    3.95    0.47       0
2059          UI       0      98     376     565     918     904     614     397     177     109
2060          UI      46      27      27       0       0       0       0       0       0       0
2061          UI       0       0       0       0       0       0       0       0       0       0
2062          UI       0       0       0       0       0       0       0       0       0       0
2063          UI       0       0       0       0       0       0       0       0       0       0
              *
2064          KM    URS 2009

2065          KK   CPE22
2066          KM        Combine E15, E27, E21 with E22
2067          HC       4   4.102
              *
```



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

2068          KK  RCPE22
2069          KM        URS 2009
2070          KM        Route flow from CP E22 to CP E37
2071          RS       6    FLOW      -1
2072          RC   0.050   0.045   0.050    4296  0.0056
2073          RX       0     749     787     809     886     926    1116    1617
2074          RY  1363.3  1362.4  1362.2  1362.3  1362.2  1362.2  1362.5  1363.5
              *

2075          KK     E37   BASIN
2076          KM     URS 2009
2077          BA   0.182
2078          LG    0.35    0.35    4.65    0.32       0
2079          UI       0     143     382     148      25       0       0       0       0       0
2080          UI       0       0       0       0       0       0       0       0       0       0
2081          UI       0       0       0       0       0       0       0       0       0       0
2082          UI       0       0       0       0       0       0       0       0       0       0
2083          UI       0       0       0       0       0       0       0       0       0       0
              *
2084          KM    URS 2009

2085          KK   CPE37
2086          KM        Combine E22 with E37
2087          HC       2   4.284
              *

2088          KK  RCPE37
2089          KM        Route flow from CP E37 to CP E38
2090          KM    URS 2009
2091          RS       3    FLOW      -1
2092          RC   0.050   0.045   0.050    4260  0.0053
2093          RX       0     500     700     750     800     900    1100    1600
2094          RY       6       4       2       0       0       2       4       6
              *

2095          KK     E04   BASIN
2096          KM     URS 2009
2097          KM        Customized XKSAT Values
2098          BA   1.771
2099          LG    0.35    0.35    2.91    0.97       0
2100          UI       0     747    2322    2464     951     263      87       0       0       0
2101          UI       0       0       0       0       0       0       0       0       0       0
2102          UI       0       0       0       0       0       0       0       0       0       0
2103          UI       0       0       0       0       0       0       0       0       0       0
2104          UI       0       0       0       0       0       0       0       0       0       0
              *

2105          KK  RCPE04
2106          KM        Route flow from CP E04 to CP E05
2107          KM    This is in the 10-foot contour area, used the EEC route.
2108          RS      27    FLOW      -1
2109          RC   0.050   0.045   0.050   31530  0.0090
2110          RX       0     100     200     240     250     290     410     530
2111          RY    1471    1469    1469    1468    1468    1469    1469    1471
              *
```



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

2112          KK     E06   BASIN
2113          KM     URS 2009
2114          KM        Customized XKSAT Values
2115          BA   1.056
```

```
2116          LG    0.35    0.35    2.89    0.98       0
2117          UI       0     549    1723    1312     381      87       0       0       0       0
2118          UI       0       0       0       0       0       0       0       0       0       0
2119          UI       0       0       0       0       0       0       0       0       0       0
2120          UI       0       0       0       0       0       0       0       0       0       0
2121          UI       0       0       0       0       0       0       0       0       0       0
              *

2122          KK  RCPE06
2123          KM        Route flow from CP E06 to CP E05
2124          KM    This is in the 10-foot contour area, used the EEC route.
2125          RS      19    FLOW      -1
2126          RC   0.050   0.045   0.050   19520  0.0080
2127          RX       0     100     200     240     250     290     410     530
2128          RY  1470.5    1469    1469    1468    1468    1469    1469  1470.5
              *

2129          KK     E11   BASIN
2130          KM     URS 2009
2131          KM        Customized XKSAT Values
2132          BA   2.267
2133          LG    0.35    0.35    3.11    0.84       0
2134          UI       0     250     887    1348    2238    1727    1143     594     295     144
2135          UI      61      61       0       0       0       0       0       0       0       0
2136          UI       0       0       0       0       0       0       0       0       0       0
2137          UI       0       0       0       0       0       0       0       0       0       0
              *

2138          KK    DE11
2139          KM      Divert flow into E12
2140          KM        Natural divergence of flow due to a braided channel network.
2141          DT   DVE11
2142          DI       0      32     130     326     648     922    1642    2906    4664    7677
2143          DQ       0      10      42     111     233     330     659    1302    2172    3568
              *

2144          KK  RCPE11
2145          KM        Route remainder flow from CP E11 to CP E05
2146          KM    This is in the 10-foot contour area, used the EEC route.
2147          RS       8    FLOW      -1
2148          RC   0.050   0.045   0.050    8860  0.0058
2149          RX       0     100     200     240     250     290     410     530
2150          RY  1470.5    1469    1469    1468    1468    1469    1469  1470.5
              *
```



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

2151          KK     E09   BASIN
2152          KM     URS 2009
2153          KM        Customized XKSAT Values
2154          BA   0.303
2155          LG    0.35    0.35    2.92    0.96       0
2156          UI       0     242     638     243      40       0       0       0       0       0
2157          UI       0       0       0       0       0       0       0       0       0       0
2158          UI       0       0       0       0       0       0       0       0       0       0
2159          UI       0       0       0       0       0       0       0       0       0       0
2160          UI       0       0       0       0       0       0       0       0       0       0
              *

2161          KK    DE09
2162          KM      Divert flow into E13
2163          KM        Natural divergence of flow due to a braided channel network.
2164          DT   DVE09
2165          DI       0      22      90     197     422     756    1421    2780    4781    6794
2166          DQ       0       8      37      85     190     349     673    1336    2304    3291
              *

2167          KK  RCPE09
2168          KM        Route remainder flow from CP E09 to CP E10
2169          KM    This is in the 10-foot contour area, used the EEC route.
2170          RS       3    FLOW      -1
2171          RC   0.050   0.045   0.050    2830  0.0110
2172          RX       0     100     185     195     200     210     300     400
2173          RY    1530    1529    1529    1528    1528    1529    1529    1530
              *

2174          KK     E10   BASIN
2175          KM     URS 2009
2176          KM        Customized XKSAT Values
2177          BA   0.098
2178          LG    0.35    0.35    3.55    0.61       0
2179          UI       0     126     218      31       0       0       0       0       0       0
2180          UI       0       0       0       0       0       0       0       0       0       0
2181          UI       0       0       0       0       0       0       0       0       0       0
2182          UI       0       0       0       0       0       0       0       0       0       0
2183          UI       0       0       0       0       0       0       0       0       0       0
              *
2184          KM    URS 2009

2185          KK   CPE10
2186          KM        Combine E09 with E10
2187          HC       2   0.268
              *

2188          KK    DE10
2189          KM      Divert flow into E13
2190          KM        Natural divergence of flow due to a braided channel network.
2191          DT   DVE10
2192          DI       0      34     132     283     683    1405    2576    4977    7479   10398
2193          DQ       0      25      95     199     453     917    1597    2901    4193    5679
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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2194          KK  RCPE10
2195          KM        Route remainder flow from CP E10 to CP E05
2196          KM    This is in the 10-foot contour area, used the EEC route.
2197          RS      14     FLOW      -1
2198          RC   0.050   0.045   0.050   11570  0.0071
2199          RX       0     100     200     240     250     290     410     530
2200          RY    1470    1469    1469    1468    1468    1469    1469    1470
              *

2201          KK     E05   BASIN
2202          KM     URS 2009
2203          KM        Customized XKSAT Values
2204          BA   4.177
2205          LG    0.35    0.35    3.21    0.78       0
2206          UI       0     211     434     919    1189    1481    2039    2563    1950    1563
2207          UI    1223     935     524     358     265     201      65      65      65      65
2208          UI       0       0       0       0       0       0       0       0       0       0
              *
2209          KM    URS 2009

2210          KK   CPE05
2211          KM        Combine E04, E06, E11, E10 with E05
2212          HC       5   8.462
              *

2213          KK    DE05
2214          KM      Divert flow into E25
2215          KM     FLOW-2D 2009
2216          KM        Natural divergence of flow due to a braided channel network.
2217          DT   DVE05
2218          DI       0      97     239     454     676     869    1147    1534    1901    2244
2219          DQ       0      97     208     333     466     578     741     961    1170    1364
              *

2220          KK   RDE05
2221          KM        Route flow from CP E05 to CP E24
2222          KM     URS 2009
2223          RS      11     FLOW      -1
2224          RC   0.050   0.045   0.050    8455  0.0054
2225          RX       0     147     302     359     380     407     717    1012
2226          RY  1425.5  1425.2  1424.4  1424.0  1424.0  1424.0  1425.9  1426.9
              *

2227          KK   DRE09
2228          KM        Return diverted flow from CP E09
2229          DR   DVE09
              *

2230          KK   RDE09
2231          KM    This is in the 10-foot contour area, used the EEC route.
2232          KM        Route flow from CP E09 to CP E13
2233          RS      16     FLOW      -1
2234          RC   0.050   0.045   0.050   17190  0.0076
2235          RX       0     100     200     220     225     245     345     445
```



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

2236          RY  1480.5    1479    1479    1478    1478    1479    1479  1480.5
              *

2237          KK   DRE10
2238          KM        Return diverted flow from CP E10
2239          DR   DVE10
              *

2240          KK   RDE10
2241          KM    This is in the 10-foot contour area, used the EEC route.
2242          KM        Route flow from CP E10 to CP E13
2243          RS      26     FLOW      -1
2244          RC   0.050   0.045   0.050   14450  0.0069
2245          RX       0     100     200     220     225     245     345     445
2246          RY    1480    1479    1479    1478    1478    1479    1479    1480
              *

2247          KK     E13   BASIN
2248          KM     URS 2009
2249          KM        Customized XKSAT Values
2250          BA   1.531
2251          LG    0.35    0.35    3.95    0.47       0
2252          UI       0     118     479     718    1098    1316     892     614     309     177
2253          UI      98      36      36      36       0       0       0       0       0       0
2254          UI       0       0       0       0       0       0       0       0       0       0
2255          UI       0       0       0       0       0       0       0       0       0       0
2256          UI       0       0       0       0       0       0       0       0       0       0
              *

2257          KK   CPE13
2258          KM        Combine DRE09, DRE10 with E13
2259          HC       3   1.932
              *

2260          KK    DE13
2261          KM      Divert flow into E23
2262          KM        Natural divergence of flow due to a braided channel network.
2263          DT   DVE13
2264          DI       0       7      94     560    1442    2739    4362    6275    8456
2265          DQ       0       0       1      89     391     939    1661    2536    3550
              *

2266          KK  RCPE13
2267          KM        Route remainder flow from CP E13 to CP E24
2268          KM     URS 2009
2269          RS       4     FLOW      -1
```

```
2270          RC   0.050   0.045   0.050    5104  0.0059
2271          RX       0     500     700     750     800     900    1100    1600
2272          RY       6       4       2       0       0       2       4       6
              *
```



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

2273          KK     E24   BASIN
2274          KM     URS 2009
2275          BA   0.261
2276          LG    0.35    0.35    4.35    0.39       0
2277          UI       0      47     147     262     271     161      69      33       9       9
2278          UI       0       0       0       0       0       0       0       0       0       0
2279          UI       0       0       0       0       0       0       0       0       0       0
2280          UI       0       0       0       0       0       0       0       0       0       0
              *
2281          KM    URS 2009

2282          KK   CPE24
2283          KM        Combine DRE05, E13 with E24
2284          HC       3   4.698
              *

2285          KK  RCPE24
2286          KM        Route flow from CP E24 to CP E34
2287          KM     URS 2009
2288          RS       1    FLOW      -1
2289          RC   0.050   0.045   0.050    1512  0.0060
2290          RX       0     500     700     750     800     900    1100    1600
2291          RY       6       4       2       0       0       2       4       6
              *

2292          KK     E08   BASIN
2293          KM     URS 2009
2294          KM        Customized XKSAT Values
2295          BA   0.959
2296          LG    0.35    0.35    3.29    0.74       0
2297          UI       0      95     349     527     876     757     511     307     137      81
2298          UI      25      25       0       0       0       0       0       0       0       0
2299          UI       0       0       0       0       0       0       0       0       0       0
2300          UI       0       0       0       0       0       0       0       0       0       0
              *

2301          KK  RCPE08
2302          KM        Route flow from CP E08 to CP E23
2303          KM     URS 2009
2304          RS      18    FLOW      -1
2305          RC   0.050   0.045   0.050   10345  0.0063
2306          RX       0       5      62     189     336     459     466     467
2307          RY  1428.0  1428.0  1428.0  1427.6 1427.5  1428.0  1428.0  1428.0
              *

2308          KK   DRE13
2309          KM        Return diverted flow from CP E13
2310          DR   DVE13
              *
```



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

2311          KK   RDE13
2312          KM        Route flow from CP E13 to CP E23
2313          KM     URS 2009
2314          RS       3    FLOW      -1
2315          RC   0.050   0.045   0.050    6485  0.0060
2316          RX       0     119     264     383     383     411     657     664
2317          RY  1412.6  1412.6  1412.5  1412.1  1412.1  1412.1  1412.7  1412.7
              *

2318          KK     E23   BASIN
2319          KM     URS 2009
2320          BA   0.325
2321          LG    0.35    0.35    4.65    0.32       0
2322          UI       0      52     168     284     351     213     107      47      18      10
2323          UI       0       0       0       0       0       0       0       0       0       0
2324          UI       0       0       0       0       0       0       0       0       0       0
2325          UI       0       0       0       0       0       0       0       0       0       0
2326          UI       0       0       0       0       0       0       0       0       0       0
              *
2327          KM    URS 2009

2328          KK   CPE23
2329          KM        Combine E08, DRE13, CPE24 with E23
2330          HC       4   6.279
              *

2331          KK  RCPE23
2332          KM        Route flow from CP E23 to CP E34
2333          KM     URS 2009
2334          RS       2    FLOW      -1
2335          RC   0.050   0.045   0.050    1512  0.0060
2336          RX       0     510     546     640     651     797     922    1425
2337          RY  1362.8  1361.8  1361.8  1361.6  1361.5  1361.7  1361.9  1362.9
              *

2338          KK     E34   BASIN
2339          KM     URS 2009
2340          BA   0.268
2341          LG    0.35    0.35    4.65    0.32       0
2342          UI       0      63     191     346     246     120      45      14      10       0
2343          UI       0       0       0       0       0       0       0       0       0       0
2344          UI       0       0       0       0       0       0       0       0       0       0
2345          UI       0       0       0       0       0       0       0       0       0       0
```

```
2346          UI       0       0       0       0       0       0       0       0       0       0
              *
2347          KM    URS 2009

2348          KK   CPE34
2349          KM        Combine E23 with E34
2350          HC       2   6.547
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


2351          KK  RCPE34
2352          KM        Route flow from CP E34 to CP E38
2353          KM     URS 2009
2354          RS       3    FLOW      -1
2355          RC   0.050   0.045   0.050    4360  0.0053
2356          RX       0     500     700     750     800     900    1100    1600
2357          RY       6       4       2       0       0       2       4       6
              *

2358          KK     E38   BASIN
2359          KM     URS 2009
2360          BA   0.480
2361          LG    0.35    0.35    4.30    0.40       0
2362          UI       0     202     629     668     258      71      24       0       0       0
2363          UI       0       0       0       0       0       0       0       0       0       0
2364          UI       0       0       0       0       0       0       0       0       0       0
2365          UI       0       0       0       0       0       0       0       0       0       0
              *
2366          KM    URS 2009

2367          KK   CPE38
2368          KM        Combine E30, E29A, E37, E34 with E38
2369          HC       5  19.718
              *

2370          KK    DE38
2371          KM    URS 2009
2372          KM    Divert flow into E44
2373          KM        Flow is split between what passes through/over the structure and
2374          KM        what is diverted parallel to the railroad.
2375          KM    UPRR Structure 31-MP884 (3-72" SSP's)
2376          DT   DVE38
2377          DI       0     271     420     626     875    1747    3716    7914
2378          DQ       0     271     401     544     693     841    1011    1788
              *

2379          KK  RCPE38
2380          KM        Route flow from CP E38 to CP E44
2381          KM        Crossing at SR-238
2382          KM     URS 2009
2383          RS       3    FLOW      -1
2384          RC   0.050   0.045   0.050    7038  0.0051
2385          RX       0    1050    1062    1243    1244    1432    1476    2810
2386          RY  1319.1  1318.1  1318.1  1318.0  1318.0  1317.5  1317.6  1319.8
              *

2387          KK   DRE11
2388          KM        Return diverted flow from CP E11
2389          DR   DVE11
              *
1                                        HEC-1 INPUT                                                PAGE 59

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


2390          KK   RDE11
2391          KM        Route flow from CP E11 to CP E12
2392          RS      12    FLOW      -1
2393          RC   0.050   0.045   0.050   13860  0.0065
2394          RX       0     125     250     280     310     340     490     640
2395          RY    1490    1489    1488    1487    1487    1488    1489    1490
              *

2396          KK     E12   BASIN
2397          KM     URS 2009
2398          KM        Customized XKSAT Values
2399          BA   1.048
2400          LG    0.35    0.34    3.78    0.53       0
2401          UI       0     147     488     780    1136     732     434     179      87      31
2402          UI      31       0       0       0       0       0       0       0       0       0
2403          UI       0       0       0       0       0       0       0       0       0       0
2404          UI       0       0       0       0       0       0       0       0       0       0
              *
2405          KM    URS 2009

2406          KK   CPE12
2407          KM        Combine DRE11 with E12
2408          HC       2   1.932
              *

2409          KK  RCPE12
2410          KM        Route flow from CP E12 to CP E25
2411          KM     URS 2009
2412          RS      25    FLOW      -1
2413          RC   0.050   0.045   0.050   15780  0.0053
2414          RX       0     159     175     200     250     300     329     435
2415          RY  1397.4  1396.0  1396.0  1396.0  1396.0  1396.0  1396.0  1396.4
              *

2416          KK   DRE05
2417          KM        Return diverted flow from CP E05
2418          DR   DVE05
              *
```

```
2419          KK  RCPE05
2420          KM       Route remainder flow from CP E05 to CP E25
2421          KM     URS 2009
2422          RS      27    FLOW      -1
2423          RC   0.050   0.045   0.050   21390  0.0063
2424          RX       0     642     675     700     750     850     881    1457
2425          RY  1433.4  1432.0  1432.0  1432.0  1432.0  1432.0  1432.0  1433.3
              *

2426          KK     E25   BASIN
2427          KM     URS 2009
2428          BA   1.638
2429          LG    0.35    0.35    4.15    0.43       0
2430          UI       0     104     321     545     718    1084    1146     827     611     419
2431          UI     206     146      93      32      32      32       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE 60

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

2432          UI       0       0       0       0       0       0       0       0       0       0
2433          UI       0       0       0       0       0       0       0       0       0       0
2434          UI       0       0       0       0       0       0       0       0       0       0
              *
2435          KM    URS 2009

2436          KK   CPE25
2437          KM       Combine E12, E05, E38 with E25
2438          HC       4  21.774
              *

2439          KK    DE25
2440          KM    URS 2009
2441          KM    Divert flow into E45
2442          KM       Flow is split between what passes through/over the structure and
2443          KM       what is diverted parallel to the railroad.
2444          KM    UPRR Structures 32 and 33 (3-72" SSP's and 3-30' Prestressed Concrete Boxes a
2445          DT   DVE25
2446          DI       0      21     215     644    1096    1982    3881    7565   13748   23631
2447          DQ       0      21     210     588     983    1378    1764    2138    2495    3090
              *

2448          KK  RCPE25
2449          KM    URS 2009
2450          KM       Route remainder flow from CP E25 to CP E36
2451          RS       1    FLOW      -1
2452          RC   0.050   0.045   0.050    1183  0.0042
2453          RX       0       5       7      87     101     500     600     832
2454          RY  1318.5 1319.75 1320.28 1320.36 1313.48  1317.3 1318.24    1320
              *

2455          KK     E26   BASIN
2456          KM     URS 2009
2457          BA   0.253
2458          LG    0.35    0.35    4.65    0.32       0
2459          UI       0      95     287     368     161      49      12       0       0       0
2460          UI       0       0       0       0       0       0       0       0       0       0
2461          UI       0       0       0       0       0       0       0       0       0       0
2462          UI       0       0       0       0       0       0       0       0       0       0
              *

2463          KK  RCPE26
2464          KM       Route flow from CP E26 to CP E35
2465          KM     URS 2009; Typical Section;
2466          RS       7    FLOW      -1
2467          RC   0.050   0.045   0.050    6112  0.0056
2468          RX       0     500     700     750     800     900    1100    1600
2469          RY       6       4       2       0       0       2       4       6
              *
1                                          HEC-1 INPUT                                          PAGE 61

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

2470          KK     E35   BASIN
2471          KM     URS 2009
2472          BA   0.366
2473          LG    0.35    0.35    4.65    0.32       0
2474          UI       0     179     566     470     152      35       0       0       0       0
2475          UI       0       0       0       0       0       0       0       0       0       0
2476          UI       0       0       0       0       0       0       0       0       0       0
2477          UI       0       0       0       0       0       0       0       0       0       0
              *

2478          KK   CPE35
2479          KM       Combine E26 with E35
2480          HC       2   0.690
              *

2481          KK    DE35
2482          KM      Divert flow into E54
2483          KM       Natural divergence of flow due to a braided channel network.
2484          DT   DVE35
2485          DI       0      20      50     100     200     400     800    1600    3200    6400
2486          DQ       0      10      25      50     100     200     400     800    1600    3200
              *

2487          KK  RCPE35
2488          KM       Route remainder flow from CP E35 to CP E36
2489          KM     URS 2009
2490          RS       8    FLOW      -1
2491          RC   0.050   0.045   0.050    5068  0.0055
2492          RX       0     500     700     750     800     900    1100    1600
2493          RY       6       4       2       0       0       2       4       6
              *
```

```
2494          KK     E36   BASIN
2495          KM     URS 2009
2496          BA   0.163
2497          LG    0.35    0.35    4.10    0.44       0
2498          UI       0      96     293     185      45      10       0       0       0       0
2499          UI       0       0       0       0       0       0       0       0       0       0
2500          UI       0       0       0       0       0       0       0       0       0       0
2501          UI       0       0       0       0       0       0       0       0       0       0
2502          UI       0       0       0       0       0       0       0       0       0       0
              *

2503          KK   CPE36
2504          KM    URS 2009
2505          KM        Combine E25, E35 with E36
2506          HC       3   6.443
              *
```



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

2507          KK    DE36
2508          KM    URS 2009
2509          KM    Divert flow into E45
2510          KM        Flow is split between what passes through/over the structure and
2511          KM        what is diverted parallel to the railroad.
2512          KM    UPRR Structure 34-MP884.73 (2-48" SSP's).
2513          DT   DVE36
2514          DI       1      92     270     918    2319    4700    8265   13113   20023
2515          DQ       0       0      20      41      78     127     180     231     415
              *

2516          KK  RCPE36
2517          KM    URS 2009
2518          KM        Route remainder flow from CP E36 to CP E54
2519          RS       3    FLOW      -1
2520          RC   0.050   0.045   0.050    1425  0.0038
2521          RX       0       6      12      90      99     600     750     950
2522          RY  1312.6  1313.5 1315.02 1315.43 1309.85 1313.47  1314.6    1316
              *

2523          KK   DRE35
2524          KM        Return diverted flow from CP E35
2525          DR   DVE35
              *

2526          KK   RDE35
2527          KM        Route flow from CP E35 to CP E54
2528          KM     URS 2009; Typical Section
2529          RS       1    FLOW      -1
2530          RC   0.050   0.045   0.050    5829  0.0055
2531          RX       0     500     700     750     800     900    1100    1600
2532          RY       6       4       2       0       0       2       4       6
              *

2533          KK     E54   BASIN
2534          KM     URS 2009
2535          BA   0.122
2536          LG    0.35    0.35    4.50    0.35       0
2537          UI       0      61     192     155      48      11       0       0       0       0
2538          UI       0       0       0       0       0       0       0       0       0       0
2539          UI       0       0       0       0       0       0       0       0       0       0
2540          UI       0       0       0       0       0       0       0       0       0       0
2541          UI       0       0       0       0       0       0       0       0       0       0
              *

2542          KK   CPE54
2543          KM    URS 2009
2544          KM        Combine Basin E54, RCPE36, and RDE35
2545          HC       3   6.400
              *
```



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

2546          KK    DE54
2547          KM    URS 2009
2548          KM    Divert flow into E46
2549          KM        Flow is split between what passes through/over the structure and
2550          KM        what is diverted parallel to the railroad.
2551          KM    UPRR Structure 35-MP884.97 (3-48" SSP's)
2552          DT   DVE54
2553          DI       0      38      99     232     762    2095    4591    8808
2554          DQ       0      38      83     151     230     309     375     625
              *

2555          KK  RCPE54
2556          KM    URS 2009
2557          KM        Route remainder flow from CP E54 to CP F26
2558          RS       3    FLOW      -1
2559          RC   0.050   0.045   0.050    1760  0.0017
2560          RX       0       5      10      85      96     500     750     815
2561          RY  1307.3    1308 1309.73 1310.53 1306.05  1309.4  1311.5    1312
              * ******************************************************************************
              *      Runoff Watershed F (south of SR-238/Railroad) divert all flows north of r
              *      and route remainder east along Highway, ultimately into the storage ponds
              *      in subbasins F25, F27, F28, F36, F29 and F20.  At F20 all the flow is rou
              *      through the structure or over the railroad.
              *
              *      Beginning at F31 (Waterman Wash) runoff from the east side (Watershed G)
              *      to the total flow (denoted RIV in the nomenclature)
              * ******************************************************************************

2562          KK     F26   BASIN
2563          KM     URS 2009
```

```
2564          BA   0.495
2565          LG    0.35     0.35     4.65     0.32        0
2566          UI       0       94      291      534      500      292      117       53       17       17
2567          UI       0        0        0        0        0        0        0        0        0        0
2568          UI       0        0        0        0        0        0        0        0        0        0
2569          UI       0        0        0        0        0        0        0        0        0        0
2570          UI       0        0        0        0        0        0        0        0        0        0
              *
2571          KM    URS 2009

2572          KK   CPF26
2573          KM        Combine Basin F26 and RCPE54
2574          HC       2   4.380
              *

2575          KK    DF26
2576          KM    URS 2009
2577          KM    Divert flow into F35
2578          KM        Flow is split between what passes through/over the structure and
2579          KM        what is diverted parallel to the railroad.
2580          KM    UPRR Structure 36-MP885.29 (3-48" SSP's)
2581          DT   DVF26
2582          DI       0       53      153      365      634     1558     3545     7569
2583          DQ       0       53      115      190      270      342      488     1438
              *
```



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

2584          KK  RCPF26
2585          KM    URS 2009
2586          KM        Route remainder flow from CP F26 to CP F25
2587          RS      14    FLOW      -1
2588          RC   0.050   0.045   0.050    1492  0.0027
2589          RX       0       5     8.3     105     113     400     750     900
2590          RY  1305.1 1305.75 1306.68  1306.2 1302.85 1304.73  1307.1    1308
              *

2591          KK     F14   BASIN
2592          KM     URS 2009
2593          KM    Customized XKSAT Values
2594          BA   0.388
2595          LG    0.35     0.35     3.09     0.85        0
2596          UI       0      244      727      415       90       23        0        0        0        0
2597          UI       0        0        0        0        0        0        0        0        0        0
2598          UI       0        0        0        0        0        0        0        0        0        0
2599          UI       0        0        0        0        0        0        0        0        0        0
2600          UI       0        0        0        0        0        0        0        0        0        0
              *

2601          KK  RCPF14
2602          KM        Route flow from CP F14 to CP F15
2603          KM      URS 2009; Typical Section
2604          RS       7    FLOW      -1
2605          RC   0.050   0.045   0.050    8348  0.0066
2606          RX       0     500     700     750     800     900    1100    1600
2607          RY       6       4       2       0       0       2       4       6
              *

2608          KK     F13   BASIN
2609          KM     URS 2009
2610          KM    Customized XKSAT Values
2611          BA   0.260
2612          LG    0.35     0.35     2.97     0.92        0
2613          UI       0      287      586      117        0        0        0        0        0        0
2614          UI       0        0        0        0        0        0        0        0        0        0
2615          UI       0        0        0        0        0        0        0        0        0        0
2616          UI       0        0        0        0        0        0        0        0        0        0
2617          UI       0        0        0        0        0        0        0        0        0        0
              *

2618          KK    DF13
2619          KM      Divert flow into F12
2620          KM        Natural divergence of flow due to a braided channel network.
2621          DT   DVF13
2622          DI       0       23       96      371     1090     2412     4125     6119     8417
2623          DQ       0       17       68      158      447     1147     2078     3148     4392
              *
```



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

2624          KK   RDF13
2625          KM        Route flow from CP F13 to CP F15
2626          RS       2    FLOW      -1
2627          RC   0.050   0.045   0.050    9300  0.0064
2628          RX       0     100     200     215     225     240     365     490
2629          RY    1390    1389    1389    1388    1388    1389    1389    1390
              *

2630          KK   DRF13
2631          KM        Return diverted flow from CP F13
2632          DR   DVF13
              *

2633          KK  RCPF13
2634          KM        Route remainder flow from CP F13 to CP F12
2635          KM      URS 2009 ; Typical Section
2636          RS      13    FLOW      -1
2637          RC   0.050   0.045   0.050    1730  0.0059
2638          RX       0     500     700     750     800     900    1100    1600
2639          RY       6       4       2       0       0       2       4       6
              *
```

```
2640        KK     F12   BASIN
2641        KM     URS 2009
2642        KM    Customized XKSAT Values
2643        BA   0.312
2644        LG    0.35    0.35    3.05    0.88       0
2645        UI       0     215     615     300      60       0       0       0       0       0
2646        UI       0       0       0       0       0       0       0       0       0       0
2647        UI       0       0       0       0       0       0       0       0       0       0
2648        UI       0       0       0       0       0       0       0       0       0       0
2649        UI       0       0       0       0       0       0       0       0       0       0
            *
2650        KM    URS 2009

2651        KK   CPF12
2652        KM        Combine F13 with F12
2653        HC       2   0.439
            *

2654        KK  RCPF12
2655        KM        Route flow from CP F12 to CP F11
2656        KM     URS 2009; Typical Section
2657        RS       7    FLOW      -1
2658        RC   0.050   0.045   0.050    7741  0.0065
2659        RX       0     500     700     750     800     900    1100    1600
2660        RY       6       4       2       0       0       2       4       6
            *
```



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

2661        KK     F15   BASIN
2662        KM     URS 2009
2663        BA   0.784
2664        LG    0.35    0.35    4.40    0.37       0
2665        UI       0     138     436     774     819     488     213     102      29      26
2666        UI       0       0       0       0       0       0       0       0       0       0
2667        UI       0       0       0       0       0       0       0       0       0       0
2668        UI       0       0       0       0       0       0       0       0       0       0
2669        UI       0       0       0       0       0       0       0       0       0       0
            *
2670        KM    URS 2009

2671        KK   CPF15
2672        KM        Combine DRF13, F14, F12 with F15
2673        HC       4   1.744
            *

2674        KK  RCPF15
2675        KM        Route flow from CP F15 to CP F25
2676        RS      18    FLOW      -1
2677        RC   0.050   0.045   0.050   14254  0.0053
2678        RX       0     588     686     765     857     889    1028    1604
2679        RY  1363.2    1362  1361.7  1361.5  1361.8  1361.9  1362.1  1363.5
            *

2680        KK     F11   BASIN
2681        KM     URS 2009
2682        KM    Customized XKSAT Values
2683        BA   1.485
2684        LG    0.35    0.35    3.01    0.90       0
2685        UI       0     241     777    1323    1598     965     474     210      80      47
2686        UI       0       0       0       0       0       0       0       0       0       0
2687        UI       0       0       0       0       0       0       0       0       0       0
2688        UI       0       0       0       0       0       0       0       0       0       0
2689        UI       0       0       0       0       0       0       0       0       0       0
            *

2690        KK    DF11
2691        KM      Divert flow into F17
2692        KM        Natural divergence of flow due to a braided channel network.
2693        DT   DVF11
2694        DI       0      43     182     744    1996    3920    6343    9203   12467
2695        DQ       0      13      59     288     785    1525    2446    3530    4764
            *

2696        KK  RCPF11
2697        KM        Route remainder flow from CP F11 to CP F16
2698        KM       Typical Sheet Flow Route
2699        RS       3    FLOW      -1
2700        RC   0.050   0.045   0.050    3487  0.0054
2701        RX       0     500     700     750     800     900    1100    1600
2702        RY       6       4       2       0       0       2       4       6
            *
```



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

2703        KK     F16   BASIN
2704        KM     URS 2009
2705        BA   0.110
2706        LG    0.35    0.35    4.60    0.33       0
2707        UI       0      99     240      74      11       0       0       0       0       0
2708        UI       0       0       0       0       0       0       0       0       0       0
2709        UI       0       0       0       0       0       0       0       0       0       0
2710        UI       0       0       0       0       0       0       0       0       0       0
            *
2711        KM    URS 2009

2712        KK   CPF16
2713        KM        Combine F11 with F16
2714        HC       2   1.016
            *

2715        KK    DF16
```

```
2716          KM      Divert flow into F24
2717          KM        Natural divergence of flow due to a braided channel network.
2718          DT   DVF16
2719          DI       0       21       90      219      746     1987     3664     5722     8125
2720          DQ       0       10       38       85      287      764     1406     2193     3112
              *

2721          KK   RDF16
2722          KM        Route flow from CP F16 to CP F25
2723          KM     URS 2009; Typical XS
2724          RS       8     FLOW       -1
2725          RC   0.050    0.045    0.050     9334   0.0047
2726          RX       0      500      700      750      800      900     1100     1600
2727          RY       6        4        2        0        0        2        4        6
              *

2728          KK     F25   BASIN
2729          KM     URS 2009
2730          BA   2.994
2731          LG    0.35     0.35     4.40     0.37        1
2732          UI       0      187      560      969     1268     1867     2134     1533     1142      813
2733          UI     405      286      187       64       57       57       57        0        0        0
2734          UI       0        0        0        0        0        0        0        0        0        0
2735          UI       0        0        0        0        0        0        0        0        0        0
2736          UI       0        0        0        0        0        0        0        0        0        0
              *
2737          KM    URS 2009

2738          KK   CPF25
2739          KM        Combine F15, DRF16, F26 with F25
2740          HC       4   7.110
              *
```



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

2741          KK   DRF11
2742          KM        Return diverted flow from CP F11
2743          DR   DVF11
              *

2744          KK   RDF11
2745          KM        Route flow from CP F11 to CP F17
2746          KM     URS 2009
2747          RS       6     FLOW       -1
2748          RC   0.050    0.045    0.050     3949   0.0046
2749          RX       0      129      445      491      551      942     1047     1111
2750          RY  1376.5     1376     1376  1375.86     1376     1376   1376.3   1376.4
              *

2751          KK     F17   BASIN
2752          KM     URS 2009
2753          KM    Customized XKSAT Values
2754          BA   1.159
2755          LG    0.35     0.35     3.35     0.70        2
2756          UI       0      273      829     1504     1061      514      193       60       43        0
2757          UI       0        0        0        0        0        0        0        0        0        0
2758          UI       0        0        0        0        0        0        0        0        0        0
2759          UI       0        0        0        0        0        0        0        0        0        0
2760          UI       0        0        0        0        0        0        0        0        0        0
              *
2761          KM    URS 2009

2762          KK   CPF17
2763          KM        Combine DRF11 with F17
2764          HC       2    1.73
              *

2765          KK  RCPF17
2766          KM        Route flow from CP F17 to CP F24
2767          KM     URS 2009 ; Typical XS
2768          RS       8     FLOW       -1
2769          RC   0.050    0.045    0.050     8449   0.0047
2770          RX       0      500      700      750      800      900     1100     1600
2771          RY       6        4        2        0        0        2        4        6
              *

2772          KK   DRF16
2773          KM        Return diverted flow from CP F16
2774          DR   DVF16
              *

2775          KK  RCPF16
2776          KM        Route flow from CP F16 to CP F24
2777          KM     URS 2009; Typical Section
2778          RS      17     FLOW       -1
2779          RC   0.050    0.045    0.050     8930   0.0048
2780          RX       0      500      700      750      800      900     1100     1600
2781          RY       6        4        2        0        0        2        4        6
              *
```



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

2782          KK     F24   BASIN
2783          KM     URS 2009
2784          BA   0.799
2785          LG    0.35     0.35     4.60     0.33       14
2786          UI       0      122      399      664      863      536      286      121       53       25
2787          UI      25        0        0        0        0        0        0        0        0        0
2788          UI       0        0        0        0        0        0        0        0        0        0
2789          UI       0        0        0        0        0        0        0        0        0        0
2790          UI       0        0        0        0        0        0        0        0        0        0
              *
```

```
2791          KM    URS 2009

2792          KK   CPF24
2793          KM        Combine F17, F16 with F24
2794          HC       3   2.933
              *

2795          KK  RCPF24
2796          KM        Route flow from CP F24 to CP F27
2797          KM     URS 2009 ; Typical XS
2798          RS       5    FLOW      -1
2799          RC   0.050   0.045   0.050    6612  0.0045
2800          RX       0     500     700     750     800     900    1100    1600
2801          RY       6       4       2       0       0       2       4       6
              *

2802          KK     F23   BASIN
2803          KM     URS 2009
2804          BA   0.670
2805          LG    0.35    0.35    4.45    0.36      22
2806          UI       0      93     310     495     725     469     280     116      58      20
2807          UI      20       0       0       0       0       0       0       0       0       0
2808          UI       0       0       0       0       0       0       0       0       0       0
2809          UI       0       0       0       0       0       0       0       0       0       0
2810          UI       0       0       0       0       0       0       0       0       0       0
              *

2811          KK  RCPF23
2812          KM        Route flow from CP F23 to CP F27
2813          KM     URS 2009 ; Typical XS
2814          RS       6    FLOW      -1
2815          RC   0.050   0.045   0.050    7018  0.0043
2816          RX       0     500     700     750     800     900    1100    1600
2817          RY       6       4       2       0       0       2       4       6
              *

2818          KK     F27   BASIN
2819          KM     URS 2009
2820          BA   0.671
2821          LG    0.35    0.35    4.60    0.33       5
2822          UI       0     168     503     899     598     271     106      27      26       0
2823          UI       0       0       0       0       0       0       0       0       0       0
2824          UI       0       0       0       0       0       0       0       0       0       0
2825          UI       0       0       0       0       0       0       0       0       0       0
```



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

2826          UI       0       0       0       0       0       0       0       0       0       0
              *

2827          KK   CPF27
2828          KM    URS 2009
2829          KM        Combine F25, F24, F23 with F27
2830          HC       4   9.632
              *

2831          KK  PNDF01
2832          KM    FROM EEC STUDY
2833          KM        POND F1
2834          KM    Common storage area for CPF25 and CPF27
2835          RS       1    STOR      -1
2836          SV       0     0.4     0.6     2.3     9.2    26.8    56.8    99.6   155.8
2837          SE  1297.4    1299    1300    1301    1302    1303    1304    1305    1306
2838          SQ       0     245     442     721    1020    1312    1694    3507    9422
              *

2839          KK    DF27
2840          KM    FROM EEC STUDY
2841          KM    Divert flow into F34
2842          KM        Flow is split between what passes through/over the structures and
2843          KM        what is diverted parallel to the railroad.
2844          KM    UPRR Structures 37 and 38 (2-48" SSP and 20' PRESTRESSED CONCRETE SLAB (PCS)
2845          KM    UPRR STRUCTURES MP885.53 , MP885.82
2846          DT   DVF27
2847          DI       0     442     721    1020    1312    1694    3507    9422
2848          DQ       0     442     721    1020    1312    1574    2234    4860
              *

2849          KK  RCPF27
2850          KM    URS 2009
2851          KM        Route remainder flow from CP F27 to CP F28
2852          RS       7    FLOW      -1
2853          RC   0.050   0.045   0.050    2036  0.0005
2854          RX       0       1      28     106     116     250     500     980
2855          RY  1303.9 1303.99 1303.99 1304.48 1300.58 1301.11  1302.1    1304
              *

2856          KK     F10   BASIN
2857          KM     URS 2009
2858          KM    Customized XKSAT Values
2859          BA   2.247
2860          LG    0.35    0.35    3.15    0.82       0
2861          UI       0     514    1565    2857    2083    1052     385     132      83       0
2862          UI       0       0       0       0       0       0       0       0       0       0
2863          UI       0       0       0       0       0       0       0       0       0       0
2864          UI       0       0       0       0       0       0       0       0       0       0
2865          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

2866          KK  RCPF10
2867          KM        Route flow from CP F10 to CP F18
```

```
2868          KM     URS 2009
2869          RS       3    FLOW      -1
2870          RC   0.050   0.045   0.050    4086  0.0049
2871          RX       0     121     221     381     976    1068    1205    1388
2872          RY  1384.6  1384.5  1384.4    1384  1383.0    1383  1382.9    1384
              *

2873          KK     F18   BASIN
2874          KM     URS 2009
2875          BA   0.302
2876          LG    0.35    0.35    4.50    0.35      20
2877          UI       0     178     542     344      83      18       0       0       0       0
2878          UI       0       0       0       0       0       0       0       0       0       0
2879          UI       0       0       0       0       0       0       0       0       0       0
2880          UI       0       0       0       0       0       0       0       0       0       0
2881          UI       0       0       0       0       0       0       0       0       0       0
              *

2882          KK   CPF18
2883          KM    URS 2009
2884          KM        Combine F10 with F18
2885          HC       2   2.549
              *

2886          KK    DF18
2887          KM      Divert flow into F21
2888          KM        Natural divergence of flow due to a braided channel network.
2889          DT   DVF18
2890          DI       0      43     174     376    1053    2437    4429    7527   11245
2891          DQ       0      14      53     115     360     866    1628    2872    4381
              *

2892          KK  RCPF18
2893          KM        Route remainder flow from CP F18 to CP F22;
2894          KM     URS 2009 ; Typical XS
2895          RS       5    FLOW      -1
2896          RC   0.050   0.045   0.050    6820  0.0053
2897          RX       0     500     700     750     800     900    1100    1600
2898          RY       6       4       2       0       0       2       4       6
              *

2899          KK     F22   BASIN
2900          KM     URS 2009
2901          BA   0.366
2902          LG    0.35    0.35    4.60    0.33       8
2903          UI       0     106     310     521     304     114      38      15       0       0
2904          UI       0       0       0       0       0       0       0       0       0       0
2905          UI       0       0       0       0       0       0       0       0       0       0
2906          UI       0       0       0       0       0       0       0       0       0       0
2907          UI       0       0       0       0       0       0       0       0       0       0
              *
2908          KM    URS 2009
```



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

2909          KK   CPF22
2910          KM        Combine F18 with F22
2911          HC       2   2.074
              *

2912          KK    DF22
2913          KM      Divert flow into F29
2914          KM        Natural divergence of flow due to a braided channel network.
2915          DT   DVF22
2916          DI       0      61     238     618    1809    4167    7458   11472
2917          DQ       0      35     138     402    1099    2367    4039    6046
              *

2918          KK   RDF22
2919          KM        Route flow from CP F22 to CP F28
2920          RS      12    FLOW      -1
2921          RC   0.050   0.045   0.050    7882  0.0036
2922          RX       0     200     400     495     505     600     800    1000
2923          RY    1328    1327    1326    1325    1325    1326    1327    1328
              *

2924          KK     F28   BASIN
2925          KM     URS 2009
2926          BA   0.474
2927          LG    0.34    0.33    4.50    0.36      19
2928          UI       0     126     373     653     411     173      65      19       0       0
2929          UI       0       0       0       0       0       0       0       0       0       0
2930          UI       0       0       0       0       0       0       0       0       0       0
2931          UI       0       0       0       0       0       0       0       0       0       0
2932          UI       0       0       0       0       0       0       0       0       0       0
              *
2933          KM    URS 2009

2934          KK   CPF28
2935          KM        Combine F27, F22 with F28
2936          HC       3   1.262
              *

2937          KK  PNDF02
2938          KM    FROM EEC STUDY
2939          KM        POND F2
2940          KM    Storage area for structure 39 and 40
2941          RS       1    STOR      -1
2942          SV       0    0.05     0.4     3.2    13.3    31.7    58.2    69.9
2943          SE  1298.6    1299    1300    1301    1302    1303    1304    1305
2944          SQ       0      34     129     250     398     597    1319    2177
              *

2945          KK   DF28A
```

```
2946          KM    FROM EEC STUDY
2947          KM    Divert flow from F28 into F34
2948          KM        Flow is split between what passes through/over the structure and
2949          KM        what is diverted parallel to the railroad.
2950          KM    UPRR Structure 39 (17' Bridge), MP885.98
1                                   HEC-1 INPUT                                                    PAGE 73

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

2951          DT  DVF28A
2952          DI       0      34     129     250     398     597    1319    2177
2953          DQ       0      23      89     158     263     355     440     572
              *

2954          KK   DF28B
2955          KM    FROM EEC STUDY
2956          KM    Divert flow from F28 into F33
2957          KM        Flow is split between what passes through/over the structure and
2958          KM        what is diverted parallel to the railroad.
2959          KM    UPRR Structure 40 (4-38" steel pipes),MP886.22
2960          DT  DVF28B
2961          DI       0      11      40      92     135     242     879    1602
2962          DQ       0      11      40      92     135     203     269     299
              *

2963          KK  RCPF28
2964          KM    URS 2009
2965          KM        Route remainder flow from CPF28 to CPF36
2966          RS       9    FLOW      -1
2967          RC   0.050   0.045   0.050    2363  0.0017
2968          RX       0       1      22     103     111     250     600    1020
2969          RY  1299.3 1301.38  1303.7 1303.81 1300.12 1300.71 1302.21    1304
              *

2970          KK     F36   BASIN
2971          KM     URS 2009
2972          BA   0.167
2973          LG    0.34    0.33    4.45    0.39      25
2974          UI       0     101     304     187      43      10       0       0       0       0
2975          UI       0       0       0       0       0       0       0       0       0       0
              *
2976          KM    URS 2009

2977          KK   CPF36
2978          KM        Combine F28 with F36
2979          HC       2   0.167
              *

2980          KK  PNDF03
2981          KM    FROM EEC STUDY
2982          KM        POND F3
2983          KM    Storage area for structure 41
2984          RS       1    STOR      -1
2985          SV       0     0.1     0.3     0.7     1.5     2.5     5.9    10.5    21.1
2986          SE  1295.9    1297    1298    1299    1300    1301    1302  1302.5 1303.15
2987          SQ       0      31      65     111     152     182     210     378    1475
              *

2988          KK  RCPF36
2989          KM        Route flow from CP F36 to CP F32
2990          KM        Crossing at SR-238
2991          KM        URS 2009 ; Typical XS
2992          RS       8    FLOW      -1
2993          RC   0.050   0.045   0.050    5687  0.0028
1                                   HEC-1 INPUT                                                    PAGE 74

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

2994          RX       0     500     700     750     800     900    1100    1600
2995          RY       6       4       2       0       0       2       4       6
              *

2996          KK    F02A   BASIN
2997          KM     URS 2009
2998          KM    Customized XKSAT Values
2999          BA   0.636
3000          LG    0.35    0.35    2.92    0.96       0
3001          UI       0     623    1414     370      53       0       0       0       0       0
3002          UI       0       0       0       0       0       0       0       0       0       0
3003          UI       0       0       0       0       0       0       0       0       0       0
3004          UI       0       0       0       0       0       0       0       0       0       0
3005          UI       0       0       0       0       0       0       0       0       0       0
              *

3006          KK  RCF02A
3007          KM        Route flow from basin F02A to CPF02
3008          KM       URS 2009
3009          KM       Typical Sheet Flow Route
3010          RS      30    FLOW      -1
3011          RC   0.050   0.045   0.050    6330  0.0169
3012          RX       0     500     700     750     800     900    1100    1600
3013          RY       6       4       2       0       0       2       4       6
              *

3014          KK     F02   BASIN
3015          KM    Customized XKSAT Values
3016          KM     URS 2009
3017          BA   0.387
3018          LG    0.35    0.35    2.94    0.95       0
3019          UI       0     231     700     436     103      23       0       0       0       0
3020          UI       0       0       0       0       0       0       0       0       0       0
3021          UI       0       0       0       0       0       0       0       0       0       0
3022          UI       0       0       0       0       0       0       0       0       0       0
3023          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
3024          KK   CPF02
3025          KM        Combine F02A with F02
3026          HC       2
              *

3027          KK    DF02
3028          KM      Divert flow into F05
3029          KM        Natural divergence of flow due to a braided channel network.
3030          DT   DVF02
3031          DI       0      15      72     171     373     668    1245    2417    4142    5875
3032          DQ       0       8      40      99     211     372     675    1285    2190    3085
              *
1                                          HEC-1 INPUT                                          PAGE 75

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

3033          KK  RCPF02
3034          KM        Route remainder flow from CP F02 to CP F04
3035          RS      30    FLOW      -1
3036          RC   0.050   0.045   0.050   18300  0.0079
3037          RX       0     200     400     430     445     475     700     900
3038          RY    1625    1624    1624    1623    1623    1624    1624    1625
              *

3039          KK    F01A   BASIN
3040          KM    Customized XKSAT Values
3041          KM     URS 2009
3042          BA   0.410
3043          LG    0.35    0.35    2.89    0.98       0
3044          UI       0     517     916     134       0       0       0       0       0       0
3045          UI       0       0       0       0       0       0       0       0       0       0
3046          UI       0       0       0       0       0       0       0       0       0       0
3047          UI       0       0       0       0       0       0       0       0       0       0
3048          UI       0       0       0       0       0       0       0       0       0       0
              *

3049          KK  RCF01A
3050          KM        Route flow from basin F01A to CPF01
3051          KM      URS 2009
3052          KM      Typical Sheet Flow Route
3053          RS      30    FLOW      -1
3054          RC   0.050   0.045   0.050   16405  0.0114
3055          RX       0     500     700     750     800     900    1100    1600
3056          RY       6       4       2       0       0       2       4       6
              *

3057          KK     F01   BASIN
3058          KM    Customized XKSAT Values
3059          KM     URS 2009
3060          BA   1.777
3061          LG    0.35    0.35    2.94    0.95       0
3062          UI       0     208     724    1110    1815    1326     870     409     215      94
3063          UI      49      49       0       0       0       0       0       0       0       0
3064          UI       0       0       0       0       0       0       0       0       0       0
3065          UI       0       0       0       0       0       0       0       0       0       0
3066          UI       0       0       0       0       0       0       0       0       0       0
              *

3067          KK   CPF01
3068          KM        Combine F01A with F01
3069          HC       2
              *

3070          KK  RCPF01
3071          KM        Route flow from CP F01 to CP F04
3072          RS       6    FLOW      -1
3073          RC   0.050   0.045   0.050   10320  0.0053
3074          RX       0       9      35      90     130     185     235     244
3075          RY    1580 1578.25    1578    1577    1577    1578 1578.25    1580
              *
1                                          HEC-1 INPUT                                          PAGE 76

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

3076          KK     F04   BASIN
3077          KM    Customized XKSAT Values
3078          KM     URS 2009
3079          BA   2.198
3080          LG    0.35    0.35    2.94    0.95       0
3081          UI       0     151     524     835    1141    1778    1408    1029     727     368
3082          UI     234     146      46      46      46       0       0       0       0       0
3083          UI       0       0       0       0       0       0       0       0       0       0
3084          UI       0       0       0       0       0       0       0       0       0       0
3085          UI       0       0       0       0       0       0       0       0       0       0
              *
3086          KM    URS 2009

3087          KK   CPF04
3088          KM        Combine F02, F01 with F04
3089          HC       3   4.825
              *

3090          KK  RCPF04
3091          KM        Route flow from CP F04 to CP F05 ; Typical XS-Sheet Flow
3092          KM     URS 2009
3093          RS       5    FLOW      -1
3094          RC   0.050   0.045   0.050    8226  0.0053
3095          RX       0     500     700     750     800     900    1100    1600
3096          RY       6       4       2       0       0       2       4       6
              *

3097          KK     F03   BASIN
3098          KM    Customized XKSAT Values
3099          KM     URS 2009
```

```
3100          BA   1.629
3101          LG    0.35    0.35    2.94    0.95       0
3102          UI       0     209     711    1108    1730    1176     745     311     177      56
3103          UI      46       0       0       0       0       0       0       0       0       0
3104          UI       0       0       0       0       0       0       0       0       0       0
3105          UI       0       0       0       0       0       0       0       0       0       0
3106          UI       0       0       0       0       0       0       0       0       0       0
              *

3107          KK  RCPF03
3108          KM        Route flow from CP F03 to CP F06
3109          KM    This is in the 10-foot contour area, used the EEC route.
3110          RS       2    FLOW      -1
3111          RC   0.050   0.045   0.050    4460  0.0087
3112          RX       0       6      80     100     110     130     215     221
3113          RY    1580 1578.75    1578    1577    1577    1578 1578.75    1580
              *

3114          KK     F06   BASIN
3115          KM    Customized XKSAT Values
3116          KM     URS 2009
3117          BA   1.001
3118          LG    0.35    0.35    2.91    0.97       0
3119          UI       0     515    1619    1250     370      85       0       0       0       0
1                                          HEC-1 INPUT                                                PAGE 77

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

3120          UI       0       0       0       0       0       0       0       0       0       0
3121          UI       0       0       0       0       0       0       0       0       0       0
3122          UI       0       0       0       0       0       0       0       0       0       0
              *
3123          KM    URS 2009

3124          KK   CPF06
3125          KM        Combine F03 with F06
3126          HC       2   2.630
              *

3127          KK  RCPF06
3128          KM        Route flow from CP F06 to CP F05
3129          KM     URS 2009
3130          RS       5    FLOW      -1
3131          RC   0.050   0.045   0.050    8095  0.0059
3132          RX       0     278     396     448     660     798     850     924
3133          RY    1524    1524  1521.8  1521.9    1522    1524    1524    1524
              *

3134          KK   DRF02
3135          KM        Return diverted flow from CP F02
3136          DR   DVF02
              *

3137          KK   RDF02
3138          KM        Route flow from CP F02 to CP F05
3139          KM     This is in the 10-foot contour area, used the EEC route.
3140          RS      24    FLOW      -1
3141          RC   0.050   0.045   0.050   24410  0.0075
3142          RX       0     125     250     270     280     300     425     550
3143          RY    1595    1594    1593    1592    1592    1593    1594    1595
              *

3144          KK     F05   BASIN
3145          KM    Customized XKSAT Values
3146          KM     URS 2009
3147          BA   2.967
3148          LG    0.35    0.35    3.23    0.77       0
3149          UI       0     209     747    1173    1628    2476    1867    1354     926     440
3150          UI     290     167      64      64      64       0       0       0       0       0
3151          UI       0       0       0       0       0       0       0       0       0       0
3152          UI       0       0       0       0       0       0       0       0       0       0
3153          UI       0       0       0       0       0       0       0       0       0       0
              *
3154          KM    URS 2009

3155          KK   CPF05
3156          KM        Combine F04, F06, DRF02 with F05
3157          HC       4  11.005
              *
1                                          HEC-1 INPUT                                                PAGE 78

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

3158          KK  RCPF05
3159          KM        Route flow from CP F05 to CP F08
3160          KM     URS 2009
3161          RS       6    FLOW      -1
3162          RC   0.050   0.045   0.050    9238  0.0049
3163          RX       0     185     396     442     522     648     719     946
3164          RY  1482.9    1482  1481.4    1481  1481.2  1481.4  1481.9  1482.4
              *

3165          KK     F07   BASIN
3166          KM    Customized XKSAT Values
3167          KM     URS 2009
3168          BA   3.678
3169          LG    0.35    0.35    3.11    0.84       0
3170          UI       0     354    1314    1985    3283    2931    1983    1226     534     330
3171          UI     106      94      94       0       0       0       0       0       0       0
3172          UI       0       0       0       0       0       0       0       0       0       0
3173          UI       0       0       0       0       0       0       0       0       0       0
3174          UI       0       0       0       0       0       0       0       0       0       0
              *

3175          KK  RCPF07
```

```
3176        KM        Route flow from CP F07 to CP F08; Typical XS-Sheet Flow
3177        KM      URS 2009
3178        RS       6    FLOW      -1
3179        RC   0.050   0.045   0.050    1304  0.0038
3180        RX       0     500     700     750     800     900    1100    1600
3181        RY       6       4       2       0       0       2       4       6
            *

3182        KK     F08   BASIN
3183        KM    Customized XKSAT Values
3184        KM      URS 2009
3185        BA   0.878
3186        LG    0.35    0.35    3.88    0.49       0
3187        UI       0     132     434     717     950     593     323     135      61      27
3188        UI      27       0       0       0       0       0       0       0       0       0
3189        UI       0       0       0       0       0       0       0       0       0       0
3190        UI       0       0       0       0       0       0       0       0       0       0
3191        UI       0       0       0       0       0       0       0       0       0       0
            *
3192        KM    URS 2009

3193        KK   CPF08
3194        KM        Combine F05, F07 with F08
3195        HC       3  15.561
            *

3196        KK  RCPF08
3197        KM        Route flow from CP F08 to CP F09
3198        KM      URS 2009
3199        RS       1    FLOW      -1
3200        RC   0.050   0.045   0.050   14421  0.0049
3201        RX       0     549     818     853     939    1093    1112    1758
```



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

3202        RY  1432.8 1431.75  1430.6  1430.6  1430.7  1431.5  1431.6  1432.7
            *

3203        KK     F09   BASIN
3204        KM    Customized XKSAT Values
3205        KM      URS 2009
3206        BA   2.691
3207        LG    0.35    0.35    3.53    0.62       2
3208        UI       0     169     508     876    1148    1701    1911    1375    1021     721
3209        UI     359     253     169      53      52      52      52       0       0       0
3210        UI       0       0       0       0       0       0       0       0       0       0
3211        UI       0       0       0       0       0       0       0       0       0       0
3212        UI       0       0       0       0       0       0       0       0       0       0
            *
3213        KM    URS 2009

3214        KK   CPF09
3215        KM        Combine F08 with F09
3216        HC       2  18.252
            *

3217        KK  RCPF09
3218        KM        Route flow from CP F09 to CP F19;Typical XS-Sheet Flow
3219        KM      URS 2009
3220        RS      10    FLOW      -1
3221        RC   0.050   0.045   0.050    9900  0.0051
3222        RX       0     500     700     750     800     900    1100    1600
3223        RY       6       4       2       0       0       2       4       6
            *

3224        KK     F19   BASIN
3225        KM     URS 2009
3226        BA   0.849
3227        LG    0.35    0.35    4.55    0.34      14
3228        UI       0     106     363     563     893     619     396     172      95      34
3229        UI      24       0       0       0       0       0       0       0       0       0
3230        UI       0       0       0       0       0       0       0       0       0       0
3231        UI       0       0       0       0       0       0       0       0       0       0
3232        UI       0       0       0       0       0       0       0       0       0       0
            *
3233        KM    URS 2009

3234        KK   CPF19
3235        KM        Combine F09 with F19
3236        HC       2  19.101
            *

3237        KK    DF19
3238        KM      Divert flow into F21
3239        KM        Natural divergence of flow due to a braided channel network.
3240        DT   DVF19
3241        DI       0      10      39     619    1929    3960    6529    9583   13081
3242        DQ       0       5      21     313     971    1991    3281    4814    6570
            *
```



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

3243        KK   RDF19
3244        KM        Route flow from CP F19 to CP F21
3245        KM      URS 2009
3246        RS      12    FLOW      -1
3247        RC   0.050   0.045   0.050    4510  0.0044
3248        RX       0     101     369     431     529     607     782     800
3249        RY  1319.2  1318.5  1317.4  1317.3  1317.4  1317.5  1318.4  1318.4
            *

3250        KK   DRF18
3251        KM        Return diverted flow from CP F18
```

```
3252          DR   DVF18
              *

3253          KK   RDF18
3254          KM        Route flow from CP F18 to CP F21
3255          KM     URS 2009
3256          RS       7    FLOW      -1
3257          RC   0.050   0.045   0.050   10383  0.0048
3258          RX       0     214     322     516     638     860     920     925
3259          RY    1336    1336  1335.7  1335.5  1335.3    1336    1336    1336
              *

3260          KK     F21
3261          KM     URS 2009
3262          BA   0.533
3263          LG    0.35    0.35    4.60    0.33       8
3264          UI       0     109     334     617     521     294     110      45      19       0
3265          UI       0       0       0       0       0       0       0       0       0       0
3266          UI       0       0       0       0       0       0       0       0       0       0
3267          UI       0       0       0       0       0       0       0       0       0       0
3268          UI       0       0       0       0       0       0       0       0       0       0
              *
3269          KM    URS 2009

3270          KK   CPF21
3271          KM        Combine DRF19, DRF18 with F21
3272          HC       3  11.116
              *

3273          KK  RCPF21
3274          KM        Route flow from CP F21 to CP F29 ; Typical XS - Sheet Flow
3275          KM     URS 2009
3276          RS       5    FLOW      -1
3277          RC   0.050   0.045   0.050    5939  0.0040
3278          RX       0     500     700     750     800     900    1100    1600
3279          RY       6       4       2       0       0       2       4       6
              *
1                                          HEC-1 INPUT                                                    PAGE 81

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

3280          KK   DRF22
3281          KM        Return diverted flow from Basin F22
3282          DR   DVF22
              *

3283          KK  RCPF22
3284          KM        Route remainder flow from CP F22 to CP F29
3285          KM        URS 2009 ; Typical XS
3286          RS       8    FLOW      -1
3287          RC   0.050   0.045   0.050    8910  0.0043
3288          RX       0     500     700     750     800     900    1100    1600
3289          RY       6       4       2       0       0       2       4       6
              *

3290          KK     F29   BASIN
3291          KM     URS 2009
3292          BA   0.594
3293          LG    0.35    0.35    4.55    0.34      12
3294          UI       0     125     381     706     573     318     115      46      21       0
3295          UI       0       0       0       0       0       0       0       0       0       0
3296          UI       0       0       0       0       0       0       0       0       0       0
3297          UI       0       0       0       0       0       0       0       0       0       0
3298          UI       0       0       0       0       0       0       0       0       0       0
              *
3299          KM    URS 2009

3300          KK   CPF29
3301          KM        Combine F21, F22 with F29
3302          HC       3  12.996
              *

3303          KK  PNDF04
3304          KM    FROM EEC STUDY
3305          KM        POND F4
3306          KM    Storage area for structure 42 and 43
3307          RS       1    STOR      -1
3308          SV       0     0.8     3.3     8.4    19.9    27.2    33.1    41.9    58.9
3309          SE  1296.6    1298    1299    1300    1301  1301.5  1301.8    1302  1302.5
3310          SQ       0      79     137     170     243     298     795    1637    2501
              *

3311          KK    DF29
3312          KM    Divert flow into F32
3313          KM        Flow is split between what passes through/over the structure and
3314          KM        what is diverted parallel to the railroad.
3315          KM    UPRR Structure 42 and 43 (3'x3' wooden box, 4'x2.5' wooden box)
3316          KM    UPRR STRUCTURES MP886.91, MP886.95
3317          DT   DVF29
3318          DI       0     170     445     761    1414    2360    4618
3319          DQ       0     170     243     298     795    1637    2501
              *
1                                          HEC-1 INPUT                                                    PAGE 82

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

3320          KK  RCPF29
3321          KM    URS 2009
3322          KM        Route remainder flow from CP F29 to CP F20
3323          KM
3324          RS       5    FLOW      -1
3325          RC   0.050   0.045   0.050    2160  0.0005
3326          RX       0       5       7      95     101     500     750     950
3327          RY  1298.2    1299 1299.67 1300.12 1297.49  1298.7 1299.41    1300
```

```
                 *
3328             KK   DRF19
3329             KM        Return diverted flow from CP F19
3330             DR   DVF19
                 *

3331             KK  RCPF19
3332             KM        Route remainder flow from CP F19 to CP F20; Typical XS- Sheet Flow
3333             KM     URS 2009
3334             RS       7    FLOW      -1
3335             RC   0.050   0.045   0.050   10693  0.0047
3336             RX       0     500     700     750     800     900    1100    1600
3337             RY       6       4       2       0       0       2       4       6
                 *

3338             KK     F20   BASIN
3339             KM     URS 2009
3340             BA   0.797
3341             LG    0.34    0.34    4.55    0.34      16
3342             UI       0      97     334     516     829     586     379     170      92      36
3343             UI      22      22       0       0       0       0       0       0       0       0
3344             UI       0       0       0       0       0       0       0       0       0       0
3345             UI       0       0       0       0       0       0       0       0       0       0
                 *
3346             KM    URS 2009

3347             KK   CPF20
3348             KM        Combine F19, F29 with F20
3349             HC       3  16.524
                 *

3350             KK  PNDF05
3351             KM    EEC POND DATA USED, URS 2009
3352             KM        POND F5
3353             KM    Storage area for structure 44 and 45
3354             KM    UPRR Structures 44 and 45 (3'x3' wooden box, 2-4'x2.5' wooden boxes)
3355             KM    UPRR STRUCTURES MP887.19, MP887.32
3356             RS       1    STOR      -1
3357             SV       0     2.5     8.6    20.3    38.2    61.8    77.3    92.7
3358             SE  1294.3    1296    1297    1298    1299    1300  1300.5    1301
3359             SQ       0      60     119     180     241     484    1909    2689
                 * ******************************************************************************
                 * All flow from Pond F5 crosses SR-238.  Hereafter, runoff arrives in Waterman
                 * Wash from both sides of the wash.
                 * ******************************************************************************
1                                                HEC-1 INPUT                                                PAGE 83

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

3360             KK  RCPF20
3361             KM        Route flow from CP F20 to CP F31;Typical Section - Sheet Flow
3362             KM     URS 2009
3363             KM        Crossing at SR-238
3364             RS      11    FLOW      -1
3365             RC   0.050   0.045   0.050    3982  0.0015
3366             RX       0     500     700     750     800     900    1100    1600
3367             RY       6       4       2       0       0       2       4       6
                 *

3368             KK     F31   BASIN
3369             KM     URS 2009
3370             BA   0.272
3371             LG    0.34    0.34    4.60    0.34       4
3372             UI       0     144     452     334      94      21       0       0       0       0
3373             UI       0       0       0       0       0       0       0       0       0       0
3374             UI       0       0       0       0       0       0       0       0       0       0
3375             UI       0       0       0       0       0       0       0       0       0       0
3376             UI       0       0       0       0       0       0       0       0       0       0
                 *

3377             KK     G21   BASIN
3378             KM     URS 2009
3379             KM    CUSTOM XKSAT VALUE
3380             BA   1.955
3381             LG    0.35    0.35    3.15    0.82       0
3382             UI       0     590    1728    2822    1581     558     178      82       0       0
3383             UI       0       0       0       0       0       0       0       0       0       0
3384             UI       0       0       0       0       0       0       0       0       0       0
                 *

3385             KK     G20   BASIN
3386             KM     URS 2009
3387             KM    CUSTOM XKSAT VALUE
3388             BA   0.236
3389             LG    0.35    0.35    3.38    0.69       0
3390             UI       0     196     504     179      28       0       0       0       0       0
3391             UI       0       0       0       0       0       0       0       0       0       0
3392             UI       0       0       0       0       0       0       0       0       0       0
3393             UI       0       0       0       0       0       0       0       0       0       0
                 *

3394             KK    DG20
3395             KM      Divert flow from G20
3396             KM      Divert flow into G20
3397             KM     URS 2009
3398             KM        Natural divergence of flow due to a braided channel network.
3399             DT   DVG20
3400             DI       0       6     115     574    1598    3192    5238    7681   10486
3401             DQ       0       0       0      14     310     959    1865    2992    4319
                 *
1                                                HEC-1 INPUT                                                PAGE 84

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

```
3402          KK  RCPG20
3403          KM        Route remainder of flow from Basin G20 to CPF31
3404          KM       URS 2009
3405          KM       Typical Sheet Flow Route
3406          RS      10    FLOW      -1
3407          RC   0.050   0.035   0.050    8983  0.0065
3408          RX       0     500     700     750     800     900    1100    1600
3409          RY       6       4       2       0       0       2       4       6
              *
3410          KM    URS 2009

3411          KK  CPF31
3412          KM        Combine CPF20, F31, G20 with G21
3413          HC       4  18.992
              *

3414          KK  RCPF31
3415          KM        Route flow from CP F31 to CP F32RIV (WATERMAN WASH)
3416          KM    THIS ROUTE IS FROM THE EEC STUDY
3417          RS       2    FLOW      -1
3418          RC   0.050   0.035   0.050    2940  0.0029
3419          RX       0    1100    2400    2625    2675    2900    3700    4500
3420          RY    1295    1290    1287    1285    1285    1287    1290    1295
              *

3421          KK   DRF29
3422          KM        Return diverted flow from CPF29
3423          DR   DVF29
              *

3424          KK  RDF29
3425          KM        Route flow from CP F29 to CP F32
3426          KM        Crossing at SR-238
3427          KM     URS 2009 ; Typical XS
3428          RS       6    FLOW      -1
3429          RC   0.050   0.045   0.050    5810  0.0038
3430          RX       0     500     700     750     800     900    1100    1600
3431          RY       6       4       2       0       0       2       4       6
              *

3432          KK     F32   BASIN
3433          KM     URS 2009
3434          BA   0.287
3435          LG    0.35    0.35    4.65    0.32       0
3436          UI       0     102     300     423     200      60      16       0       0       0
3437          UI       0       0       0       0       0       0       0       0       0       0
3438          UI       0       0       0       0       0       0       0       0       0       0
3439          UI       0       0       0       0       0       0       0       0       0       0
              *
3440          KM    URS 2009
```



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

3441          KK   CPF32
3442          KM        Combine F36, F29 with F32
3443          HC       3   7.082
              * ******************************************************************************
              * Begin Watershed G
              * ******************************************************************************

3444          KK   DRG20
3445          KM        Return diverted flow from G20
3446          DR   DVG20
              *

3447          KK   RDG20
3448          KM        Route remainder of flow from CP G20 to CP G22
3449          KM       URS 2009
3450          KM       Typical Sheet Flow Route
3451          RS       8    FLOW      -1
3452          RC   0.050   0.045   0.050    9213  0.0074
3453          RX       0     500     700     750     800     900    1100    1600
3454          RY       6       4       2       0       0       2       4       6
              *
3455          KM    URS 2009

3456          KK     G19   BASIN
3457          KM        Customized XKSAT Values
3458          BA   0.670
3459          LG    0.35    0.35    3.05    0.88      12
3460          UI       0     603    1464     448      68       0       0       0       0       0
3461          UI       0       0       0       0       0       0       0       0       0       0
3462          UI       0       0       0       0       0       0       0       0       0       0
3463          UI       0       0       0       0       0       0       0       0       0       0
3464          UI       0       0       0       0       0       0       0       0       0       0
              *

3465          KK  RCPG19
3466          KM        Route flow from CP G19 to CP G22
3467          KM       URS 2009
3468          KM       Typical Sheet Flow Route
3469          RS       8    FLOW      -1
3470          RC   0.050   0.045   0.050   10270  0.0068
3471          RX       0     500     700     750     800     900    1100    1600
3472          RY       6       4       2       0       0       2       4       6
              *

3473          KK     G22   BASIN
3474          KM     URS 2009
3475          KM    CUSTOM XKSAT VALUE
3476          BA   1.124
3477          LG    0.35    0.35    3.15    0.82       0
3478          UI       0     237     726    1345    1080     596     215      86      40       0
```

```
3479        UI       0       0       0       0       0       0       0       0       0       0
3480        UI       0       0       0       0       0       0       0       0       0       0
3481        UI       0       0       0       0       0       0       0       0       0       0
            *
1                                          HEC-1 INPUT                                                PAGE 86

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

3482        KM    URS 2009

3483        KK   CPG22
3484        KM        Combine G20, G19 with G22
3485        HC       3   1.796
            *

3486        KK  F32RIV
3487        KM        Combine F31RIV, G22 with F32
3488        KM        83rd Avenue crossing at F32RIV
3489        HC       3  27.841
            *

3490        KK  RCPF32
3491        KM        Route flow from CP F32RIV to CP F33RIV (WATERMAN WASH)
3492        KM        THIS ROUTE IS FROM THE EEC STUDY
3493        RS       2    FLOW      -1
3494        RC   0.050   0.035   0.050    2810  0.0033
3495        RX       0    1000    2100    2280    2320    2500    2900    3700
3496        RY    1285    1280    1277    1275    1275    1277    1280    1285
            *

3497        KK  DRF28B
3498        KM    URS 2009
3499        KM        Return diverted flow from CP F28B
3500        DR  DVF28B
            *

3501        KK  RDF28B
3502        KM        Route remainder flow from CP F28B to CP F33
3503        KM        Crossing at SR-238
3504        KM     URS 2009 ; Typical Section
3505        RS       3    FLOW      -1
3506        RC   0.050   0.045   0.050    7475  0.0035
3507        RX       0     500     700     750     800     900    1100    1600
3508        RY       6       4       2       0       0       2       4       6
            *

3509        KK     F33   BASIN
3510        KM     URS 2009
3511        BA   0.492
3512        LG    0.35    0.35    4.60    0.33       5
3513        UI       0     141     414     699     411     156      53      20       0       0
3514        UI       0       0       0       0       0       0       0       0       0       0
3515        UI       0       0       0       0       0       0       0       0       0       0
3516        UI       0       0       0       0       0       0       0       0       0       0
            *
3517        KM    URS 2009

3518        KK   CPF33
3519        KM        Combine F28 with F33
3520        HC       2   0.946
            *
1                                          HEC-1 INPUT                                                PAGE 87

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

3521        KK  F33RIV
3522        KM    URS 2009
3523        KM        Combine F32RIV with F33
3524        HC       2  28.787
            *

3525        KK  RCPF33
3526        KM        Route flow from CP F33RIV to CP F34RIV (WATERMAN WASH)
3527        KM        THIS ROUTE IS FROM THE EEC STUDY
3528        RS       1    FLOW      -1
3529        RC   0.050   0.035   0.050    2280  0.0028
3530        RX       0       9     110     290     330     510     610     619
3531        RY    1274 1272.25    1272    1270    1270    1272 1272.25    1274
            *

3532        KK  DRF28A
3533        KM    URS 2009
3534        KM        Return diverted flow from CP F28A
3535        DR  DVF28A
            *

3536        KK  RDF28A
3537        KM        Route flow from CP F28 to CP F34
3538        KM     URS 2009 ; Typical XS
3539        KM        Crossing at SR-238
3540        RS       4    FLOW      -1
3541        RC   0.050   0.045   0.050    4428  0.0045
3542        RX       0     500     700     750     800     900    1100    1600
3543        RY       6       4       2       0       0       2       4       6
            *

3544        KK   DRF27
3545        KM    URS 2009
3546        KM        Return diverted flow from CP F27
3547        DR   DVF27
            *

3548        KK    DF25
3549        KM    Divert flow into F34
3550        KM        Divert included to break flows between structures 37 and 38 (10' bridge
```

```
3551          KM        The purpose is to seperate the downstream flows for hydraulic modeling.
3552          DT   DVF25
3553          DI       0     245     442     721    1020    1312    1574    2234    4864
3554          DQ       0      17      58      98     165     232     291     348     425
              *

3555          KK   RDF27
3556          KM        Route remainder flow from CP F27 to CP F34
3557          KM        Crossing at SR-238
3558          KM     URS 2009 ; Typical XS
3559          RS       1    FLOW      -1
3560          RC   0.050   0.045   0.050    9440  0.0036
3561          RX       0     500     700     750     800     900    1100    1600
3562          RY       6       4       2       0       0       2       4       6
              *
1                                          HEC-1 INPUT                                                    PAGE 88

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

3563          KK   DRF25
3564          KM        Return diverted flow from CP F25
3565          DR   DVF25
              *

3566          KK   RDF25
3567          KM        Route flow from CP F25 to CP F34
3568          KM     URS 2009 ; Typical XS
3569          KM        Crossing at SR-238
3570          RS       7    FLOW      -1
3571          RC   0.050   0.045   0.050    9282  0.0037
3572          RX       0     500     700     750     800     900    1100    1600
3573          RY       6       4       2       0       0       2       4       6
              *

3574          KK     F34   BASIN
3575          KM     URS 2009
3576          BA   0.597
3577          LG    0.35    0.35    4.65    0.32       2
3578          UI       0     107     336     600     620     368     157      76      21      20
3579          UI       0       0       0       0       0       0       0       0       0       0
3580          UI       0       0       0       0       0       0       0       0       0       0
3581          UI       0       0       0       0       0       0       0       0       0       0
3582          UI       0       0       0       0       0       0       0       0       0       0
              *
3583          KM    URS 2009

3584          KK   CPF34
3585          KM        Combine DRF28A, DRF27, DRF25 with F34
3586          HC       4  18.089
              *

3587          KK     G23   BASIN
3588          KM    CUSTOM XKSAT VALUES
3589          KM     URS 2009
3590          BA   1.197
3591          LG    0.35    0.35    3.01    0.90       0
3592          UI       0     318     942    1649    1039     437     164      47       0       0
3593          UI       0       0       0       0       0       0       0       0       0       0
3594          UI       0       0       0       0       0       0       0       0       0       0
3595          UI       0       0       0       0       0       0       0       0       0       0
3596          UI       0       0       0       0       0       0       0       0       0       0
              *

3597          KK  F34RIV
3598          KM        Combine F33RIV, G23 with F34
3599          HC       3  40.147
              *
1                                          HEC-1 INPUT                                                    PAGE 89

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

3600          KK  RCPF34
3601          KM        Route flow from CP F34RIV to CP F35RIV (WATERMAN WASH)
3602          KM        THIS ROUTE IS FROM THE EEC STUDY
3603          RS       2    FLOW      -1
3604          RC   0.050   0.035   0.050    2250  0.0025
3605          RX       0      20    1510    1690    1730    1910    3410    3430
3606          RY  1272.5    1268    1261    1259    1259    1261    1268  1272.5
              *

3607          KK   DRF26
3608          KM        Return diverted flow from CP F26
3609          DR   DVF26
              *

3610          KK   RDF26
3611          KM        Route flow from CP F26 to CP F35
3612          KM     URS 2009; Typical XS
3613          KM        Crossing at SR-238
3614          RS       2    FLOW      -1
3615          RC   0.050   0.045   0.050   11049  0.0040
3616          RX       0     500     700     750     800     900    1100    1600
3617          RY       6       4       2       0       0       2       4       6
              *

3618          KK     F35   BASIN
3619          KM     URS 2009
3620          BA   0.666
3621          LG    0.35    0.35    4.65    0.32       1
3622          UI       0     111     354     610     712     428     204      92      33      21
3623          UI       0       0       0       0       0       0       0       0       0       0
3624          UI       0       0       0       0       0       0       0       0       0       0
3625          UI       0       0       0       0       0       0       0       0       0       0
3626          UI       0       0       0       0       0       0       0       0       0       0
```

```
                 *
3627             KM    URS 2009

3628             KK   CPF35
3629             KM        Combine F26 with F35
3630             HC       2   3.294
                 *

3631             KK     G24   BASIN
3632             KM     URS 2009
3633             KM    CUSTOM XKSAT VALUES
3634             BA   0.349
3635             LG    0.35    0.35    2.99    0.91       0
3636             UI       0     131     396     507     222      68      16       0       0       0
3637             UI       0       0       0       0       0       0       0       0       0       0
3638             UI       0       0       0       0       0       0       0       0       0       0
3639             UI       0       0       0       0       0       0       0       0       0       0
                 *
1                                                HEC-1 INPUT                                                PAGE 90

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

3640             KK  RCPG24
3641             KM        Route flow from CP G24 to CP F35RIV
3642             KM        THIS ROUTE IS FROM THE EEC STUDY
3643             RS       1    FLOW      -1
3644             RC   0.050   0.035   0.050     750  0.0027
3645             RX       0       9     110     140     190     220     300     309
3646             RY    1262 1260.25    1260    1257    1257    1260 1260.25    1262
                 *

3647             KK     G25   BASIN
3648             KM     URS 2009
3649             KM    CUSTOM XKSAT VALUES
3650             BA   0.358
3651             LG    0.35    0.35    2.94    0.95       0
3652             UI       0      80     243     446     336     176      63      23      13       0
3653             UI       0       0       0       0       0       0       0       0       0       0
3654             UI       0       0       0       0       0       0       0       0       0       0
3655             UI       0       0       0       0       0       0       0       0       0       0
                 *

3656             KK  F35RIV
3657             KM        Combine F34RIV, G24, G25 with F35
3658             HC       4  42.145
                 *

3659             KK  RCPF35
3660             KM        Route flow from CP F35RIV to CP E48RIV (WATERMAN WASH)
3661             KM        THIS ROUTE IS FROM THE EEC STUDY
3662             RS       1    FLOW      -1
3663             RC   0.050   0.035   0.050    1660  0.0025
3664             RX       0      10    1200    1380    1420    1600    1800    1810
3665             RY    1272    1270    1262    1260    1260    1262    1270    1272
                 *
3666             KM    URS 2009

3667             KK   DRE54
3668             KM        Return diverted flow from CP E54
3669             DR   DVE54
                 *

3670             KK   RDE54
3671             KM    URS 2009
3672             KM        Route remainder flow from CP E54 to CP E46
3673             KM        Crossing at SR-238
3674             RS       6    FLOW      -1
3675             RC   0.050   0.045   0.050    2647  0.0045
3676             RX       0     500     700     750     800     900    1100    1600
3677             RY       6       4       2       0       0       2       4       6
                 *
1                                                HEC-1 INPUT                                                PAGE 91

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

3678             KK     E46   BASIN
3679             KM     URS 2009
3680             BA   0.238
3681             LG    0.35    0.35    4.50    0.35       5
3682             UI       0     360     497      57       0       0       0       0       0       0
3683             UI       0       0       0       0       0       0       0       0       0       0
                 *
3684             KM    URS 2009

3685             KK   CPE46
3686             KM        Combine E54 with E46
3687             HC       2   2.753
                 *

3688             KK  RCPE46
3689             KM        Route flow from CP E46 to CP E47
3690             KM     URS 2009; Typical Section
3691             RS       3    FLOW      -1
3692             RC   0.050   0.045   0.050    2766  0.0040
3693             RX       0     500     700     750     800     900    1100    1600
3694             RY       6       4       2       0       0       2       4       6
                 *

3695             KK   DRE25
3696             KM    URS 2009
3697             KM        Return diverted flow from CP E25
3698             DR   DVE25
                 *
```

```
3699          KK   RDE25
3700          KM        Route flow from CP E25 to CP E45
3701          KM        Crossing at SR-238
3702          KM     URS 2009; Typical Section;
3703          RS       1    FLOW      -1
3704          RC   0.050   0.045   0.050    3337  0.0060
3705          RX       0     500     700     750     800     900    1100    1600
3706          RY       6       4       2       0       0       2       4       6
              *

3707          KK   DRE36
3708          KM    URS 2009
3709          KM        Return diverted flow from CP E36
3710          DR   DVE36
              *

3711          KK   RDE36
3712          KM        Route flow from CP E36 to CP E45
3713          KM        Crossing at SR-238
3714          KM     URS 2009; Typical Section
3715          RS       2    FLOW      -1
3716          RC   0.050   0.045   0.050    3266  0.0037
3717          RX       0     500     700     750     800     900    1100    1600
3718          RY       6       4       2       0       0       2       4       6
              *
1                                          HEC-1 INPUT                                                    PAGE 92

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

3719          KK     E45   BASIN
3720          KM     URS 2009
3721          BA   0.320
3722          LG    0.35    0.34    4.55    0.34       5
3723          UI       0     288     699     214      32       0       0       0       0       0
              *
3724          KM    URS 2009

3725          KK   CPE45
3726          KM        Combine E25, E36 with E45
3727          HC       3  16.345
              *

3728          KK  RCPE45
3729          KM        Route flow from CP E45 to CP E47
3730          KM     URS 2009; Typical Section
3731          RS       3    FLOW      -1
3732          RC   0.050   0.045   0.050    2982  0.0050
3733          RX       0     500     700     750     800     900    1100    1600
3734          RY       6       4       2       0       0       2       4       6
              *

3735          KK     E47   BASIN
3736          KM     URS 2009
3737          BA   0.493
3738          LG    0.35    0.35    4.65    0.32       5
3739          UI       0     633    1097     155       0       0       0       0       0       0
3740          UI       0       0       0       0       0       0       0       0       0       0
3741          UI       0       0       0       0       0       0       0       0       0       0
3742          UI       0       0       0       0       0       0       0       0       0       0
3743          UI       0       0       0       0       0       0       0       0       0       0
              *
3744          KM    URS 2009

3745          KK   CPE47
3746          KM        Combine E45, E46 with E47
3747          HC       3  19.591
              *

3748          KK  RCPE47
3749          KM        Route flow from CP E47 to CP E48
3750          KM     URS 2009; Typical Section
3751          RS       2    FLOW      -1
3752          RC   0.050   0.045   0.050    7173  0.0046
3753          RX       0     500     700     750     800     900    1100    1600
3754          RY       6       4       2       0       0       2       4       6
              *

3755          KK     E48   BASIN
3756          KM     URS 2009
3757          BA   0.861
3758          LG    0.35    0.35    4.60    0.33       0
3759          UI       0     284     832    1264     647     204      63      38       0       0
3760          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                                    PAGE 93

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

3761          UI       0       0       0       0       0       0       0       0       0       0
3762          UI       0       0       0       0       0       0       0       0       0       0
              *
3763          KM    URS 2009

3764          KK   CPE48
3765          KM        Combine E47 with E48
3766          HC       2  20.452
              *

3767          KK    G26A   BASIN
3768          KM     URS 2009
3769          KM    CUSTOM XKSAT VALUES
3770          BA   0.997
3771          LG    0.35    0.35    2.97    0.92       1
3772          UI       0     311     912    1451     787     262      84      42       0       0
3773          UI       0       0       0       0       0       0       0       0       0       0
3774          UI       0       0       0       0       0       0       0       0       0       0
```

```
                 *

3775             KK    G26B   BASIN
3776             KM     URS 2009
3777             KM    CUSTOM XKSAT VALUES
3778             BA   0.170
3779             LG    0.35    0.35    2.86    1.00       2
3780             UI       0     218     378      54       0       0       0       0       0       0
3781             UI       0       0       0       0       0       0       0       0       0       0
3782             UI       0       0       0       0       0       0       0       0       0       0
3783             UI       0       0       0       0       0       0       0       0       0       0
                 *

3784             KK  RCG26B
3785             KM       Route flow from Basin G26B to E48RIV
3786             KM       URS 2009
3787             KM       Typical Sheet Flow Route
3788             RS      30    FLOW      -1
3789             RC   0.050   0.045   0.050   11180  0.0106
3790             RX       0     500     700     750     800     900    1100    1600
3791             RY       6       4       2       0       0       2       4       6
                 *

3792             KK  E48RIV
3793             KM        Combine F35RIV, G26A and G26B with E48
3794             HC       4
                 *

3795             KK  RCPE48
3796             KM        Route flow from CP E48RIV to CP E49RIV (WATERMAN WASH)
3797             KM      THIS ROUTE IS FROM THE EEC STUDY
3798             RS       1    FLOW      -1
3799             RC   0.050   0.035   0.050    1620  0.0033
3800             RX       0      10     110     290     330     510     610     620
3801             RY  1254.5    1252    1252    1250    1250    1252    1252  1254.5
                 *
1                                                HEC-1 INPUT                                                    PAGE 94

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

3802             KK   DRE38
3803             KM    URS 2009
3804             KM        Return diverted flow from CP E38
3805             DR   DVE38
                 *

3806             KK   RDE38
3807             KM        Route flow from CP E38 to CP E44
3808             KM        Crossing at SR-238
3809             KM      URS 2009
3810             RS       2    FLOW      -1
3811             RC   0.050   0.045   0.050    7038  0.0051
3812             RX       0      50      62     243     244     432     476     810
3813             RY  1318.1  1318.1  1318.1  1318.0  1318.0  1317.5  1317.6  1318.8
                 *

3814             KK   DRE30
3815             KM    URS 2009
3816             KM        Return diverted flow from CP E30
3817             DR   DVE30
                 *

3818             KK   RDE30
3819             KM        Route flow from CP E30 to CP E44
3820             KM        Crossing at SR-238
3821             KM      URS 2009
3822             RS       8    FLOW      -1
3823             RC   0.050   0.045   0.050    9020  0.0058
3824             RX       0     500     700     750     800     900    1100    1600
3825             RY       6       4       2       0       0       2       4       6
                 *

3826             KK     E44   BASIN
3827             KM     URS 2009
3828             KM        Customized XKSAT Values
3829             BA   0.629
3830             LG    0.35    0.35    3.95    0.47       0
3831             UI       0     156     468     839     563     258     100      26      24       0
3832             UI       0       0       0       0       0       0       0       0       0       0
3833             UI       0       0       0       0       0       0       0       0       0       0
3834             UI       0       0       0       0       0       0       0       0       0       0
                 *
3835             KM    URS 2009

3836             KK   CPE44
3837             KM        Combine E38, E30, with E44
3838             HC       3  16.149
                 *
1                                                HEC-1 INPUT                                                    PAGE 95

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

3839             KK  RCPE44
3840             KM        Route flow from CP E44 to CP E50
3841             KM      URS 2009
3842             RS       2    FLOW      -1
3843             RC   0.050   0.045   0.050    5228  0.0061
3844             RX       0      89      95     100     125     155     181     224
3845             RY  1284.0  1280.0  1280.0  1280.0  1280.0  1280.0  1288.0  1288.0
                 *

3846             KK   DRE31
3847             KM    URS 2009
3848             KM        Return diverted flow from CP E31
```

```
3849          DR   DVE31
              *

3850          KK   RDE31
3851          KM        Route flow from CP E31 to CP E43
3852          KM        Crossing at SR-238
3853          KM      URS 2009
3854          RS       2    FLOW      -1
3855          RC   0.050   0.045   0.050    8524  0.0056
3856          RX       0      75     153     193     293     387     598     622
3857          RY  1318.5  1318.3  1318.2  1318.3  1318.2  1318.3  1318.9  1318.9
              *

3858          KK     E43   BASIN
3859          KM     URS 2009
3860          BA   0.714
3861          LG    0.35    0.35    4.30    0.40       0
3862          UI       0     223     653    1039     564     187      60      30       0       0
3863          UI       0       0       0       0       0       0       0       0       0       0
3864          UI       0       0       0       0       0       0       0       0       0       0
3865          UI       0       0       0       0       0       0       0       0       0       0
              *
3866          KM    URS 2009

3867          KK   CPE43
3868          KM        Combine E31 with E43
3869          HC       2   1.546
              *

3870          KK  RCPE43
3871          KM        Route flow from CP E43 to CP E50
3872          KM      URS 2009
3873          RS       6    FLOW      -1
3874          RC   0.050   0.045   0.050    8524  0.0042
3875          RX       0      89      95     100     125     155     181     224
3876          RY  1284.0  1280.0  1280.0  1280.0  1280.0  1280.0  1288.0  1288.0
              *
```



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

3877          KK     E50   BASIN
3878          KM     URS 2009
3879          BA   0.699
3880          LG    0.10    0.25    4.60    0.48      54
3881          UI       0     537    1452     587     103       0       0       0       0       0
3882          UI       0       0       0       0       0       0       0       0       0       0
3883          UI       0       0       0       0       0       0       0       0       0       0
3884          UI       0       0       0       0       0       0       0       0       0       0
              *
3885          KM    URS 2009

3886          KK   CPE50
3887          KM        Combine E44, E43, with E50
3888          HC       3  18.782
              *

3889          KK  RCPE50
3890          KM        Route flow from CP E50 to CP E49
3891          KM      URS 2009
3892          RS       2    FLOW      -1
3893          RC   0.050   0.045   0.050    3300  0.0031
3894          RX       0     500     700     750     800     900    1100    1600
3895          RY       6       4       2       0       0       2       4       6
              *

3896          KK     E52   BASIN
3897          KM     URS 2009
3898          BA   0.164
3899          LG    0.10    0.25    4.65    0.46      52
3900          UI       0     557       0       0       0       0       0       0       0       0
3901          UI       0       0       0       0       0       0       0       0       0       0
3902          UI       0       0       0       0       0       0       0       0       0       0
3903          UI       0       0       0       0       0       0       0       0       0       0
              *

3904          KK  RCPE52
3905          KM        Route flow from CP E52 to CP E49
3906          KM       Typical Sheet Flow Small Wash
3907          KM      URS 2009
3908          RS       5    FLOW      -1
3909          RC   0.050   0.045   0.050    3467  0.0031
3910          RX       0     600     700     706     711     717     817    1417
3911          RY       6       4       3       0       0       3       4       6
              *

3912          KK     E49   BASIN
3913          KM     URS 2009
3914          KM        Customized XKSAT Values
3915          BA   0.224
3916          LG    0.32    0.34    3.48    0.67       4
3917          UI       0      78     230     330     160      48      14       0       0       0
3918          UI       0       0       0       0       0       0       0       0       0       0
3919          UI       0       0       0       0       0       0       0       0       0       0
3920          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

3921          KM    URS 2009

3922          KK   CPE49
3923          KM        Combine E50, E52 with E49
3924          HC       3  19.707
```

```
                 *

3925             KK  E49RIV
3926             KM        Combine E48RIV with E49
3927             HC       2  86.188
                 *

3928             KK  RCPE49
3929             KM        Route flow from CP E49RIV to CP G27RIV (WATERMAN WASH)
3930             KM      THIS ROUTE IS FROM THE EEC STUDY
3931             RS       1    FLOW      -1
3932             RC   0.050   0.035   0.050    2650  0.0027
3933             RX       0      15     310     390     430     510     760     775
3934             RY    1246    1243    1242    1240    1240    1242    1243    1246
                 *

3935             KK     G18   BASIN
3936             KM     URS 2009
3937             KM        Customized XKSAT Values
3938             BA   0.322
3939             LG    0.35    0.35    3.48    0.64      29
3940             UI       0     244     665     275      49       0       0       0       0       0
3941             UI       0       0       0       0       0       0       0       0       0       0
3942             UI       0       0       0       0       0       0       0       0       0       0
3943             UI       0       0       0       0       0       0       0       0       0       0
                 *

3944             KK    DG18
3945             KM      Divert flow into G17
3946             KM        Natural divergence of flow due to a braided channel network.
3947             DT   DVG18
3948             DI       0     188     910    2093    3687    5813    8374   11292   14543
3949             DQ       0     142     567    1218    2049    3042    4181    5456    6858
                 *

3950             KK  RCPG18
3951             KM        Route remainder flow from CP G18 to CP G27
3952             KM       URS 2009
3953             KM       Typical Sheet Flow Route
3954             RS      40    FLOW      -1
3955             RC   0.050   0.045   0.050    8216  0.0078
3956             RX       0     500     700     750     800     900    1100    1600
3957             RY       6       4       2       0       0       2       4       6
                 *
1                                          HEC-1 INPUT                                          PAGE 98

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

3958             KK     G27   BASIN
3959             KM     URS 2009
3960             KM    CUSTOM XKSAT VALUE
3961             BA   1.408
3962             LG    0.35    0.35    3.13    0.83       0
3963             UI       0     353    1056    1886    1256     569     222      56      54       0
3964             UI       0       0       0       0       0       0       0       0       0       0
                 *
3965             KM    URS 2009

3966             KK   CPG27
3967             KM        Combine G18 with G27
3968             HC       2   1.514
                 *

3969             KK  G27RIV
3970             KM        Combine F35RIV with G27
3971             HC       2  87.918
                 *

3972             KK  RCPG27
3973             KM        Route flow from CP G27RIV to CP G28RIV (WATERMAN WASH)
3974             KM    THIS ROUTE IS FROM THE EEC STUDY
3975             RS       2    FLOW      -1
3976             RC   0.050   0.035   0.050    3180  0.0025
3977             RX       0       8    2500    2540    2590    2630    3010    3018
3978             RY    1249  1247.5    1237    1234    1234    1237  1247.5    1249
                 *

3979             KK     G28   BASIN
3980             KM     URS 2009
3981             KM    Customized XKSAT Values
3982             BA   0.282
3983             LG    0.35    0.35    3.64    0.57       0
3984             UI       0     141     444     358     112      26       0       0       0       0
3985             UI       0       0       0       0       0       0       0       0       0       0
3986             UI       0       0       0       0       0       0       0       0       0       0
3987             UI       0       0       0       0       0       0       0       0       0       0
                 *

3988             KK  G28RIV
3989             KM        Combine G27RIV with G28
3990             HC       2  88.226
                 *

3991             KK  RCPG28
3992             KM        Route flow from CP G28RIV to CP E51RIV (WATERMAN WASH)
3993             KM    THIS ROUTE IS FROM THE EEC STUDY
3994             RS       1    FLOW      -1
3995             RC   0.050   0.035   0.050    1930  0.0027
3996             RX       0      10    2010    2090    2130    2210    4260    4270
3997             RY  1245.5    1243    1232    1230    1230    1232    1243  1245.5
                 *
1                                          HEC-1 INPUT                                          PAGE 99

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
3998          KK     E51   BASIN
3999          KM     URS 2009
4000          BA   1.253
4001          LG    0.34    0.35    4.65    0.32       0
4002          UI       0     181     599     967    1364     863     495     200      96      38
4003          UI      38       0       0       0       0       0       0       0       0       0
4004          UI       0       0       0       0       0       0       0       0       0       0
4005          UI       0       0       0       0       0       0       0       0       0       0
4006          UI       0       0       0       0       0       0       0       0       0       0
              *

4007          KK  E51RIV
4008          KM        Combine G28RIV with E51
4009          HC       2  89.479
              *

4010          KK  RCPE51
4011          KM        Route flow from CP E51RIV to CP G17RIV (WATERMAN WASH)
4012          KM    THIS ROUTE IS FROM THE EEC STUDY
4013          RS       2    FLOW      -1
4014          RC   0.050   0.035   0.050     817  0.0048
4015          RX       0    1200    2400    2480    2520    2600    3400    4200
4016          RY    1230    1225    1222    1220    1220    1222    1225    1230
              *

4017          KK   DRG18
4018          KM        Return diverted flow from CP G18
4019          DR   DVG18
              *
4020          KM    URS 2009

4021          KK   RDG18
4022          KM        Route flow from CP G18 to CP G17
4023          RS      19    FLOW      -1
4024          RC   0.050   0.045   0.050   11367  0.0070
4025          RX       0     504     612     700     950    1160    1161    1162
4026          RY    1270  1269.5  1269.7  1269.8  1269.9  1270.2  1270.2  1270.2
              *

4027          KK     G17   BASIN
4028          KM     URS 2009
4029          KM        Customized XKSAT Values
4030          BA   0.602
4031          LG    0.23    0.29    3.55    0.73      47
4032          UI       0     242     740     858     348     101      29       0       0       0
4033          UI       0       0       0       0       0       0       0       0       0       0
4034          UI       0       0       0       0       0       0       0       0       0       0
4035          UI       0       0       0       0       0       0       0       0       0       0
              *
4036          KM    URS 2009
```



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

4037          KK  G17RIV
4038          KM        COMBINE DRG18, G17, G28RIV
4039          HC       3  90.297
              *

4040          KK  RCPG17
4041          KM        Route flow from CP G17RIV to CP E41RIV (WATERMAN WASH)
4042          RS       1    FLOW      -1
4043          RC   0.050   0.035   0.050    2119  0.0018
4044          RX       0      20     280     290     330     340     635     655
4045          RY    1216    1212    1210    1207    1207    1210    1212    1216
              *

4046          KK   DRE53
4047          KM        Return diverted flow from CP E53
4048          DR   DVE53
              *

4049          KK   RDE53
4050          KM        Route flow from CP E53 to CP E42
4051          KM        Crossing at SR-238
4052          KM     URS 2009
4053          RS       3    FLOW      -1
4054          RC   0.050   0.045   0.050    8852  0.0059
4055          RX       0     241     279     280     400     500     671     776
4056          RY  1336.4  1336.2  1336.0  1336.0  1336.0  1336.0  1336.0  1336.4
              *

4057          KK   DRE32
4058          KM    URS 2009
4059          KM        Return diverted flow from CP E32
4060          DR   DVE32
              *

4061          KK   RDE32
4062          KM        Route flow from CP E32 to CP E42
4063          KM        Crossing at SR-238
4064          KM     URS 2009
4065          RS       1    FLOW      -1
4066          RC   0.050   0.045   0.050    2750  0.0055
4067          RX       0     500     700     750     800     900    1100    1600
4068          RY       6       4       2       0       0       2       4       6
              *

4069          KK   DRE33
4070          KM    URS 2009
4071          KM        Return diverted flow from CP E33
4072          DR   DVE33
              *
```

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

4073          KK   RDE33
4074          KM        Route flow from CP E33 to CP E42
4075          KM     URS 2009
4076          KM        Crossing at SR-238
4077          RS       1    FLOW      -1
4078          RC   0.050   0.045   0.050   10473  0.0057
4079          RX       0     128     201     259     334     396     456     588
4080          RY  1352.0  1352.0  1350.9  1350.6  1350.7  1351.4  1352.0  1352.0
              *

4081          KK     E42   BASIN
4082          KM     URS 2009
4083          KM        Customized XKSAT Values
4084          BA   0.926
4085          LG    0.35    0.35    3.88    0.49       0
4086          UI       0     183     566    1044     916     528     202      84      32       0
4087          UI       0       0       0       0       0       0       0       0       0       0
4088          UI       0       0       0       0       0       0       0       0       0       0
4089          UI       0       0       0       0       0       0       0       0       0       0
              *
4090          KM    URS 2009

4091          KK   CPE42
4092          KM        Combine E53, E33, E32 with E42
4093          HC       4   2.70
              *

4094          KK  RCPE42
4095          KM        Route flow from CP E42 to CP E41
4096          KM     URS 2009
4097          RS       9    FLOW      -1
4098          RC   0.050   0.045   0.050   13700  0.0051
4099          RX       0     500     700     750     800     900    1100    1600
4100          RY       6       4       2       0       0       2       4       6
              *

4101          KK     E41   BASIN
4102          KM     URS 2009
4103          BA   0.670
4104          LG    0.35    0.35    4.70    0.30       0
4105          UI       0      74     263     401     664     509     336     173      87      42
4106          UI      18      18       0       0       0       0       0       0       0       0
              *

4107          KK   CPE41
4108          KM    URS 2009
4109          KM        Combine E42 with E41
4110          HC       2   3.374
              *
```



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

4111          KK     G16   BASIN
4112          KM     URS 2009
4113          KM        Customized XKSAT Values
4114          BA   1.423
4115          LG    0.35    0.35    3.60    0.58      10
4116          UI       0     328     997    1810    1287     630     235      75      52       0
4117          UI       0       0       0       0       0       0       0       0       0       0
4118          UI       0       0       0       0       0       0       0       0       0       0
4119          UI       0       0       0       0       0       0       0       0       0       0
4120          UI       0       0       0       0       0       0       0       0       0       0
              *

4121          KK     G29   BASIN
4122          KM     URS 2009
4123          BA   2.812
4124          LG    0.35    0.35    4.10    0.44       0
4125          UI       0     658    1999    3630    2582    1264     471     151     105       0
4126          UI       0       0       0       0       0       0       0       0       0       0
              *

4127          KK  E41RIV
4128          KM        Combine G17RIV, G29, G16 with CPE41
4129          HC       4 111.167
              *

4130          KK  RCPE41
4131          KM        Route flow from CP E41RIV to CP G30RIV (WATERMAN WASH)
4132          KM     THIS ROUTE IS FROM THE EEC STUDY
4133          RS       1    FLOW      -1
4134          RC   0.050   0.035   0.050    3070  0.0025
4135          RX       0      20     280     290     330     340     635     655
4136          RY    1216    1212    1210    1207    1207    1210    1212    1216
              *

4137          KK    DE41
4138          KM      Temporary Diversion to reduce hydrograph stack.
4139          KM      Divert flow into G30
4140          KM        Natural divergence of flow due to a braided channel network.
4141          DT   DVE41
4142          DI       0      10     100    1000   10000  100000
4143          DQ       0      10     100    1000   10000  100000
              * ******************************************************************************
              *

4144          KK     G44   BASIN
4145          KM     URS 2009
4146          KM    Customized XKSAT Values
4147          BA   0.728
```

```
4148    LG    0.35    0.35    2.52    1.32       0
4149    UI       0    1108    1143     381     131      41       0       0       0       0
4150    UI       0       0       0       0       0       0       0       0       0       0
4151    UI       0       0       0       0       0       0       0       0       0       0
        *
```

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

4152    KK  RCPG44
4153    KM        Route flow from CP G44 to CP G06
4154    KM     URS 2009
4155    RS       7    FLOW      -1
4156    RC   0.050   0.045   0.050   11803  0.0159
4157    RX       0     223     289     336     385     409     410     412
4158    RY    1583    1582    1581    1580    1580    1581    1582    1583
        *

4159    KK     G06   BASIN
4160    KM     URS 2009
4161    KM        Customized XKSAT Values
4162    BA   2.155
4163    LG    0.35    0.35    3.85    0.50       3
4164    UI       0    1540    4329    1986     382       0       0       0       0       0
4165    UI       0       0       0       0       0       0       0       0       0       0
4166    UI       0       0       0       0       0       0       0       0       0       0
4167    UI       0       0       0       0       0       0       0       0       0       0
        *
4168    KM    URS 2009

4169    KK   CPG06
4170    KM        Combine G44 with G06
4171    HC       2   2.883
        *

4172    KK    DG06
4173    KM      Divert flow into G45
4174    KM        Natural divergence of flow due to a braided channel network.
4175    DT   DVG06
4176    DI       0     588    1874    3877    6503    9711   13493   23541   29420   35904
4177    DQ       0     300     943    1953    3306    4980    6976   12685   16022   19659
        *

4178    KK  RCPG06
4179    KM        Route remainder flow from CP G06 to CP G07
4180    KM     URS 2009
4181    KM       Typical Sheet Flow Route
4182    RS       8    FLOW      -1
4183    RC   0.050   0.045   0.050   14760  0.0110
4184    RX       0    1000    1200    1250    1300    1400    1600    2600
4185    RY       6       4       2       0       0       2       4       6
        *

4186    KK     G07   BASIN
4187    KM     URS 2009
4188    BA   1.357
4189    LG    0.35    0.35    4.15    0.43       8
4190    UI       0     328     991    1785    1229     578     221      63      51       0
4191    UI       0       0       0       0       0       0       0       0       0       0
4192    UI       0       0       0       0       0       0       0       0       0       0
4193    UI       0       0       0       0       0       0       0       0       0       0
4194    UI       0       0       0       0       0       0       0       0       0       0
        *
```

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

4195    KM    URS 2009

4196    KK   CPG07
4197    KM        Combine G06 with G07
4198    HC       2   2.790
        *

4199    KK   DG07E
4200    KM      Divert flow into G30
4201    KM     FLOW-2D 2009
4202    KM        Natural divergence of flow due to a braided channel network.
4203    DT  DVG07E
4204    DI       0      62     178     303     479     661     783    1253    1587    1727
4205    DQ       0      51     116     174     246     316     364     613     693     716
        *

4206    KK   DG07W
4207    KM      Divert flow into G47
4208    KM     FLOW-2D 2009
4209    KM        Natural divergence of flow due to a braided channel network.
4210    DT  DVG07W
4211    DI       0      84     135     260     329     574    1189    2393    3481    4755
4212    DQ       0      82     130     248     312     549    1142    2306    3380    4603
        *

4213    KK  RCPG07
4214    KM        Route flow from CP G07 to CP G43
4215    KM       URS 2009
4216    KM       Typical Sheet Flow Route
4217    RS      29    FLOW      -1
4218    RC   0.050   0.045   0.050   19180  0.0127
4219    RX       0     500     700     750     800     900    1100    1600
4220    RY       6       4       2       0       0       2       4       6
        *

4221    KK     G08   BASIN
4222    KM     URS 2009
4223    KM        Customized XKSAT Values
```

```
4224          BA   0.401
4225          LG    0.35    0.35    3.95    0.47       0
4226          UI       0     107     316     552     348     146      55      16       0       0
4227          UI       0       0       0       0       0       0       0       0       0       0
4228          UI       0       0       0       0       0       0       0       0       0       0
4229          UI       0       0       0       0       0       0       0       0       0       0
4230          UI       0       0       0       0       0       0       0       0       0       0
              *

4231          KK    DG08
4232          KM      Divert flow into G09
4233          KM     URS 2009
4234          KM        Natural divergence of flow due to a braided channel network.
4235          DT   DVG08
4236          DI       0     141     543    1272    2332    3777    5505    7489    9708   12149
4237          DQ       0       0      37     217     582    1202    1987    2918    3982    5170
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4238          KK  RCPG08
4239          KM        Route remainder flow from CP G08 to CP G45
4240          KM     URS 2009
4241          RS       1    FLOW      -1
4242          RC   0.050   0.045   0.050    1505  0.0080
4243          RX       0      64     171     180     185     190     194     298
4244          RY    1377  1376.6    1376    1376    1376    1376    1376    1378
              *

4245          KK     G05   BASIN
4246          KM     URS 2009
4247          KM        Customized XKSAT Values
4248          BA   1.587
4249          LG    0.35    0.35    2.53    1.31       0
4250          UI       0    1101    2616    1293     612     288     129      61       0       0
4251          UI       0       0       0       0       0       0       0       0       0       0
4252          UI       0       0       0       0       0       0       0       0       0       0
              *

4253          KK  RCPG05
4254          KM        Route flow from CP G05 to CP G46
4255          KM     URS 2009
4256          RS       9    FLOW      -1
4257          RC   0.050   0.045   0.050   16730  0.0179
4258          RX       0     500     700     750     800     900    1100    1600
4259          RY       6       4       2       0       0       2       4       6
              *

4260          KK     G46   BASIN
4261          KM     URS 2009
4262          KM     Customized XKSAT Values
4263          BA   1.413
4264          LG    0.35    0.35    3.95    0.47       6
4265          UI       0     342    1032    1858    1280     602     230      66      53       0
4266          UI       0       0       0       0       0       0       0       0       0       0
4267          UI       0       0       0       0       0       0       0       0       0       0
              *
4268          KM    URS 2009

4269          KK    CPG46
4270          KM        Combine G05 with G46
4271          HC       2     3.0
              *

4272          KK     G04   BASIN
4273          KM     URS 2009
4274          KM        Customized XKSAT Values
4275          BA   2.343
4276          LG    0.35    0.35    3.85    0.50       5
4277          UI       0     713    2088    3389    1883     656     210      98       0       0
4278          UI       0       0       0       0       0       0       0       0       0       0
4279          UI       0       0       0       0       0       0       0       0       0       0
4280          UI       0       0       0       0       0       0       0       0       0       0
4281          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4282          KM    URS 2009

4283          KK    CPG04
4284          KM        Combine G46 with G04
4285          HC       2   5.343
              *

4286          KK  RCPG04
4287          KM        Route flow from CP G04 to CP G45
4288          KM     URS 2009
4289          RS       2    FLOW      -1
4290          RC   0.050   0.045   0.050    5660  0.0088
4291          RX       0    1082    1111    1164    1218    1249    1388    2390
4292          RY    1395    1394  1393.4  1393.3    1394    1394  1394.3  1394.3
              *

4293          KK    DRG06
4294          KM        Return diverted flow from CP G06
4295          DR   DVG06
              *

4296          KK    RDG06
4297          KM        Route flow from CP G06 to CP G45
4298          KM     URS 2009
4299          RS      14    FLOW      -1
```

```
4300          RC   0.050   0.045   0.050   16252  0.0105
4301          RX       0    1092    1100    1105    1110    1151    1290    2427
4302          RY    1457  1456.3  1456.1  1456.1  1456.1  1456.5  1456.6  1456.8
              *

4303          KK     G45   BASIN
4304          KM     URS 2009
4305          BA   1.997
4306          LG    0.35    0.35    4.40    0.37       0
4307          UI       0     147     565     861    1254    1724    1210     852     522     252
4308          UI     161      65      45      45       0       0       0       0       0       0
              *
4309          KM    URS 2009

4310          KK   CPG45
4311          KM        Combine G08, G04, DRG06, with G45
4312          HC       4   9.170
              *

4313          KK  RCPG45
4314          KM        Route flow from CP G45 to CP G31
4315          KM     URS 2009
4316          RS       2    FLOW      -1
4317          RC   0.050   0.045   0.050    3174  0.0088
4318          RX       0    1583    1650    1675    1700    1750    1809    2870
4319          RY  1360.7    1358    1358    1358    1358    1358    1358  1360.7
              *
              *
```



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

4320          KK     G31   BASIN
4321          KM     URS 2009
4322          BA   0.182
4323          LG    0.35    0.35    4.10    0.44       0
4324          UI       0     130     366     168      32       0       0       0       0       0
4325          UI       0       0       0       0       0       0       0       0       0       0
4326          UI       0       0       0       0       0       0       0       0       0       0
              *
4327          KM    URS 2009

4328          KK   CPG31
4329          KM        Combine G45 with G31
4330          HC       2   9.352
              *

4331          KK  DG31E
4332          KM    Divert flow from CP G31 East into basin G43
4333          KM    FLOW-2D 2009
4334          KM        Natural divergence of flow due to a braided channel network.
4335          DT  DVG31E
4336          DI       0     153     285     444     820    1254    1574    2300    3367    5525
4337          DQ       0     153     246     386     733    1120    1395    2039    3039    4980
              *

4338          KK  DG31W
4339          KM    Divert flow from CP G31 West into basin G13
4340          KM    FLOW-2D 2009
4341          KM        Natural divergence of flow due to a braided channel network.
4342          DT  DVG31W
4343          DI       0     257     303     569     994    1305    1813    2037    3903    6260
4344          DQ       0      53      99     183     261     312     417     472     864    1238
              *

4345          KK  RCPG31
4346          KM        Route remainder flow from CP G31 to CP G47
4347          KM       URS 2009
4348          KM       Typical Sheet Flow Route
4349          RS       3    FLOW      -1
4350          RC   0.050   0.045   0.050    4120  0.0103
4351          RX       0     500     700     750     800     900    1100    1600
4352          RY       6       4       2       0       0       2       4       6
              *

4353          KK  DG47E
4354          KM    Divert flow from G47 East into basin G14 and G13
4355          KM        Remainder of flows goes into G47
4356          KM    FLOW-2D 2009
4357          KM        Natural divergence of flow due to a braided channel network.
4358          DT  DVG47E
4359          DI       0     104     450     828    1308    1605    1951    2529    2945    3210
4360          DQ       0     103     442     784    1182    1414    1672    2084    2385    2551
              *
```



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

4361          KK  DRG07W
4362          KM        RETURN DIVERTED FLOW FROM CPG07W
4363          DR  DVG07W
              *

4364          KK     G47   BASIN
4365          KM     URS 2009
4366          KM    Customized XKSAT Values
4367          BA   0.121
4368          LG    0.35    0.35    3.95    0.47       0
4369          UI       0     106     262      85      13       0       0       0       0       0
4370          UI       0       0       0       0       0       0       0       0       0       0
4371          UI       0       0       0       0       0       0       0       0       0       0
4372          UI       0       0       0       0       0       0       0       0       0       0
              *
4373          KM    FLOW-2D 2009
```

```
4374          KK   CPG47
4375          KM        COMBINE G47E, DG07W, WITH G47
4376          HC       3   1.502
              *

4377          KK  DG47
4378          KM    FLOW-2D 2009
4379          KM      Divert flow from CP G47 into basin G32
4380          KM        Natural divergence of flow due to a braided channel network.
4381          DT  DVG47
4382          DI       0     119     489     834    1322    1782    1978    2413    3168    3800
4383          DQ       0      56     199     311     462     599     658     786    1019    1200
              *

4384          KK  RCPG47
4385          KM        ROUTE REMAINDER FLOW FROM CP G47 TO CP G43
4386          KM     URS 2009
4387          RS       9    FLOW      -1
4388          RC   0.050   0.045   0.050   12079  0.0078
4389          RX       0     134     306     350     375     399     441     445
4390          RY  1263.8  1263.2    1262    1262    1262    1262  1263.1  1263.2
              *

4391          KK  DRG31E
4392          KM        RETURN DIVERTED FLOW FROM CP G31
4393          DR  DVG31E
              *

4394          KK  RDG31E
4395          KM        Return diverted flow from CP G31 to CP G43
4396          KM       URS 2009
4397          KM       Typical Sheet Flow Route
4398          RS       7    FLOW      -1
4399          RC   0.050   0.045   0.050   16700  0.0073
4400          RX       0     500     700     750     800     900    1100    1600
4401          RY       6       4       2       0       0       2       4       6
              *
```



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

4402          KK     G43   BASIN
4403          KM     URS 2009
4404          BA   2.170
4405          LG    0.35    0.35    4.10    0.44       0
4406          UI       0     206     769    1160    1914    1737    1177     733     321     198
4407          UI      68      55      55       0       0       0       0       0       0       0
              *
4408          KM    URS 2009

4409          KK   CPG43
4410          KM        Combine G07, DRG31, G47 with G43
4411          HC       4   11.48
              *

4412          KK  DRG07E
4413          KM        Return diverted flow from CPG07E
4414          DR  DVG07E
              *

4415          KK  RDG07E
4416          KM        Route flow from CP G07 to CP G30
4417          KM        FLOW-2D 2009
4418          KM        Typical Sheet Flow Route
4419          RS      12    FLOW      -1
4420          RC   0.050   0.045   0.050   20349  0.0083
4421          RX       0    1000    1200    1250    1300    1400    1600    2600
4422          RY       6       4       2       0       0       2       4       6
              *

4423          KK     G30   BASIN
4424          KM     URS 2009
4425          BA   3.704
4426          LG    0.35    0.35    4.10    0.44       0
4427          UI       0     512    1708    2718    4005    2599    1558     645     327     109
4428          UI     109       0       0       0       0       0       0       0       0       0
4429          UI       0       0       0       0       0       0       0       0       0       0
4430          UI       0       0       0       0       0       0       0       0       0       0
              *

4431          KK   DRE41
4432          KM        Return diverted flow from CP E41
4433          DR   DVE41
              *

4434          KK  G30RIV
4435          KM        Combine DVE41,G30 with DVG07E
4436          HC       3 103.146
              *
```



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

4437          KK  RCPG30
4438          KM        Route flow from CP G30RIV to CP D27RIV (WATERMAN WASH)
4439          KM     THIS ROUTE IS FROM THE EEC STUDY
4440          RS       2    FLOW      -1
4441          RC   0.050   0.035   0.050    4340  0.0020
4442          RX       0       9      40     440     480     530     780     789
4443          RY    1210 1208.25    1207    1204    1204    1207 1208.25    1210
              *

4444          KK   DRD17
```

```
4445          KM        Return diverted flow from CP D17
4446          DR   DVD17
              *

4447          KK   RDD17
4448          KM    This is in the 10-foot contour area, used the EEC route.
4449          KM        Route flow from CP D17 to CP D23
4450          KM        Crossing at SR-238
4451          RS       6    FLOW      -1
4452          RC   0.050   0.045   0.050   12320  0.0061
4453          RX     280     300     320     330     340     350     370     390
4454          RY    1344    1342    1341    1340    1340    1341    1342    1344
              *

4455          KK   DRD18
4456          KM        Return diverted flow from CP D18
4457          DR   DVD18
              *

4458          KK   RDD18
4459          KM    This is in the 10-foot contour area, used the EEC route.
4460          KM        Route flow from CP D18 to CP D23
4461          KM        Crossing at SR-238
4462          RS       9    FLOW      -1
4463          RC   0.050   0.045   0.050   11500  0.0061
4464          RX     270     290     320     330     340     350     380     400
4465          RY    1343    1342    1341    1340    1340    1341    1342    1343
              *

4466          KK     D23   BASIN
4467          KM     URS 2009
4468          KM    Customized XKSAT Values
4469          BA   0.709
4470          LG    0.35    0.35    3.95    0.47       0
4471          UI       0     109     358     597     766     473     248     106      45      22
4472          UI       0       0       0       0       0       0       0       0       0       0
4473          UI       0       0       0       0       0       0       0       0       0       0
4474          UI       0       0       0       0       0       0       0       0       0       0
              *
4475          KM    URS 2009
```

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

4476          KK   CPD23
4477          KM        Combine D17, D18 with D23
4478          HC       3   3.095
              *

4479          KK   DRD19
4480          KM        Return diverted flow from CP D19
4481          DR   DVD19
              *

4482          KK   RDD19
4483          KM    This is in the 10-foot contour area, used the EEC route.
4484          KM        Route flow from CP D19 to CP D24
4485          KM        Crossing at SR-238
4486          RS       6    FLOW      -1
4487          RC   0.050   0.045   0.050   10380  0.0073
4488          RX       0     210     430     445     455     470     790     975
4489          RY    1343    1342    1342    1340    1340    1342    1342    1343
              *

4490          KK     D24   BASIN
4491          KM    Customized XKSAT Values
4492          KM     URS 2009
4493          BA   0.431
4494          LG    0.35    0.35    3.64    0.57       0
4495          UI       0      94     286     528     409     221      77      30      16       0
4496          UI       0       0       0       0       0       0       0       0       0       0
4497          UI       0       0       0       0       0       0       0       0       0       0
4498          UI       0       0       0       0       0       0       0       0       0       0
4499          UI       0       0       0       0       0       0       0       0       0       0
              *
4500          KM    URS 2009

4501          KK  CPD24A
4502          KM        Combine D19 with D24
4503          HC       2   0.472
              *
4504          KM    URS 2009

4505          KK   CPD24
4506          KM        Combine D23 with D24
4507          HC       2   3.567
              *

4508          KK  RCPD24
4509          KM        Route flow from CP D24 to CP D25
4510          KM     URS 2009
4511          RS       6    FLOW      -1
4512          RC   0.050   0.045   0.050    4389  0.0050
4513          RX       0     647     728     800     900    1000    1379    2024
4514          RY  1301.7  1300.0  1300.0  1300.0  1300.0  1300.0  1300.0  1301.7
              *
```

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

4515          KK   DRD20
4516          KM        Return diverted flow from CP D20
4517          DR   DVD20
              *
```

```
4518          KK  RDD20
4519          KM        Route flow from CP D20 to CP D25
4520          KM        Crossing at SR-238
4521          RS      25     FLOW      -1
4522          RC   0.050   0.045   0.050   13680  0.0063
4523          RX       0     175     335     355     365     390     540     710
4524          RY    1344    1343    1342    1340    1340    1342    1343    1344
              *

4525          KK   DRD21
4526          KM        Return diverted flow from CP D21
4527          DR   DVD21
              *

4528          KK  RDD21
4529          KM        Route flow from CP D21 to CP D25
4530          KM     URS 2009
4531          KM        Crossing at SR-238
4532          RS      93     FLOW      -1
4533          RC   0.050   0.045   0.050   13351  0.0061
4534          RX       0     114     358     430     500     600     848    1051
4535          RY  1301.2  1301.2  1300.3  1300.0  1300.0  1300.0  1300.0  1300.9
              *

4536          KK     D25   BASIN
4537          KM     URS 2009
4538          KM    Customized XKSAT Values
4539          BA   1.334
4540          LG    0.35    0.35    3.35    0.70       0
4541          UI       0     173     585     913    1420     960     606     253     144      44
4542          UI      38       0       0       0       0       0       0       0       0       0
4543          UI       0       0       0       0       0       0       0       0       0       0
4544          UI       0       0       0       0       0       0       0       0       0       0
4545          UI       0       0       0       0       0       0       0       0       0       0
              *
4546          KM    URS 2009

4547          KK   CPD25
4548          KM        Combine D24, D20, D21 with D25
4549          HC       4   5.541
              *

4550          KK  RCPD25
4551          KM        Route flow from CP D25 to CP D26
4552          KM     URS 2009
4553          RS      13     FLOW      -1
4554          RC   0.050   0.045   0.050   14043  0.0050
4555          RX       0    1120    1381    1469    1491    1500    1505    2020
4556          RY  1231.5  1229.8  1229.8  1230.0  1230.0  1230.0  1230.0  1231.5
              *
```



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

4557          KK     D26   BASIN
4558          KM     URS 2009
4559          BA   1.546
4560          LG    0.35    0.35    4.35    0.39       0
4561          UI       0     111     406     630     886    1313     961     688     458     214
4562          UI     142      75      34      34      34       0       0       0       0       0
4563          UI       0       0       0       0       0       0       0       0       0       0
4564          UI       0       0       0       0       0       0       0       0       0       0
4565          UI       0       0       0       0       0       0       0       0       0       0
              *
4566          KM    URS 2009

4567          KK   CPD26
4568          KM        Combine D25 with D26
4569          HC       2   7.087
              *

4570          KK  RCPD26
4571          KM        Route flow from CP D26 to CP D27
4572          KM     URS 2009
4573          RS       3     FLOW      -1
4574          RC   0.050   0.045   0.050    4758  0.0034
4575          RX       0      81      97     108     108     125     150     192
4576          RY  1208.2  1204.0  1204.0  1207.5  1208.0  1208.0  1208.0  1209.0
              *

4577          KK     D27   BASIN
4578          KM     URS 2009
4579          BA   0.259
4580          LG    0.35    0.36    5.00    0.27       0
4581          UI       0      60     182     331     239     120      44      15      10       0
4582          UI       0       0       0       0       0       0       0       0       0       0
4583          UI       0       0       0       0       0       0       0       0       0       0
4584          UI       0       0       0       0       0       0       0       0       0       0
4585          UI       0       0       0       0       0       0       0       0       0       0
              *
4586          KM    URS 2009

4587          KK   CPD27
4588          KM        Combine D26 with D27
4589          HC       2   7.346
              *

4590          KK  D27RIV
4591          KM    URS 2009
4592          KM        Combine G30RIV, G43, E41 (no Flow) with D27
4593          HC       4 123.216
              *
```

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

4594          KK  RCPD27
4595          KM        Route flow from CP D27RIV to CP D28RIV (WATERMAN WASH)
4596          KM    THIS ROUTE IS FROM THE EEC STUDY
4597          RS      1     FLOW      -1
4598          RC   0.050   0.035   0.050     830  0.0066
4599          RX       0     600    1300    1500    1520    1800    2300    2800
4600          RY    1208    1205    1203    1200    1200    1203    1205    1208
              *

4601          KK     D28   BASIN
4602          KM     URS 2009
4603          BA   1.808
4604          LG    0.35    0.35    4.60    0.33       0
4605          UI       0     131     494     758    1085    1554    1109     787     507     232
4606          UI     156      72      40      40       0       0       0       0       0       0
4607          UI       0       0       0       0       0       0       0       0       0       0
4608          UI       0       0       0       0       0       0       0       0       0       0
4609          UI       0       0       0       0       0       0       0       0       0       0
              *

4610          KK  D28RIV
4611          KM        Combine D27RIV with D28
4612          HC       2 124.903
              *

4613          KK  RCPD28
4614          KM        Route flow from CP D28RIV to CP D29RIV (WATERMAN WASH)
4615          KM    THIS ROUTE IS FROM THE EEC STUDY
4616          RS      1     FLOW      -1
4617          RC   0.050   0.035   0.050     670  0.0044
4618          RX       0     900    1500    1685    1705    1900    2500    3200
4619          RY    1205    1200    1198    1195    1195    1198    1200    1205
              *

4620          KK     D29   BASIN
4621          KM    Customized XKSAT Values
4622          KM     URS 2009
4623          BA   3.395
4624          LG    0.35    0.35    3.31    0.72       0
4625          UI       0     324    1208    1823    3012    2711    1836    1139     498     308
4626          UI     102      86      86       0       0       0       0       0       0       0
4627          UI       0       0       0       0       0       0       0       0       0       0
4628          UI       0       0       0       0       0       0       0       0       0       0
4629          UI       0       0       0       0       0       0       0       0       0       0
              *

4630          KK  D29RIV
4631          KM        Combine D28RIV with D29
4632          HC       2 128.409
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4633          KK  RCPD29
4634          KM        Route flow from CP D29RIV to CP D30RIV (WATERMAN WASH)
4635          KM    THIS ROUTE IS FROM THE EEC STUDY
4636          RS      1     FLOW      -1
4637          RC   0.050   0.035   0.050    1640  0.0026
4638          RX     730     750    1000    1100    1120    1300    1500    1520
4639          RY    1200    1195    1193    1190    1190    1193    1195    1200
              *

4640          KK     D30   BASIN
4641          KM     URS 2009
4642          KM    Customized XKSAT Values
4643          BA   0.426
4644          LG    0.35    0.35    3.85    0.50       0
4645          UI       0     104     313     563     384     179      69      19      16       0
4646          UI       0       0       0       0       0       0       0       0       0       0
4647          UI       0       0       0       0       0       0       0       0       0       0
4648          UI       0       0       0       0       0       0       0       0       0       0
4649          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

4650          KK  DRG47
4651          KM        Return diverted flow from CP G47
4652          DR  DVG47
              *

4653          KK  RDG47
4654          KM        Route flow from CP G47 to CP G32
4655          KM       URS 2009
4656          KM       Typical Sheet Flow Route
4657          RS     10     FLOW      -1
4658          RC   0.050   0.045   0.050   13439  0.0079
4659          RX       0     500     700     750     800     900    1100    1600
4660          RY       6       4       2       0       0       2       4       6
              *

4661          KK     G32   BASIN
4662          KM     URS 2009
4663          BA   1.142
4664          LG    0.35    0.35    4.20    0.42       0
4665          UI       0     243     743    1374    1094     601     214      85      41       0
4666          UI       0       0       0       0       0       0       0       0       0       0
4667          UI       0       0       0       0       0       0       0       0       0       0
              *
4668          KM    URS 2009

4669          KK   CPG32
```

```
4670          KM        Combine DRG47 with G32
4671          HC       2   1.713
              *
1                                        HEC-1 INPUT                                                    PAGE116

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

4672          KK  D30RIV
4673          KM        Combine D29RIV, G32 with D30
4674          HC       3 129.978
              *
              *

4675          KK  RCPD30
4676          KM        Route flow from CP D30RIV to CP D31RIV (WATERMAN WASH)
4677          KM    THIS ROUTE IS FROM THE EEC STUDY
4678          RS       1    FLOW      -1
4679          RC   0.050   0.035   0.050     960  0.0027
4680          RX     730     750    1000    1100    1120    1300    1600    1620
4681          RY    1199    1194    1192    1189    1189    1192    1194    1199
              *

4682          KK     D31   BASIN
4683          KM     URS 2009
4684          KM    Customized XKSAT Values
4685          BA   0.670
4686          LG    0.35    0.35    3.64    0.57       0
4687          UI       0      90     303     478     720     475     291     121      66      19
4688          UI      19       0       0       0       0       0       0       0       0       0
4689          UI       0       0       0       0       0       0       0       0       0       0
4690          UI       0       0       0       0       0       0       0       0       0       0
4691          UI       0       0       0       0       0       0       0       0       0       0
              *

4692          KK  D31RIV
4693          KM        Combine D30RIV with D31
4694          HC       2 130.647
              *

4695          KK  RCPD31
4696          KM        Route flow from CP D31RIV to CP G33RIV (WATERMAN WASH)
4697          KM    THIS ROUTE IS FROM THE EEC STUDY
4698          RS       1    FLOW      -1
4699          RC   0.050   0.035   0.050    1330  0.0034
4700          RX    1210    1230    1400    1480    1500    1600    1820    1840
4701          RY    1195    1190    1188    1185    1185    1188    1190    1195
              *
4702          KM    URS 2009

4703          KK     G33   BASIN
4704          BA   0.744
4705          LG    0.35    0.35    4.00    0.46       0
4706          UI       0     206     607    1044     632     251      90      30       0       0
4707          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4708          KK  G33RIV
4709          KM        Combine D31RIV with G33
4710          HC       2 131.391
              *

4711          KK  RCPG33
4712          KM        Route flow from CP G33RIV to CP D32RIV (WATERMAN WASH)
4713          RS       1    FLOW      -1
4714          RC   0.050   0.035   0.050     340  0.0030
4715          RX       0      10    2020    2040    2080    2100    4180    4190
4716          RY    1198    1196    1184    1180    1180    1184    1196    1198
              *

4717          KK     D32   BASIN
4718          KM     URS 2009
4719          BA   0.501
4720          LG    0.35    0.35    4.15    0.43       0
4721          UI       0     162     475     734     383     122      38      22       0       0
4722          UI       0       0       0       0       0       0       0       0       0       0
4723          UI       0       0       0       0       0       0       0       0       0       0
4724          UI       0       0       0       0       0       0       0       0       0       0
4725          UI       0       0       0       0       0       0       0       0       0       0
              *

4726          KK  DRG47E
4727          KM        Return diverted flow from G47 to G14
4728          DR  DVG47E
              *

4729          KK    DG13
4730          KM    Divert flow from G47 East into basin G13
4731          KM        Remainder of flows goes into G14
4732          KM    FLOW-2D 2009
4733          KM        Natural divergence of flow due to a braided channel network.
4734          DT   DVG13
4735          DI       0      70     542     784    1000    1414    1943    2238    2385    2551
4736          DQ       0      62     352     479     596     808    1101    1287    1385    1497
              *

4737          KK  RDG47E
4738          KM        Return diverted flow from G47 to CP G14
4739          KM       FLOW-2D 2009
4740          KM       Typical Sheet Flow Route
4741          RS       6    FLOW      -1
4742          RC   0.050   0.045   0.050    5227  0.0092
```

```
4743          RX       0     500     700     750     800     900    1100    1600
4744          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4745          KK     G14   BASIN
4746          KM     URS 2009
4747          KM        Customized XKSAT Values
4748          BA   0.136
4749          LG    0.35    0.35    3.95    0.47       0
4750          UI       0     100     276     122      23       0       0       0       0       0
4751          UI       0       0       0       0       0       0       0       0       0       0
4752          UI       0       0       0       0       0       0       0       0       0       0
4753          UI       0       0       0       0       0       0       0       0       0       0
              *

4754          KK  CPG14
4755          KM        Combine G14 with divert from G47
4756          HC       2   0.350
              *

4757          KK  RCPG14
4758          KM        Route flow from CP G14 to CP G34
4759          KM     URS 2009
4760          RS       6    FLOW      -1
4761          RC   0.050   0.045   0.050    5485  0.0088
4762          RX       0     197     250     339     443     445     445     450
4763          RY  1245.6  1244.2  1244.5    1245  1245.5  1245.5  1245.5  1245.5
              *

4764          KK     G34   BASIN
4765          KM     URS 2009
4766          KM    Customized XKSAT Values
4767          BA   0.205
4768          LG    0.35    0.35    3.95    0.47       0
4769          UI       0     141     404     197      39       0       0       0       0       0
4770          UI       0       0       0       0       0       0       0       0       0       0
4771          UI       0       0       0       0       0       0       0       0       0       0
4772          UI       0       0       0       0       0       0       0       0       0       0
              *

4773          KK  CPG34A
4774          KM    URS 2009
4775          KM        Combine G14 with G34
4776          HC       2   0.555
              *

4777          KK  DRG31W
4778          KM        RETURN DIVERTED FLOW FROM CP G31
4779          DR  DVG31W
              *

4780          KK  RDG31W
4781          KM        Return diverted flow from CP G31 to CP G13
4782          KM       URS 2009
4783          KM       Typical Sheet Flow Route
4784          RS      14    FLOW      -1
4785          RC   0.050   0.045   0.050   11948  0.0095
4786          RX       0     500     700     750     800     900    1100    1600
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4787          RY       6       4       2       0       0       2       4       6
              *

4788          KK     G13   BASIN
4789          KM     URS 2009
4790          KM        Customized XKSAT Values
4791          BA   0.498
4792          LG    0.35    0.35    3.95    0.47       0
4793          UI       0     100     308     569     490     279     106      43      17       0
4794          UI       0       0       0       0       0       0       0       0       0       0
4795          UI       0       0       0       0       0       0       0       0       0       0
4796          UI       0       0       0       0       0       0       0       0       0       0
              *

4797          KK   DRG13
4798          KM        Return diverted flow from G14
4799          DR   DVG13
              *

4800          KK   CPG13
4801          KM        Combine G13, DG13 and DRG31W
4802          KM      URS 2009
4803          HC       3   1.299
              *
              *

4804          KK   CPG34
4805          KM        Combine CPG13 with G34
4806          KM    URS 2009
4807          HC       2   1.854
              *

4808          KK  RCPG34
4809          KM         URS 2009
4810          KM        Route flow from CP G34 to CP G35
4811          RS       4    FLOW      -1
4812          RC   0.050   0.045   0.050    5390  0.0087
4813          RX       0      45     101     206     300     400     527     566
4814          RY    1205    1205  1204.6    1204    1204    1204  1204.7  1204.8
              *
```

```
4815          KK     G35   BASIN
4816          KM     URS 2009
4817          BA   0.527
4818          LG    0.35    0.35    4.00    0.46       0
4819          UI       0     133     398     709     468     210      82      20      20       0
4820          UI       0       0       0       0       0       0       0       0       0       0
4821          UI       0       0       0       0       0       0       0       0       0       0
4822          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4823          KK   CPG35
4824          KM    URS 2009
4825          KM        Combine G34 with G35
4826          HC       2   2.381
              *

4827          KK  D32RIV
4828          KM        Combine G33RIV, G35 with D32
4829          HC       3 133.259
              *

4830          KK  RCPD32
4831          KM        Route flow from CP D32RIV to CP D33RIV (WATERMAN WASH)
4832          KM     THIS ROUTE IS FROM THE EEC STUDY
4833          RS       1    FLOW      -1
4834          RC   0.050   0.035   0.050    2800  0.0027
4835          RX    1080    1100    1400    1480    1500    1600    1800    1820
4836          RY    1188    1183    1180    1178    1178    1181    1183    1188
              *

4837          KK   DRD13
4838          KM        Return diverted flow from CP D13
4839          DR   DVD13
              *

4840          KK   RDD13
4841          KM    This is in the 10-foot contour area, used the EEC route.
4842          KM        Route diverted flow from CP D13 to CP D22
4843          KM        Crossing at SR-238
4844          RS      16    FLOW      -1
4845          RC   0.050   0.045   0.050   34330  0.0050
4846          RX     430     450     500     520     570     590     620     640
4847          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *

4848          KK   DRD46
4849          KM        Return diverted flow from CP D46
4850          DR   DVD46
              *

4851          KK   RDD46
4852          KM    This is in the 10-foot contour area, used the EEC route.
4853          KM        Route diverted flow from CP D46 to CP D22
4854          KM        Crossing at SR-238
4855          RS      24    FLOW      -1
4856          RC   0.050   0.045   0.050   31100  0.0050
4857          RX       0     300     500     520     570     590     700     940
4858          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *
1                                                HEC-1 INPUT                                                    PAGE121

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

4859          KK   DRD10
4860          KM        Return diverted flow from CP D10
4861          DR   DVD10
              *

4862          KK   RDD10
4863          KM    This is in the 10-foot contour area, used the EEC route.
4864          KM        Route diverted flow from CP D10 to CP D22
4865          KM        Crossing at SR-238
4866          RS      16    FLOW      -1
4867          RC   0.050   0.045   0.050   30930  0.0050
4868          RX       0     300     500     520     570     590     700     940
4869          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *

4870          KK   DRD47
4871          KM        Return diverted flow from CP D47
4872          DR   DVD47
              *

4873          KK   RDD47
4874          KM    This is in the 10-foot contour area, used the EEC route.
4875          KM        Route diverted flow from CP D47 to CP D22
4876          KM        Crossing at SR-238
4877          RS      24    FLOW      -1
4878          RC   0.050   0.045   0.050   31080  0.0050
4879          RX       0     300     500     520     570     590     700     940
4880          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *

4881          KK   DRD15
4882          KM        Return diverted flow from CP D15
4883          DR   DVD15
              *

4884          KK   RDD15
4885          KM    This is in the 10-foot contour area, used the EEC route.
```

```
4886          KM        Route diverted flow from CP D15 to CP D22
4887          KM        Crossing at SR-238
4888          RS      16    FLOW      -1
4889          RC   0.050   0.045   0.050   29860  0.0050
4890          RX       0     300     500     520     570     590     700     940
4891          RY    1295    1294    1293    1290    1290    1293    1294    1295
              *

4892          KK     D22   BASIN
4893          KM     URS 2009
4894          KM    Customized XKSAT Values
4895          BA   7.722
4896          LG    0.35    0.35    3.88    0.49       0
4897          UI       0     341     534    1322    1755    2104    2591    3567    4173    3194
4898          UI    2639    2127    1711    1226     690     570     404     341     114     105
4899          UI     105     105     105       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

4900          KM    URS 2009

4901          KK   CPD22
4902          KM        Combine D13, D46, D10, D47, D15 with D22
4903          HC       6  16.269
              *

4904          KK  RCPD22
4905          KM        Route flow from CP D22 to CP D33
4906          KM     URS 2009
4907          RS       5    FLOW      -1
4908          RC   0.050   0.045   0.050   11430  0.0058
4909          RX       0     142     173     213     268     316     423     509
4910          RY  1210.9  1210.0  1210.0  1208.0  1208.0  1209.0  1210.0  1212.0
              *

4911          KK     D33   BASIN
4912          KM     URS 2009
4913          BA   0.650
4914          LG    0.35    0.35    4.25    0.41       0
4915          UI       0     112     355     624     686     409     185      86      27      21
4916          UI       0       0       0       0       0       0       0       0       0       0
4917          UI       0       0       0       0       0       0       0       0       0       0
4918          UI       0       0       0       0       0       0       0       0       0       0
4919          UI       0       0       0       0       0       0       0       0       0       0
              *
4920          KM    URS 2009

4921          KK   CPD33
4922          KM        Combine D22 with D33
4923          HC       2  16.919
              *

4924          KK  D33RIV
4925          KM        Combine D32RIV with D33
4926          HC       2 151.283
              *

4927          KK  RCPD33
4928          KM        Route flow from CP D33RIV to CP G36RIV (WATERMAN WASH)
4929          KM     THIS ROUTE IS FROM THE EEC STUDY
4930          RS       1    FLOW      -1
4931          RC   0.050   0.035   0.050     520  0.0030
4932          RX     680     700    1000    1050    1070    1120    1400    1420
4933          RY    1185    1180    1178    1175    1175    1178    1180    1185
              *

4934          KK     D45   BASIN
4935          KM     URS 2009
4936          BA   0.262
4937          LG    0.35    0.35    4.30    0.40       0
4938          UI       0     124     393     342     116      27       0       0       0       0
4939          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE123

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

4940          KK     G36   BASIN
4941          KM     URS 2009
4942          BA   0.997
4943          LG    0.35    0.35    4.00    0.46       0
4944          UI       0     136     455     721    1076     703     425     177      93      29
4945          UI      29       0       0       0       0       0       0       0       0       0
4946          UI       0       0       0       0       0       0       0       0       0       0
4947          UI       0       0       0       0       0       0       0       0       0       0
              *

4948          KK  G36RIV
4949          KM        Combine D33RIV, D45 with G36
4950          HC       3 152.542
              *

4951          KK  RCPG36
4952          KM        Route flow from CP G36RIV to CP G37RIV (WATERMAN WASH)
4953          KM     THIS ROUTE IS FROM THE EEC STUDY
4954          RS       2    FLOW      -1
4955          RC   0.050   0.035   0.050    2960  0.0020
4956          RX       0      10    1540    1570    1610    1640    3190    3200
4957          RY  1192.5  1190.5    1178    1175    1175    1178  1190.5  1192.5
              *

4958          KK     D44   BASIN
4959          KM     URS 2009
```

```
4960          BA   0.332
4961          LG    0.35    0.35    4.20    0.42       0
4962          UI       0     140     435     462     178      49      16       0       0       0
4963          UI       0       0       0       0       0       0       0       0       0       0
4964          UI       0       0       0       0       0       0       0       0       0       0
4965          UI       0       0       0       0       0       0       0       0       0       0
4966          UI       0       0       0       0       0       0       0       0       0       0
              *

4967          KK     G37   BASIN
4968          KM     URS 2009
4969          BA   0.408
4970          LG    0.35    0.35    4.00    0.46       0
4971          UI       0     159     484     588     246      73      19       0       0       0
4972          UI       0       0       0       0       0       0       0       0       0       0
4973          UI       0       0       0       0       0       0       0       0       0       0
4974          UI       0       0       0       0       0       0       0       0       0       0
              *

4975          KK  G37RIV
4976          KM        Combine G36RIV, D44 with G37
4977          HC       3 153.281
              *
1                                          HEC-1 INPUT                                                    PAGE124

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

4978          KK  RCPG37
4979          KM        Route flow from CP G37RIV to CP G38RIV (WATERMAN WASH)
4980          KM     THIS ROUTE IS FROM THE EEC STUDY
4981          RS       1    FLOW      -1
4982          RC   0.050   0.035   0.050    1450  0.0020
4983          RX       0      10    1590    1615    1670    1700    3260    3270
4984          RY  1185.5  1183.5    1170    1166    1166    1170  1183.5  1185.5
              *

4985          KK     D43   BASIN
4986          KM     URS 2009
4987          BA   0.151
4988          LG    0.35    0.35    4.15    0.43       0
4989          UI       0     146     335      90      13       0       0       0       0       0
4990          UI       0       0       0       0       0       0       0       0       0       0
4991          UI       0       0       0       0       0       0       0       0       0       0
4992          UI       0       0       0       0       0       0       0       0       0       0
4993          UI       0       0       0       0       0       0       0       0       0       0
              *

4994          KK     G38   BASIN
4995          KM     URS 2009
4996          BA   0.336
4997          LG    0.35    0.35    4.10    0.44       0
4998          UI       0      92     272     470     287     115      42      13       0       0
4999          UI       0       0       0       0       0       0       0       0       0       0
5000          UI       0       0       0       0       0       0       0       0       0       0
              *

5001          KK  G38RIV
5002          KM        Combine G37RIV, D43 with G38
5003          HC       3 154.800
              *

5004          KK  RCPG38
5005          KM        Route flow from CP G38RIV to CP D42RIV (WATERMAN WASH)
5006          KM     THIS ROUTE IS FROM THE EEC STUDY
5007          RS       1    FLOW      -1
5008          RC   0.050   0.035   0.050    1820  0.0020
5009          RX       0      10    1710    1720    1760    1770    3400    3410
5010          RY    1172    1170    1160    1156    1156    1160    1170    1172
              *

5011          KK     G12   BASIN
5012          KM     URS 2009
5013          BA   1.032
5014          LG    0.35    0.35    4.00    0.46       0
5015          UI       0     149     493     797    1124     711     408     165      79      31
5016          UI      31       0       0       0       0       0       0       0       0       0
5017          UI       0       0       0       0       0       0       0       0       0       0
5018          UI       0       0       0       0       0       0       0       0       0       0
5019          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5020          KK  RCPG12
5021          KM        Route flow from CP G12 to CP G39
5022          KM     URS 2009
5023          RS       7    FLOW      -1
5024          RC   0.050   0.045   0.050   10250  0.0079
5025          RX       0    1067    1162    1232    1247    1284    1547    2548
5026          RY  1204.3  1203.2  1203.1    1202    1202  1202.2  1203.4  1204.4
              *

5027          KK     G39   BASIN
5028          KM     URS 2009
5029          BA   0.763
5030          LG    0.35    0.35    4.00    0.46       0
5031          UI       0      59     239     358     547     656     445     306     154      88
5032          UI      49      18      18      18       0       0       0       0       0       0
5033          UI       0       0       0       0       0       0       0       0       0       0
5034          UI       0       0       0       0       0       0       0       0       0       0
5035          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
5036          KK   CPG39
5037          KM        Combine DRG12 with G39
5038          HC       2   1.795
              *

5039          KK     D34   BASIN
5040          KM     URS 2009
5041          BA   1.202
5042          LG    0.16    0.27    4.55    0.29       4
5043          UI       0     478    1461    1721     705     206      57       0       0       0
5044          UI       0       0       0       0       0       0       0       0       0       0
5045          UI       0       0       0       0       0       0       0       0       0       0
5046          UI       0       0       0       0       0       0       0       0       0       0
5047          UI       0       0       0       0       0       0       0       0       0       0
              *

5048          KK  RCPD34
5049          KM        Route flow from CP D34 to CP D42
5050          KM     URS 2009
5051          RS       1    FLOW      -1
5052          RC   0.050   0.045   0.050    4786  0.0058
5053          RX       0     167     230     248     256     271     407     542
5054          RY  1175.3  1172.0  1174.0  1169.8  1169.8  1173.8  1172.6  1174.4
              *

5055          KK     D42   BASIN
5056          KM     URS 2009
5057          BA   0.208
5058          LG    0.35    0.35    4.00    0.46       0
5059          UI       0     160     432     175      31       0       0       0       0       0
5060          UI       0       0       0       0       0       0       0       0       0       0
5061          UI       0       0       0       0       0       0       0       0       0       0
5062          UI       0       0       0       0       0       0       0       0       0       0
5063          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

5064          KK   CPD42
5065          KM        Combine D34 with D42
5066          HC       2   1.410
              *

5067          KK  D42RIV
5068          KM        Combine G38RIV, G39 with D42
5069          HC       3 156.973
              *

5070          KK  RCPD42
5071          KM        Route flow from CP D42RIV to CP D41RIV (WATERMAN WASH)
5072          KM     THIS ROUTE IS FROM THE EEC STUDY
5073          RS       1    FLOW      -1
5074          RC   0.050   0.035   0.050    3000  0.0047
5075          RX       0     900    1300    1350    1370    1420    1750    1770
5076          RY    1165    1160    1154    1150    1150    1154    1160    1165
              *

5077          KK     D41
5078          KM     URS 2009
5079          BA   0.295
5080          LG    0.35    0.35    4.40    0.37       0
5081          UI       0     155     486     365     104      24       0       0       0       0
5082          UI       0       0       0       0       0       0       0       0       0       0
5083          UI       0       0       0       0       0       0       0       0       0       0
5084          UI       0       0       0       0       0       0       0       0       0       0
5085          UI       0       0       0       0       0       0       0       0       0       0
              *

5086          KK  D41RIV
5087          KM        Combine D42RIV with D41
5088          HC       2 157.267
              *

5089          KK  RCPD41
5090          KM        Route flow from CP D41RIV to CP G40RIV (WATERMAN WASH)
5091          KM     THIS ROUTE IS FROM THE EEC STUDY
5092          RS       1    FLOW      -1
5093          RC   0.050   0.035   0.050     220  0.0020
5094          RX     780     800    1400    1450    1475    1525    1880    1900
5095          RY    1160    1155    1153    1150    1150    1153    1155    1160
              *

5096          KK     G02   BASIN
5097          KM        Customized XKSAT Values
5098          KM     URS 2009
5099          BA   2.061
5100          LG    0.35    0.35    3.95    0.47       6
5101          UI       0     432    1323    2451    1987    1102     400     160      73       0
5102          UI       0       0       0       0       0       0       0       0       0       0
5103          UI       0       0       0       0       0       0       0       0       0       0
5104          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

5105          KK     G03   BASIN
5106          KM     URS 2009
5107          KM        Customized XKSAT Values
5108          BA   2.460
5109          LG    0.35    0.35    3.92    0.48      11
5110          UI       0     527    1612    2978    2348    1284     453     180      88       0
5111          UI       0       0       0       0       0       0       0       0       0       0
```

```
5112          UI       0       0       0       0       0       0       0       0       0       0
5113          UI       0       0       0       0       0       0       0       0       0       0
5114          UI       0       0       0       0       0       0       0       0       0       0
              *

5115          KK   CPG03
5116          KM        COMBINE G02 WITH G03
5117          HC       2   4.521
              *

5118          KK  RCPG03
5119          KM        Route flow from CP G03 to CP G09
5120          KM     URS 2009
5121          RS       4    FLOW      -1
5122          RC   0.050   0.045   0.050   10974  0.0091
5123          RX       0    2581    2672    2674    2675    2677    2723    5262
5124          RY  1357.5  1357.2    1356    1356    1356    1356    1358    1358
              *

5125          KK   DRG08
5126          KM        Return diverted flow from CP G08
5127          DR   DVG08
              *

5128          KK   RDG08
5129          KM        Route flow from CP G08 to CP G09
5130          KM     URS 2009
5131          RS      19    FLOW      -1
5132          RC   0.050   0.045   0.050   10242  0.0088
5133          RX       0      70      89     213     315     417     418     420
5134          RY  1352.2  1352.2    1352  1350.4  1351.6  1351.9  1351.9  1351.9
              *

5135          KK     G09   BASIN
5136          KM     URS 2009
5137          KM        Customized XKSAT Values
5138          BA   0.702
5139          LG    0.35    0.35    3.95    0.47       0
5140          UI       0      93     312     491     751     501     312     130      74      20
5141          UI      20       0       0       0       0       0       0       0       0       0
5142          UI       0       0       0       0       0       0       0       0       0       0
5143          UI       0       0       0       0       0       0       0       0       0       0
5144          UI       0       0       0       0       0       0       0       0       0       0
              *
5145          KM    URS 2009
```



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

5146          KK   CPG09
5147          KM        Combine G03, DRG08 with G09
5148          HC       3   5.244
              *

5149          KK  RCPG09
5150          KM        Route flow from CP G09 to CP G11
5151          KM     URS 2009
5152          RS       3    FLOW      -1
5153          RC   0.050   0.045   0.050    6827  0.0088
5154          RX       0    3525    3525    3577    3603    3722    3792    6292
5155          RY  1270.9  1270.9  1270.9    1270    1270  1271.1  1271.2  1271.2
              *

5156          KK     G48   BASIN
5157          KM     URS 2009
5158          KM    Customized XKSAT Values
5159          BA   1.909
5160          LG    0.35    0.35    3.95    0.47      58
5161          UI       0     937    2847    1692     922     480     252     132      63      63
5162          UI       0       0       0       0       0       0       0       0       0       0
5163          UI       0       0       0       0       0       0       0       0       0       0
              *

5164          KK  RCPG48
5165          KM        Route flow from CP G48 to CP G01
5166          KM     URS 2009
5167          RS      12    FLOW      -1
5168          RC   0.050   0.045   0.050   19532  0.0131
5169          RX       0     604     745     755     802     854     983    1485
5170          RY  1432.1  1430.8  1430.4    1430    1430    1431    1431    1432
              *

5171          KK     G01   BASIN
5172          KM        Customized XKSAT Values
5173          KM     URS 2009
5174          BA   1.584
5175          LG    0.35    0.35    3.95    0.47       0
5176          UI       0     147     554     835    1371    1278     867     546     241     149
5177          UI      55      40      40       0       0       0       0       0       0       0
5178          UI       0       0       0       0       0       0       0       0       0       0
5179          UI       0       0       0       0       0       0       0       0       0       0
5180          UI       0       0       0       0       0       0       0       0       0       0
              *

5181          KK   CPG01
5182          KM        Combine G48 with G01
5183          HC       2   3.493
              *
```



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

5184          KK     G10   BASIN
5185          KM     URS 2009
```

```
5186          KM        Customized XKSAT Values
5187          BA   0.439
5188          LG    0.35    0.35    3.95    0.47       0
5189          UI       0     105     318     575     399     189      72      21      17       0
5190          UI       0       0       0       0       0       0       0       0       0       0
5191          UI       0       0       0       0       0       0       0       0       0       0
5192          UI       0       0       0       0       0       0       0       0       0       0
              *

5193          KK   CPG10
5194          KM        Combine G01 with G10
5195          HC       2   3.932
              *

5196          KK  RCPG10
5197          KM        Route flow from CP G10 to CP G11
5198          KM     URS 2009
5199          RS       7    FLOW      -1
5200          RC   0.050   0.045   0.050   7355  0.0079
5201          RX       0     153     320     323     338     474     507     510
5202          RY  1273.1  1272.3  1272.4  1272.4  1272.2  1273.4  1273.6  1273.6
              *

5203          KK     G11   BASIN
5204          KM     URS 2009
5205          KM        Customized XKSAT Values
5206          BA   0.605
5207          LG    0.35    0.35    3.95    0.47       0
5208          UI       0     192     563     884     471     152      49      26       0       0
5209          UI       0       0       0       0       0       0       0       0       0       0
5210          UI       0       0       0       0       0       0       0       0       0       0
5211          UI       0       0       0       0       0       0       0       0       0       0
              *
5212          KM    URS 2009

5213          KK   CPG11
5214          KM        Combine G09, G10 with G11
5215          HC       3  9.781
              *

5216          KK    DG11
5217          KM      Divert flow into G42
5218          KM     URS 2009
5219          KM        Natural divergence of flow due to a braided channel network.
5220          DT   DVG11
5221          DI       0      17     413    1344    2903    5179    8274   11917   16067   20691
5222          DQ       0       5     187     604    1316    2289    3790    5574    7620    9910
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5223          KK  RCPG11
5224          KM        Route remainder flow from CP G11 to CP G40
5225          KM     URS 2009
5226          RS      11    FLOW      -1
5227          RC   0.050   0.045   0.050  13894  0.0068
5228          RX       0     124     180     265     450     621     685     850
5229          RY  1193.4  1192.9  1192.4    1192    1192    1192  1192.3  1193.4
              *

5230          KK     G40   BASIN
5231          KM     URS 2009
5232          BA   1.521
5233          LG    0.35    0.35    4.00    0.46       0
5234          UI       0     183     632     973    1573    1125     730     333     179      73
5235          UI      42      42       0       0       0       0       0       0       0       0
5236          UI       0       0       0       0       0       0       0       0       0       0
5237          UI       0       0       0       0       0       0       0       0       0       0
              *
5238          KM    URS 2009

5239          KK   CPG40
5240          KM        Combine G11 with G40
5241          HC       2   6.901
              *

5242          KK  G40RIV
5243          KM        Combine D41RIV with G40
5244          HC       2 168.548
              *

5245          KK  RCPG40
5246          KM        Route flow from CP G40RIV to CP D40RIV (WATERMAN WASH)
5247          KM    THIS ROUTE IS FROM THE EEC STUDY
5248          RS       1    FLOW      -1
5249          RC   0.050   0.035   0.050    1350  0.0017
5250          RX       0      10     750     770     820     870    1590    1600
5251          RY    1160    1158    1150    1146    1146    1150    1156    1158
              *

5252          KK     D40
5253          KM     URS 2009
5254          BA   0.232
5255          LG    0.35    0.35    4.50    0.35       0
5256          UI       0     137     417     264      64      14       0       0       0       0
5257          UI       0       0       0       0       0       0       0       0       0       0
5258          UI       0       0       0       0       0       0       0       0       0       0
5259          UI       0       0       0       0       0       0       0       0       0       0
5260          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
5261          KK     G41   BASIN
5262          KM        Customized XKSAT Values
5263          KM     URS 2009
5264          BA   0.423
5265          LG    0.35    0.35    4.00    0.46       0
5266          UI       0     141     413     622     315      98      30      19       0       0
5267          UI       0       0       0       0       0       0       0       0       0       0
5268          UI       0       0       0       0       0       0       0       0       0       0
              *

5269          KK  D40RIV
5270          KM        Combine G40RIV, G41 with D40
5271          HC       3 169.203
              *

5272          KK  RCPD40
5273          KM        Route flow from CP D40RIV to CP D39RIV (WATERMAN WASH)
5274          KM    THIS ROUTE IS FROM THE EEC STUDY
5275          RS       1    FLOW      -1
5276          RC   0.050   0.035   0.050    2270  0.0032
5277          RX    1455    1480    2150    2200    2225    2275    2700    2725
5278          RY    1150    1147    1145    1142    1142    1145    1147    1150
              *

5279          KK     D36   BASIN
5280          KM     URS 2009
5281          BA   0.248
5282          LG    0.35    0.35    4.65    0.32       0
5283          UI       0     102     313     350     139      40      12       0       0       0
5284          UI       0       0       0       0       0       0       0       0       0       0
5285          UI       0       0       0       0       0       0       0       0       0       0
5286          UI       0       0       0       0       0       0       0       0       0       0
5287          UI       0       0       0       0       0       0       0       0       0       0
              *

5288          KK     D35   BASIN
5289          KM    Customized XKSAT Values
5290          KM     URS 2009
5291          BA   1.234
5292          LG    0.35    0.35    3.95    0.47       0
5293          UI       0     102     404     605     952    1040     703     474     220     132
5294          UI      65      30      30       0       0       0       0       0       0       0
5295          UI       0       0       0       0       0       0       0       0       0       0
5296          UI       0       0       0       0       0       0       0       0       0       0
5297          UI       0       0       0       0       0       0       0       0       0       0
              *

5298          KK   CPD35
5299          KM        Combine D36 with D35
5300          HC       2   1.426
              *
```



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

5301          KK  RCPD35
5302          KM        Route flow from CP D35 to CP D37
5303          KM     URS 2009
5304          KM     Typical Sheet Flow Farmfield
5305          RS       4    FLOW      -1
5306          RC   0.050   0.045   0.050    6604  0.0055
5307          RX       0     500     600     620     720     740     840    1340
5308          RY       5       3       1       0       0       1       3       5
              *

5309          KK     D37   BASIN
5310          KM     URS 2009
5311          BA   0.279
5312          LG    0.35    0.35    4.45    0.37       0
5313          UI       0      64     196     357     258     129      47      16      10       0
5314          UI       0       0       0       0       0       0       0       0       0       0
5315          UI       0       0       0       0       0       0       0       0       0       0
5316          UI       0       0       0       0       0       0       0       0       0       0
5317          UI       0       0       0       0       0       0       0       0       0       0
              *

5318          KK   CPD37
5319          KM        Combine D35 with D37
5320          HC       2   1.705
              *

5321          KK     D38   BASIN
5322          KM     URS 2009
5323          BA   0.365
5324          LG    0.35    0.35    4.55    0.34       0
5325          UI       0      93     277     493     323     143      56      14       0       0
5326          UI       0       0       0       0       0       0       0       0       0       0
5327          UI       0       0       0       0       0       0       0       0       0       0
5328          UI       0       0       0       0       0       0       0       0       0       0
5329          UI       0       0       0       0       0       0       0       0       0       0
              *

5330          KK   CPD38
5331          KM        COMBINE D37 WITH D38
5332          HC       2   2.071
              *

5333          KK  RCPD38
5334          KM        Route flow from CP D38 to CP D39
5335          KM     URS 2009
5336          RS       6    FLOW      -1
5337          RC   0.050   0.045   0.050    5564  0.0039
5338          RX       1     421     433     435     449     459     461     593
5339          RY  1205.0  1204.0  1200.0  1200.0  1200.0  1203.4  1204.0  1205.0
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                    *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5340          KK     D39   BASIN
5341          KM     URS 2009
5342          BA   0.292
5343          LG    0.35    0.35    4.80    0.29       0
5344          UI       0      81     238     410     248      99      35      12       0       0
5345          UI       0       0       0       0       0       0       0       0       0       0
5346          UI       0       0       0       0       0       0       0       0       0       0
5347          UI       0       0       0       0       0       0       0       0       0       0
5348          UI       0       0       0       0       0       0       0       0       0       0
              *

5349          KK   CPD39
5350          KM        Combine D38 with D39
5351          HC       2   2.363
              *

5352          KK  D39RIV
5353          KM        Combine D40RIV with D39
5354          HC       2 171.566
              *

5355          KK  RCPD39
5356          KM        Route flow from CP D39RIV to CP G42RIV (WATERMAN WASH)
5357          KM    THIS ROUTE IS FROM THE EEC STUDY
5358          RS       1    FLOW      -1
5359          RC   0.050   0.035   0.050    1730  0.0027
5360          RX       0      10     740     750     800     810    1500    1510
5361          RY    1152    1150    1144    1140    1140    1144    1150    1152
              *

5362          KK   DRG11
5363          KM        Return diverted flow from CP G11
5364          DR   DVG11
              *

5365          KK   RDG11
5366          KM        Route flow from CP G11 to CP G42
5367          KM     URS 2009
5368          RS      10    FLOW      -1
5369          RC   0.050   0.045   0.050   13894  0.0067
5370          RX       0     155     266     294     326     464     550     574
5371          RY  1186.6    1186  1185.4    1184    1184  1185.3  1185.2 1185.35
              *

5372          KK     G42   BASIN
5373          KM     URS 2009
5374          BA   0.694
5375          LG    0.35    0.35    4.00    0.46       0
5376          UI       0     102     335     546     754     475     268     109      52      21
5377          UI      21       0       0       0       0       0       0       0       0       0
5378          UI       0       0       0       0       0       0       0       0       0       0
5379          UI       0       0       0       0       0       0       0       0       0       0
              *
5380          KM    URS 2009
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5381          KK   CPG42
5382          KM        Combine DRG11 with G42
5383          HC       2   5.095
              *

5384          KK  G42RIV
5385          KM        Combine D39RIV with G42
5386          HC       2 172.259
              *

5387          KK  RCPG42
5388          KM        Route flow from CP G42RIV to CP B08RIV (WATERMAN WASH)
5389          KM    THIS ROUTE IS FROM THE EEC STUDY
5390          RS       1    FLOW      -1
5391          RC   0.050   0.035   0.050    2400  0.0050
5392          RX       0    1800    2200    2350    2430    2580    3400    5200
5393          RY    1155    1145    1135    1130    1130    1135    1145    1155
              *

5394          KK     C51   BASIN
5395          KM     URS 2009
5396          BA   0.392
5397          LG    0.50    0.25    4.70    0.47       0
5398          UI       0      18      23      49      99     106     141     148     148     127
5399          UI     133      95      92      66      51      47      31      26      21      16
5400          UI      15      10      10       9       2       2       2       2       2       2
5401          UI       2       2       2       2       2       2       2       0       0       0
              *

5402          KK     C52   BASIN
5403          KM     URS 2009
5404          BA   0.382
5405          LG    0.50    0.25    4.80    0.46       0
5406          UI       0      16      19      41      82      94     122     136     136     129
5407          UI     114     113      88      77      58      47      42      29      24      20
5408          UI      15      15      10       9       9       4       2       2       2       2
5409          UI       2       2       2       2       2       2       2       2       2       0
              *

5410          KK   CPC52
5411          KM        Combine C51, C52,
```

```
5412          HC       2   0.774
              *

5413          KK  RCPC52
5414          KM        Route flow from CP C52 to CP B07
5415          KM     URS 2009
5416          KM       Typical Sheet Flow Farmfield
5417          RS       3    FLOW      -1
5418          RC   0.050   0.045   0.050    2590   .0054
5419          RX       0     500     600     620     720     740     840    1340
5420          RY       5       3       1       0       0       1       3       5
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5421          KK     C53   BASIN
5422          KM     URS 2009
5423          BA   0.373
5424          LG    0.50    0.25    4.80    0.46       0
5425          UI       0      16      21      44      90      96     127     138     138     124
5426          UI     120     100      92      65      52      50      31      26      20      17
5427          UI      15      12       9       9       6       2       2       2       2       2
5428          UI       2       2       2       2       2       2       2       2       0       0
              *

5429          KK  RCPC53
5430          KM        Route flow from CP C53 to CP B07
5431          KM     URS 2009
5432          KM       Typical Sheet Flow Farmfield
5433          RS       4    FLOW      -1
5434          RC   0.050   0.045   0.050    3865  0.0016
5435          RX       0     500     600     620     720     740     840    1340
5436          RY       5       3       1       0       0       1       3       5
              *

5437          KK     B07
5438          KM     URS 2009
5439          BA   0.338
5440          LG    0.24    0.25    4.70    0.32       3
5441          UI       0     145     440     397     194      76      38       8       7       7
5442          UI       0       0       0       0       0       0       0       0       0       0
5443          UI       0       0       0       0       0       0       0       0       0       0
5444          UI       0       0       0       0       0       0       0       0       0       0
              *

5445          KK   CPB07
5446          KM        Combine CP52, C53 with B07
5447          HC       3   1.574
              *

5448          KK  RCPB07
5449          KM       Route flow from CP B07 to CP B08
5450          KM       URS 2009
5451          KM       Typical Sheet Flow Farmfield
5452          RS       6    FLOW      -1
5453          RC   0.050   0.045   0.050    5954  0.0037
5454          RX       0     500     600     620     720     740     840    1340
5455          RY       5       3       1       0       0       1       3       5
              *

5456          KK     B08
5457          KM     URS 2009
5458          BA   0.430
5459          LG    0.49    0.26    4.50    0.54       0
5460          UI       0      22      33      80     123     157     183     183     161     162
5461          UI     116     103      74      65      42      33      27      20      18      12
5462          UI      12       7       3       3       3       3       3       3       3       3
5463          UI       3       3       3       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5464          KK   CPB08
5465          KM        Combine B07 with B08
5466          HC       2   2.004
              *

5467          KK  B08RIV
5468          KM        Combine G42RIV with B08
5469          HC       2 174.263
              *

5470          KK  RCPB08
5471          KM        Route flow from CP B08RIV to CP B12RIV (WATERMAN WASH)
5472          KM     THIS ROUTE IS FROM THE EEC STUDY
5473          RS       1    FLOW      -1
5474          RC   0.050   0.035   0.050     230  0.0050
5475          RX       0    1800    2200    2350    2430    2580    3400    5200
5476          RY    1150    1140    1130    1125    1125    1130    1140    1150
              * ******************************************************************************
              * RETURNING FLOWS FROM DIVERTS IN C TO C33
              * ROUTES AND DIVERTS DIFFER FROM INDIVIDUAL MODEL
              * ******************************************************************************

5477          KK   DRC13
5478          KM        Return diverted flow from CP C13
5479          DR   DVC13
              *

5480          KK   RDC13
5481          KM    This is in the 10-foot contour area, used the EEC route.
5482          KM        Route flow from CP C13 to CP C33A
```

```
5483          KM        Crossing at SR-238
5484          RS       4    FLOW      -1
5485          RC   0.050   0.045   0.050    9170  0.0054
5486          RX       0     230     360     370     405     415     525     780
5487          RY    1485    1484    1483    1480    1480    1483    1484    1485
              *

5488          KK   DRC31
5489          KM        Return diverted flow from CP C31
5490          DR   DVC31
              *

5491          KK   RDC31
5492          KM    This is in the 10-foot contour area, used the EEC route.
5493          KM        Route flow from CP C31 to CP C33A
5494          KM        Crossing at SR-238
5495          RS       7    FLOW      -1
5496          RC   0.050   0.045   0.050    8840  0.0055
5497          RX       0     230     360     370     405     415     525     780
5498          RY    1485    1484    1483    1480    1480    1483    1484    1485
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5499          KK   DRC14
5500          KM        Return diverted flow from CP C14
5501          DR   DVC14
              *

5502          KK   RDC14
5503          KM    This is in the 10-foot contour area, used the EEC route.
5504          KM        Route flow from CP C14 to CP C33A
5505          KM        Crossing at SR-238
5506          RS       4    FLOW      -1
5507          RC   0.050   0.045   0.050    8160  0.0056
5508          RX       0     230     360     370     405     415     525     780
5509          RY    1485    1484    1483    1480    1480    1483    1484    1485
              *

5510          KK   DRC10
5511          KM        Return diverted flow from CP C10
5512          DR   DVC10
              *

5513          KK   RDC10
5514          KM    This is in the 10-foot contour area, used the EEC route.
5515          KM        Route flow from CP C10 to CP C33A
5516          KM        Crossing at SR-238
5517          RS       5    FLOW      -1
5518          RC   0.050   0.045   0.050    6920  0.0055
5519          RX       0     230     360     370     405     415     525     780
5520          RY    1485    1484    1483    1480    1480    1483    1484    1485
              *

5521          KK   DRC30
5522          KM        Return diverted flow from CP C30
5523          DR   DVC30
              *

5524          KK   RDC30
5525          KM    This is in the 10-foot contour area, used the EEC route.
5526          KM        Route flow from CP C30 to CP C33A
5527          KM        Crossing at SR-238
5528          RS       3    FLOW      -1
5529          RC   0.050   0.045   0.050    5210  0.0055
5530          RX       0     230     360     370     405     415     525     780
5531          RY    1485    1484    1483    1480    1480    1483    1484    1485
              *

5532          KK  CPC33A
5533          KM    URS 2009
5534          KM        Temporary combine to reduce hydrographs
5535          KM        Combine DRC13, DRC31, DRC14, DRC10 with DRC30
5536          HC       5   2.688
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5537          KK   RC33A
5538          KM        Route flow from CP C33A to CP C33E
5539          KM    This is in the 10-foot contour area, used the EEC route.
5540          RS       6    FLOW      -1
5541          RC   0.050   0.045   0.050   18680  0.0059
5542          RX       0       8      50      75     110     135     180     188
5543          RY    1378  1376.5    1376    1372    1372    1376  1376.5    1378
              *
              *

5544          KK   DRC29
5545          KM        Return diverted flow from CP C29
5546          DR   DVC29
              *

5547          KK   RDC29
5548          KM    This is in the 10-foot contour area, used the EEC route.
5549          KM        Route flow from CP C29 to CP C33B
5550          KM        Crossing at SR-238
5551          RS      11    FLOW      -1
5552          RC   0.050   0.045   0.050   11170  0.0057
5553          RX       0       9      35      55      65      85     110     119
5554          RY    1446 1444.25    1444    1443    1443    1444 1444.25    1446
              *
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```
5555          KK   DRC28
5556          KM        Return diverted flow from CP C28
5557          DR   DVC28
              *

5558          KK   RDC28
5559          KM    This is in the 10-foot contour area, used the EEC route.
5560          KM        Route flow from CP C28 to CP C33B
5561          KM        Crossing at SR-238
5562          RS      10    FLOW      -1
5563          RC   0.050   0.045   0.050   10700  0.0059
5564          RX       0     240     420     440     450     470     600     750
5565          RY    1446    1445    1444    1443    1443    1444    1445    1446
              *

5566          KK   DRC27
5567          KM        Return diverted flow from CP C27
5568          DR   DVC27
              *

5569          KK   RDC27
5570          KM    This is in the 10-foot contour area, used the EEC route.
5571          KM        Route flow from CP C27 to CP C33B
5572          KM        Crossing at SR-238
5573          RS       4    FLOW      -1
5574          RC   0.050   0.045   0.050    8740  0.0059
5575          RX       0     215     465     470     485     490     700     965
5576          RY    1420    1419    1418    1415    1415    1418    1419    1420
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5577          KK   DRC20
5578          KM        Return diverted flow from CP C20
5579          DR   DVC20
              *

5580          KK   RDC20
5581          KM    This is in the 10-foot contour area, used the EEC route.
5582          KM        Route flow from CP C20 to CP C33B
5583          KM        Crossing at SR-238
5584          RS       3    FLOW      -1
5585          RC   0.050   0.045   0.050    7860  0.0056
5586          RX       0       9      35      40      55      60      85      94
5587          RY    1420 1418.25    1418    1415    1415    1418 1418.25    1420
              *

5588          KK  CPC33B
5589          KM    URS 2009
5590          KM        Combine DRC29, DRC28, DRC27, with DRC20
5591          HC       4   6.399
              *

5592          KK  RC33B
5593          KM    This is in the 10-foot contour area, used the EEC route.
5594          KM        Route flow from CP C33B to CP C33D
5595          RS       3    FLOW      -1
5596          RC   0.050   0.045   0.050    5650  0.0058
5597          RX       0      10      50      75     110     135     180     188
5598          RY    1378  1376.5    1376    1372    1372    1376  1376.5    1378
              *

5599          KK   DRC24
5600          KM        Return diverted flow from CP C24
5601          DR   DVC24
              *

5602          KK   RDC24
5603          KM    This is in the 10-foot contour area, used the EEC route.
5604          KM        Route flow from CP C22 and C24 to CP C33C
5605          KM        Crossing at SR-238
5606          RS       5    FLOW      -1
5607          RC   0.050   0.045   0.050    5920  0.0048
5608          RX       0     275     490     550     575     620     810    1110
5609          RY    1405    1404    1403    1400    1400    1403    1404    1405
              *

5610          KK   DRC25
5611          KM        Return diverted flow from CP C25
5612          DR   DVC25
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5613          KK   RDC25
5614          KM    This is in the 10-foot contour area, used the EEC route.
5615          KM        Route flow from CP C25 to CP C33C
5616          KM        Crossing at SR-238
5617          RS       5    FLOW      -1
5618          RC   0.050   0.045   0.050    4950  0.0048
5619          RX       0     275     490     550     575     620     810    1110
5620          RY    1405    1404    1403    1400    1400    1403    1404    1405
              *

5621          KK   DRC26
5622          KM        Return diverted flow from CP C26
5623          DR   DVC26
              *

5624          KK   RDC26
5625          KM    This is in the 10-foot contour area, used the EEC route.
```

```
5626          KM        Route flow from CP C26 to CP C33C
5627          KM        Crossing at SR-238
5628          RS       8    FLOW      -1
5629          RC   0.050   0.045   0.050    8370  0.0056
5630          RX       0     230     420     430     440     450     610     880
5631          RY    1414    1413    1412    1410    1410    1412    1413    1414
              *

5632          KK   DRD09
5633          KM        Return diverted flow from CP D09
5634          DR   DVD09
              *

5635          KK   RDD09
5636          KM    This is in the 10-foot contour area, used the EEC route.
5637          KM        Route flow from CP D09 to CP C33C
5638          KM        Crossing at SR-238
5639          RS       3    FLOW      -1
5640          RC   0.050   0.045   0.050    4890  0.0048
5641          RX       0     275     490     550     575     620     810    1110
5642          RY    1405    1404    1403    1400    1400    1403    1404    1405
              *

5643          KK  CPC33C
5644          KM    URS 2009
5645          KM        Temporary combine to reduce hydrographs
5646          KM        Combine DRC24, DRC25, DRC26 with DRD09
5647          HC       4   4.427
              *

5648          KK   RC33C
5649          KM    This is in the 10-foot contour area, used the EEC route.
5650          KM        Route flow from CP C33C to CP C33D
5651          RS       2    FLOW      -1
5652          RC   0.050   0.045   0.050    3420  0.0050
5653          RX       0     100     300     330     370     400     550     650
5654          RY    1380    1378    1375    1372    1372    1375    1378    1380
              *
```



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

5655          KK  CPC33D
5656          KM    URS 2009
5657          KM        Temporary combine to reduce hydrographs
5658          KM        Combine CPC33B WITH CPC33C
5659          HC       2  10.826
              *

5660          KK   RC33D
5661          KM        Route flow from CP C33D to CP C33E
5662          KM    This is in the 10-foot contour area, used the EEC route.
5663          RS       2    FLOW      -1
5664          RC   0.050   0.045   0.050    4530  0.0050
5665          RX       0      20     180     230     290     340     430     450
5666          RY    1350    1348    1345    1340    1340    1345    1348    1350
              *

5667          KK  CPC33E
5668          KM    URS 2009
5669          KM        Temporary combine to reduce hydrographs
5670          KM        Combine CPC33A WITH CPC33D
5671          HC       2  13.514
              *

5672          KK  RC33E
5673          KM    This is in the 10-foot contour area, used the EEC route.
5674          KM        Route flow from CP C33E to CP C33F
5675          RS       2    FLOW      -1
5676          RC   0.050   0.045   0.050    6050  0.0045
5677          RX       0    1400    2000    2045    2125    2170    2770    4170
5678          RY    1340    1328    1325    1320    1320    1325    1328    1340
              *

5679          KK   DRD12
5680          KM        Return diverted flow from CP D12
5681          DR   DVD12
              *

5682          KK   RDD12
5683          KM    This is in the 10-foot contour area, used the EEC route.
5684          KM        Route flow from CP D12 to CP C33F
5685          KM        Crossing at SR-238
5686          RS      15    FLOW      -1
5687          RC   0.050   0.045   0.050   16830  0.0048
5688          RX       0     275     490     550     575     620     810    1110
5689          RY    1405    1404    1403    1400    1400    1403    1404    1405
              *

5690          KK  CPC33F
5691          KM    URS 2009
5692          KM        Temporary combine to reduce hydrographs
5693          KM        Combine CPC33E WITH DRD12
5694          HC       2  13.656
              *
```



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

5695          KK  RC33F
5696          KM    This is in the 10-foot contour area, used the EEC route.
5697          KM        Route flow from CP C33F to CP CP C33
5698          RS       1    FLOW      -1
5699          RC   0.050   0.045   0.050    2940  0.0045
```

```
5700          RX       0    1400    2000    2045    2125    2170    2770    4170
5701          RY    1320    1308    1305    1300    1300    1305    1308    1320
              *

5702          KK     C33   BASIN
5703          KM     URS 2009
5704          KM    Customized XKSAT Values
5705          BA  32.518
5706          LG    0.35    0.35    3.48    0.64       0
5707          UI       0    1427    2197    5498    7308    8744   10759   14662   17629   13516
5708          UI   11181    9014    7282    5328    3023    2401    1782    1427     586     438
5709          UI     438     438     438       0       0       0       0       0       0       0
              *

5710          KK   CPC33
5711          KM    URS 2009
5712          KM        Combine sum of all routed flows C33F with C33
5713          HC       2  46.176
              *

5714          KK  RCPC33
5715          KM        Route flow from CP C33 to CP C34
5716          KM     URS 2009
5717          RS      10    FLOW      -1
5718          RC   0.050   0.045   0.050   15966  0.0057
5719          RX       0    1684    1713    1741    1780    1790    1793    3028
5720          RY  1233.2 1229.99 1228.98 1228.01 1228.01 1229.44 1229.99 1233.20
              *

5721          KK     C34   BASIN
5722          KM     URS 2009
5723          KM    Customized XKSAT Values
5724          BA   0.861
5725          LG    0.35    0.35    3.48    0.64       0
5726          UI       0      70     279     418     654     729     493     334     158      93
5727          UI      48      21      21       0       0       0       0       0       0       0
5728          UI       0       0       0       0       0       0       0       0       0       0
5729          UI       0       0       0       0       0       0       0       0       0       0
5730          UI       0       0       0       0       0       0       0       0       0       0
              *
5731          KM    URS 2009

5732          KK  CPC34A
5733          KM        Combine C33 with C34
5734          HC       2  47.037
              *
```



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

5735          KK     C35   BASIN
5736          KM    Customized XKSAT Values
5737          KM     URS 2009
5738          BA   5.805
5739          LG    0.35    0.35    3.38    0.69       0
5740          UI       0    1217    3727    6902    5597    3103    1127     451     205       0
5741          UI       0       0       0       0       0       0       0       0       0       0
5742          UI       0       0       0       0       0       0       0       0       0       0
5743          UI       0       0       0       0       0       0       0       0       0       0
5744          UI       0       0       0       0       0       0       0       0       0       0
              *

5745          KK  RCPC35
5746          KM        Route flow from CP C35 to CP C34
5747          KM     URS 2009
5748          RS       1    FLOW      -1
5749          RC   0.050   0.045   0.050    1279  0.0047
5750          RX       0    1645    1691    1725    1735    1773    1791    2536
5751          RY  1223.8    1222    1222    1216    1216    1218    1222    1224
              *
5752          KM    URS 2009

5753          KK   CPC34
5754          KM        COMBINE C35 WITH C34
5755          HC       2  52.842
              *

5756          KK  RCPC34
5757          KM        Route flow from CP C34 to CP C36
5758          KM     URS 2009
5759          RS       1    FLOW      -1
5760          RC   0.050   0.045   0.050    3254  0.0061
5761          RX      48     669     701     733     740     852     969    1490
5762          RY    1213    1212 1206.91 1206.91    1210    1208    1208    1213
              *

5763          KK     C36   BASIN
5764          KM    Customized XKSAT Values
5765          KM     URS 2009
5766          BA   3.084
5767          LG    0.35    0.35    3.71    0.55       0
5768          UI       0     303    1116    1688    2801    2441    1647    1000     441     267
5769          UI      79      79      79       0       0       0       0       0       0       0
5770          UI       0       0       0       0       0       0       0       0       0       0
5771          UI       0       0       0       0       0       0       0       0       0       0
5772          UI       0       0       0       0       0       0       0       0       0       0
              *
5773          KM    URS 2009
```



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

5774          KK   CPC36
5775          KM        Combine C34 with C36
```

```
5776          HC       2  55.926
              *

5777          KK  RCPC36
5778          KM        Route flow from CP C36 to CP C49
5779          KM     URS 2009
5780          RS       2    FLOW      -1
5781          RC   0.050   0.045   0.050    2404  0.0042
5782          RX      54    1685    1737    1779    1793    1881    1902    3051
5783          RY    1197    1194 1194.92    1192    1190    1190    1194    1197
              *

5784          KK     C49   BASIN
5785          KM     URS 2009
5786          BA   0.186
5787          LG    0.35    0.35    4.45    0.36       0
5788          UI       0     147     390     151      25       0       0       0       0       0
5789          UI       0       0       0       0       0       0       0       0       0       0
5790          UI       0       0       0       0       0       0       0       0       0       0
5791          UI       0       0       0       0       0       0       0       0       0       0
5792          UI       0       0       0       0       0       0       0       0       0       0
              *
5793          KM    URS 2009

5794          KK   CPC49
5795          KM        Combine C36 with C49
5796          HC       2  56.112
              *

5797          KK  RCPC49
5798          KM        Route flow from CP C49 to CP C48
5799          KM     URS 2009
5800          RS       1    FLOW      -1
5801          RC   0.050   0.045   0.050    2303  0.0048
5802          RX      66    1575    1659    1667    1718    1724    1757    1819
5803          RY    1187    1184    1184    1180    1180  1181.9    1186  1186.9
              *

5804          KK     C40   BASIN
5805          KM     URS 2009
5806          KM    Customized XKSAT Values
5807          BA   0.170
5808          LG    0.35    0.35    3.07    0.86       0
5809          UI       0      93     289     205      55      12       0       0       0       0
5810          UI       0       0       0       0       0       0       0       0       0       0
5811          UI       0       0       0       0       0       0       0       0       0       0
5812          UI       0       0       0       0       0       0       0       0       0       0
5813          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

5814          KK    DC40
5815          KM      Divert flow into C43
5816          KM        Natural divergence of flow due to a braided channel network.
5817          DT   DVC40
5818          DI       0      51     126     264     376    1016    2615    4789    7190
5819          DQ       0       0      11      51     127     396    1097    1920    2926
              *

5820          KK  RCPC40
5821          KM        Route remainder flow from CP C40 to CP C42
5822          KM    This is in the 10-foot contour area, used the EEC route.
5823          RS       2    FLOW      -1
5824          RC   0.050   0.045   0.050    3270  0.0125
5825          RX       0      95     190     220     230     260     330     400
5826          RY    1310    1309    1308    1305    1305    1308    1309    1310
              *

5827          KK     C41   BASIN
5828          KM     URS 2009
5829          KM    Customized XKSAT Values
5830          BA   0.078
5831          LG    0.35    0.35    2.97    0.92       0
5832          UI       0      93     176      29       0       0       0       0       0       0
5833          UI       0       0       0       0       0       0       0       0       0       0
5834          UI       0       0       0       0       0       0       0       0       0       0
5835          UI       0       0       0       0       0       0       0       0       0       0
5836          UI       0       0       0       0       0       0       0       0       0       0
              *

5837          KK    DC41
5838          KM      Divert flow into C46
5839          KM        Natural divergence of flow due to a braided channel network.
5840          DT   DVC41
5841          DI       0      25     111     291     888    2325    4280    6549    9192
5842          DQ       0       8      37     106     385    1111    2018    3136    4444
              *

5843          KK  RCPC41
5844          KM        Route remainder flow from CP C41 to CP C42
5845          KM    This is in the 10-foot contour area, used the EEC route.
5846          RS       3    FLOW      -1
5847          RC   0.050   0.045   0.050    3750  0.0111
5848          RX       0     100     200     225     235     260     315     370
5849          RY    1320    1319    1318    1316    1316    1318    1319    1320
              *

5850          KK     C42   BASIN
5851          KM     URS 2009
5852          KM    Customized XKSAT Values
5853          BA   0.109
5854          LG    0.35    0.35    3.35    0.70       0
5855          UI       0     148     239      31       0       0       0       0       0       0
```

```
5856        UI       0       0       0       0       0       0       0       0       0       0
5857        UI       0       0       0       0       0       0       0       0       0       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5858        UI       0       0       0       0       0       0       0       0       0       0
5859        UI       0       0       0       0       0       0       0       0       0       0
            *
5860        KM    URS 2009

5861        KK    CPC42
5862        KM        Combine C40, C41 with C42
5863        HC       3   0.309
            *

5864        KK    DC42A
5865        KM       Divert flow from C42 into C45
5866        KM         Natural divergence of flow due to a braided channel network.
5867        DT   DVC42A
5868        DI       0      38     139     312     569     662    1453    3247    5517    8688
5869        DQ       0      14      53     125     235     289     597    1335    2232    3504
            *

5870        KK    DC42B
5871        KM       Divert flow from C42 into C47
5872        KM         Natural divergence of flow due to a braided channel network.
5873        DT   DVC42B
5874        DI       0      24      86     187     334     372     856    1912    3285    7066
5875        DQ       0      12      43      94     167     187     423     934    1615    3461
            *

5876        KK   RCPC42
5877        KM        Route remainder flow from CP C42 to CP C46
5878        KM    This is in the 10-foot contour area, used the EEC route.
5879        RS       4    FLOW      -1
5880        RC   0.050   0.045   0.050    6390  0.0087
5881        RX       0     100     175     195     205     225     300     400
5882        RY    1285    1284    1282    1280    1280    1282    1284    1285
            *

5883        KK    DRC41
5884        KM        Return diverted flow from CP C41
5885        DR    DVC41
            *

5886        KK    RDC41
5887        KM        Route flow from CP C41 to CP C46
5888        KM    This is in the 10-foot contour area, used the EEC route.
5889        RS      10    FLOW      -1
5890        RC   0.050   0.045   0.050    9810  0.0097
5891        RX       0     100     200     230     240     250     350     450
5892        RY    1295    1294    1292    1290    1290    1292    1294    1295
            *

5893        KK     C46   BASIN
5894        KM     URS 2009
5895        BA   0.245
5896        LG    0.35    0.35    4.10    0.44       0
5897        UI       0      62     185     329     218      98      38       9       9       0
5898        UI       0       0       0       0       0       0       0       0       0       0
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

5899        UI       0       0       0       0       0       0       0       0       0       0
5900        UI       0       0       0       0       0       0       0       0       0       0
5901        UI       0       0       0       0       0       0       0       0       0       0
            *
5902        KM    URS 2009

5903        KK    CPC46
5904        KM        Combine C42, DRC41 with C46
5905        HC       3  0.365
            *

5906        KK     DC46
5907        KM       Divert flow into C47
5908        KM         Natural divergence of flow due to a braided channel network.
5909        DT   DVC46
5910        DI       0      86     480    1337    2824    4976    7584   10606   14012
5911        DQ       0      46     238     644    1309    2212    3290    4530    5920
            *

5912        KK   RCPC46
5913        KM        Route remainder flow from CP C46 to CP C37
5914        KM     URS 2009
5915        RS       6    FLOW      -1
5916        RC   0.050   0.045   0.050    5199  0.0069
5917        RX       0    1157    1187    1191    1205    1265    1274    2312
5918        RY  1229.0  1228.0  1226.3  1226.4  1227.5  1227.8  1228.0  1229.0
            *

5919        KK     C37   BASIN
5920        KM     URS 2009
5921        KM    Customized XKSAT Values
5922        BA   1.801
5923        LG    0.35    0.35    3.67    0.56       0
5924        UI       0     122     415     668     903    1421    1170     856     614     328
5925        UI     202     122      47      37      37       0       0       0       0       0
5926        UI       0       0       0       0       0       0       0       0       0       0
5927        UI       0       0       0       0       0       0       0       0       0       0
            *
5928        KM    URS 2009

5929        KK    CPC37
```

```
5930          KM        Combine C46 with C37
5931          HC       2   2.111
              *

5932          KK  RCPC37
5933          KM        Route flow from CP C37 to CP C48
5934          KM     URS 2009
5935          RS       2    FLOW      -1
5936          RC   0.050   0.045   0.050    3408  0.0073
5937          RX       0     102     143     154     293     425     505     611
5938          RY  1188.9  1188.5  1188.3  1188.0  1188.0  1188.0  1189.7  1189.9
              *
1                                          HEC-1 INPUT                                                    PAGE148

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

5939          KK     C48   BASIN
5940          KM     URS 2009
5941          BA   0.255
5942          LG    0.35    0.35    4.40    0.37       0
5943          UI       0     129     405     322      99      23       0       0       0       0
5944          UI       0       0       0       0       0       0       0       0       0       0
5945          UI       0       0       0       0       0       0       0       0       0       0
5946          UI       0       0       0       0       0       0       0       0       0       0
5947          UI       0       0       0       0       0       0       0       0       0       0
              *
5948          KM    URS 2009

5949          KK  CPC48A
5950          KM        Combine C37 with C48
5951          HC       2   2.366
              *

5952          KK   CPC48
5953          KM    URS 2009
5954          KM        Combine C49 with C48
5955          HC       2  59.142
              *

5956          KK  RCPC48
5957          KM        Route flow from CP C48 to CP C47
5958          KM     URS 2009
5959          RS       1    FLOW      -1
5960          RC   0.050   0.045   0.050    1454  0.0034
5961          RX       0    1101    1129    1140    1213    1227    1249    3270
5962          RY    1178    1176    1172    1172  1175.7  1175.7    1174    1178
              *

5963          KK     C39   BASIN
5964          KM     URS 2009
5965          KM    Customized XKSAT Values
5966          BA   0.129
5967          LG    0.35    0.35    2.86    1.00       0
5968          UI       0      91     258     121      23       0       0       0       0       0
5969          UI       0       0       0       0       0       0       0       0       0       0
5970          UI       0       0       0       0       0       0       0       0       0       0
5971          UI       0       0       0       0       0       0       0       0       0       0
5972          UI       0       0       0       0       0       0       0       0       0       0
              *

5973          KK    DC39
5974          KM      Divert flow into C38
5975          KM        Natural divergence of flow due to a braided channel network.
5976          DT   DVC39
5977          DI       0      39     162     364    1092    3015    5246    7971   11144
5978          DQ       0      16      67     153     471    1308    2286    3482    4874
              *
1                                          HEC-1 INPUT                                                    PAGE149

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

5979          KK  RCPC39
5980          KM        Route remainder flow from CP C39 to CP C43
5981          KM    This is in the 10-foot contour area, used the EEC route.
5982          RS       4    FLOW      -1
5983          RC   0.050   0.045   0.050    5730  0.0124
5984          RX       0      50      95     120     130     155     225     300
5985          RY    1356    1355    1354    1353    1353    1354    1355    1356
              *

5986          KK   DRC40
5987          KM        Return diverted flow from CP C40
5988          DR   DVC40
              *

5989          KK   RDC40
5990          KM    This is in the 10-foot contour area, used the EEC route.
5991          KM        Route flow from CP C40 to CP C43
5992          RS       2    FLOW      -1
5993          RC   0.050   0.045   0.050    2750  0.0111
5994          RX       0     100     175     195     205     225     300     400
5995          RY    1328    1327    1326    1324    1324    1326    1326    1327
              *

5996          KK     C43   BASIN
5997          KM     URS 2009
5998          KM    Customized XKSAT Values
5999          BA   0.209
6000          LG    0.35    0.35    2.97    0.92       0
6001          UI       0     151     422     190      36       0       0       0       0       0
6002          UI       0       0       0       0       0       0       0       0       0       0
6003          UI       0       0       0       0       0       0       0       0       0       0
6004          UI       0       0       0       0       0       0       0       0       0       0
6005          UI       0       0       0       0       0       0       0       0       0       0
```

```
                 *
6006             KM    URS 2009

6007             KK   CPC43
6008             KM        Combine C39, DRC40 with C43
6009             HC       3   0.307
                 *

6010             KK    DC43
6011             KM      Divert flow into C38
6012             KM        Natural divergence of flow due to a braided channel network.
6013             DT   DVC43
6014             DI       0      21      83     197     626     961    1739    3835    6345    9647
6015             DQ       0       7      30      73     236     364     727    1693    2894    4640
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6016             KK  RCPC43
6017             KM        Route remainder flow from CP C43 to CP C44
6018             KM    This is in the 10-foot contour area, used the EEC route.
6019             RS       3    FLOW      -1
6020             RC   0.050   0.045   0.050    5190  0.0100
6021             RX       0     100     155     190     210     245     300     400
6022             RY    1268    1267    1266    1264    1264    1266    1267    1268
                 *

6023             KK  DRC42A
6024             KM        Return diverted flow from CP C42
6025             DR  DVC42A
                 *

6026             KK  RDC42A
6027             KM        Route flow from CP C42 to CP C45
6028             KM    This is in the 10-foot contour area, used the EEC route.
6029             RS       2    FLOW      -1
6030             RC   0.050   0.045   0.050    3540  0.0087
6031             RX       0     100     200     230     245     275     350     450
6032             RY    1275    1274    1273    1270    1270    1273    1274    1275
                 *

6033             KK     C45   BASIN
6034             KM     URS 2009
6035             BA   0.125
6036             LG    0.35    0.35    4.35    0.39       0
6037             UI       0     101     265      99      16       0       0       0       0       0
6038             UI       0       0       0       0       0       0       0       0       0       0
6039             UI       0       0       0       0       0       0       0       0       0       0
6040             UI       0       0       0       0       0       0       0       0       0       0
6041             UI       0       0       0       0       0       0       0       0       0       0
                 *
6042             KM    URS 2009

6043             KK   CPC45
6044             KM        Combine DRC42A with C45
6045             HC       2   0.246
                 *

6046             KK    DC45
6047             KM      Divert flow into C47
6048             KM        Natural divergence of flow due to a braided channel network.
6049             DT   DVC45
6050             DI       0      23      89     207     386     979    2098    3473    5427    7320
6051             DQ       0      12      47     110     208     548    1140    1879    2926    3943
                 *

6052             KK  RCPC45
6053             KM        Route remainder flow from CP C45 to CP C44
6054             KM    This is in the 10-foot contour area, used the EEC route.
6055             RS       1    FLOW      -1
6056             RC   0.050   0.045   0.050    1060  0.0097
6057             RX       0      80     160     170     180     190     270     350
1                                          HEC-1 INPUT                                          PAGE151

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

6058             RY    1253    1252    1251    1250    1250    1251    1252    1253
                 *

6059             KK     C44   BASIN
6060             KM     URS 2009
6061             BA   0.170
6062             LG    0.35    0.35    4.90    0.28       0
6063             UI       0      98     301     197      49      10       0       0       0       0
6064             UI       0       0       0       0       0       0       0       0       0       0
6065             UI       0       0       0       0       0       0       0       0       0       0
6066             UI       0       0       0       0       0       0       0       0       0       0
6067             UI       0       0       0       0       0       0       0       0       0       0
                 *
6068             KM    URS 2009

6069             KK   CPC44
6070             KM        Combine C43, C45 with C44
6071             HC       3   0.479
                 *

6072             KK  RCPC44
6073             KM        Route flow from CP C44 to CP C47
6074             KM     URS 2009
6075             RS      10    FLOW      -1
6076             RC   0.050   0.045   0.050   11418  0.0070
6077             RX       0    1039    1085    1096    1109    1124    1127    2149
6078             RY  1240.5  1239.4  1238.5  1238.5  1238.0  1238.0  1238.4  1240.6
                 *
```

```
6079          KK   DRC39
6080          KM        Return diverted flow from CP C39
6081          DR   DVC39
              *

6082          KK   RDC39
6083          KM        Route flow from CP C39 to CP C38
6084          KM    This is in the 10-foot contour area, used the EEC route.
6085          RS       8    FLOW      -1
6086          RC   0.050   0.045   0.050    9860  0.0107
6087          RX       0      50     105     125     135     155     210     260
6088          RY    1350    1349    1348    1346    1346    1348    1349    1350
              *

6089          KK   DRC43
6090          KM        Return diverted flow from CP C43
6091          DR   DVC43
              *

6092          KK   RDC43
6093          KM        Route flow from CP C43 to CP C38
6094          KM    This is in the 10-foot contour area, used the EEC route.
6095          RS       3    FLOW      -1
6096          RC   0.050   0.045   0.050    3900  0.0092
6097          RX       0     100     190     230     240     280     330     380
6098          RY    1280    1279    1278    1276    1276    1278    1279    1280
              *
1                                          HEC-1 INPUT                                                    PAGE152

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

6099          KK     C38   BASIN
6100          KM     URS 2009
6101          KM    Customized XKSAT Values
6102          BA   0.640
6103          LG    0.35    0.35    3.43    0.67       0
6104          UI       0      84     283     444     684     458     286     119      68      20
6105          UI      18       0       0       0       0       0       0       0       0       0
6106          UI       0       0       0       0       0       0       0       0       0       0
6107          UI       0       0       0       0       0       0       0       0       0       0
6108          UI       0       0       0       0       0       0       0       0       0       0
              *
6109          KM    URS 2009

6110          KK   CPC38
6111          KM        Combine DRC39, DRC43 with C38
6112          HC       3    .807
              *

6113          KK  RCPC38
6114          KM        Route flow from CP C38 to CP C47
6115          KM    This is in the 10-foot contour area, used the EEC route.
6116          RS      20    FLOW      -1
6117          RC   0.050   0.045   0.050   12808  0.0072
6118          RX       0     654     662     664     669     673     763    1265
6119          RY  1239.0  1238.0  1236.0  1236.4  1238.0  1238.0  1238.0  1239.0
              *

6120          KK  DRC42B
6121          KM        Return diverted flow from CP C42
6122          DR  DVC42B
              *

6123          KK  RDC42B
6124          KM        Route flow from CP C42 to CP C47;Typical XS- Small wash
6125          KM     URS 2009
6126          RS      14    FLOW      -1
6127          RC   0.050   0.045   0.050   15509  0.0079
6128          RX       0     600     700     706     711     717     817    1417
6129          RY       6       4       3       0       0       3       4       6
              *

6130          KK   DRC45
6131          KM        Return diverted flow from CP C45
6132          DR   DVC45
              *

6133          KK   RDC45
6134          KM        Route flow from CP C45 to CP C47
6135          KM     URS 2009
6136          RS       7    FLOW      -1
6137          RC   0.050   0.045   0.050   15852  0.0058
6138          RX      23     108     122     127     132     143     168     698
6139          RY  1237.4  1237.7  1237.1  1236.0  1236.0  1236.8  1237.0  1237.5
              *
1                                          HEC-1 INPUT                                                    PAGE153

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

6140          KK   DRC46
6141          KM        Return diverted flow from CP C46
6142          DR   DVC46
              *

6143          KK   RDC46
6144          KM        Route flow from CP C46 to CP C47
6145          KM     URS 2009
6146          RS      10    FLOW      -1
6147          RC   0.050   0.045   0.050    9680  0.0068
6148          RX       0      18     119     127     129     227     281     311
6149          RY  1228.0  1228.0  1226.0  1226.0  1226.1  1227.5  1228.0  1228.0
              *
```

```
6150          KK     C47   BASIN
6151          KM     URS 2009
6152          BA   1.000
6153          LG    0.35    0.35    4.60    0.33       0
6154          UI       0     107     384     583     970     769     511     276     134      68
6155          UI      27      27       0       0       0       0       0       0       0       0
6156          UI       0       0       0       0       0       0       0       0       0       0
6157          UI       0       0       0       0       0       0       0       0       0       0
6158          UI       0       0       0       0       0       0       0       0       0       0
              *
6159          KM    URS 2009

6160          KK  CPC47A
6161          KM        Combine C44, C38, DRC42B, DRC45, DRC46 with C47
6162          HC       6   2.565
              *
6163          KM    URS 2009

6164          KK   CPC47
6165          KM        Combine C48 with C47
6166          HC       2  61.043
              *

6167          KK  RCPC47
6168          KM        Route flow from CP C47A to CP B09
6169          KM     URS 2009
6170          RS       3    FLOW      -1
6171          RC   0.050   0.045   0.050    7953  0.0038
6172          RX       0     192     201     211     268     318     345     487
6173          RY  1158.0  1158.0  1155.8  1154.0  1154.0  1151.8  1151.8  1164.0
              *

6174          KK     B09   BASIN
6175          KM     URS 2009
6176          KM        Customized XKSAT Values
6177          BA   0.263
6178          LG    0.38    0.33    3.71    0.60       0
6179          UI       0      39     127     207     286     180     101      41      20       8
6180          UI       8       0       0       0       0       0       0       0       0       0
6181          UI       0       0       0       0       0       0       0       0       0       0
```



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

6182          UI       0       0       0       0       0       0       0       0       0       0
6183          UI       0       0       0       0       0       0       0       0       0       0
              *

6184          KK   CPB09
6185          KM    URS 2009
6186          KM        Combine C47 with B09
6187          HC       2  61.725
              *

6188          KK  RCPB09
6189          KM          URS 2009
6190          KM        Route flow from CP B09 to CP B12
6191          RS       1    FLOW      -1
6192          RC   0.050   0.045   0.050    1062  0.0047
6193          RX       0    1035    1059    1175    1283    1310    1353    2288
6194          RY  1141.5  1140.0  1136.0  1136.0  1137.8  1137.8  1140.0  1142.0
              *

6195          KK     B01   BASIN
6196          KM     URS 2009
6197          KM        Customized XKSAT Values
6198          BA   5.160
6199          LG    0.35    0.35    2.91    0.97       0
6200          UI       0     408    1645    2464    3806    4409    2977    2035     993     577
6201          UI     307     123     123       0       0       0       0       0       0       0
              *

6202          KK  RCPB01
6203          KM        Route flow from CP B01 to CP B03
6204          KM     THIS ROUTE IS FROM THE EEC STUDY
6205          RS      14    FLOW      -1
6206          RC   0.050   0.045   0.050   23370  0.0091
6207          RX    2490    2500    2750    2900    3100    3250    3500    3510
6208          RY    1400    1399    1398    1397    1397    1398    1399    1400
              *

6209          KK     B02   BASIN
6210          KM     URS 2009
6211          KM        Customized XKSAT Values
6212          BA   3.584
6213          LG    0.35    0.35    3.27    0.75       0
6214          UI       0     393    1395    2120    3523    2737    1813     951     470     233
6215          UI      96      96       0       0       0       0       0       0       0       0
              *

6216          KK  RCPB02
6217          KM        Route flow from CP B02 to CP B03
6218          KM     THIS ROUTE IS FROM THE EEC STUDY
6219          RS       2    FLOW      -1
6220          RC   0.050   0.045   0.050    4490  0.0063
6221          RX       0     250     500     775     825    1100    1350    1600
6222          RY    1280    1279    1278    1275    1275    1278    1279    1280
              *
```



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

6223          KK     B03   BASIN
6224          KM     URS 2009
6225          BA  13.202
```

```
6226          KM        Customized XKSAT Values
6227          LG    0.35    0.35    3.21    0.78       0
6228          UI       0     777    2114    3854    4973    6806    9450    7061    5419    4069
6229          UI    2603    1343    1014     664     238     238     238     238       0       0
              *

6230          KK   CPB03
6231          KM        Combine B01, B02 with B03
6232          HC       3  21.957
              *

6233          KK   DB03N
6234          KM    CP B03N represents the flow that are used for diversions into B16 & B18
6235          KM      FLOW_2D 2009
6236          KM        Natural divergence of flow due to a braided channel network.
6237          DT  DVB03N
6238          DI       0      32      91     221     784    1565    2633    3977    6959   11588
6239          DQ       0      12      39      87     264     563     871    1553    2595    3984
              *

6240          KK  RCPB03
6241          KM        Route remainder flow from CP B03 to CP B13
6242          KM        URS 2009
6243          RS       2    FLOW      -1
6244          RC   0.050   0.045   0.050    2991   0.006
6245          RX       0     637     678     750     775     868     930    1455
6246          RY  1240.1  1238.9  1238.0  1238.0  1238.0  1238.0  1240.0  1241.0
              *

6247          KK  DRB03N
6248          KM        Return diverted flow from North of B03
6249          DR  DVB03N
              *
6250          KM    FLOW-2D 2009

6251          KK  DB16
6252          KM      Divert flow from B03 North into B16
6253          KM        Remainder of flows go into B18 split
6254          KM        Natural divergence of flow due to a braided channel network.
6255          DT  DVB16
6256          DI       0      56     129     421     847    1153    1576    2335    3029
6257          DQ       0      47     111     344     647     820    1062    1450    1793
              *
6258          KM    FLOW-2D 2009

6259          KK  DB18
6260          KM      Divert flow from B18 split to B18 & B13
6261          KM        remainder of flows go back into B13
6262          KM        Natural divergence of flow due to a braided channel network.
6263          DT  DVB18
6264          DI       0      21      90     232     475     763    1146    1656    1945
```



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

6265          DQ       0      15      69     175     291     441     642     913    1071
              *

6266          KK     B13   BASIN
6267          KM     URS 2009
6268          BA   0.155
6269          LG    0.35    0.35    4.25    0.41       0
6270          UI       0     185     349      57       0       0       0       0       0       0
6271          UI       0       0       0       0       0       0       0       0       0       0
6272          UI       0       0       0       0       0       0       0       0       0       0
6273          UI       0       0       0       0       0       0       0       0       0       0
6274          UI       0       0       0       0       0       0       0       0       0       0
              *
6275          KM    FLOW-2D

6276          KK   CPB13
6277          KM        Combine DB18, DB03N with B13
6278          HC       3  15.131
              *

6279          KK    DB13
6280          KM      Divert flow from CP B13 into basin B14
6281          KM        Natural divergence of flow due to a braided channel network.
6282          KM     FLOW-2D 2009
6283          DT   DVB13
6284          DI       0     156     308     530     973    1488    2190    3945    5178    6923
6285          DQ       0      84     174     328     673    1074    1648    3070    4051    5435
              *

6286          KK  RCPB13
6287          KM         URS 2009
6288          KM        Route remainder flow from CP B13 to CP B05
6289          RS       4    FLOW      -1
6290          RC   0.050   0.045   0.050    4066  0.0057
6291          RX       0     606     675     728     852    1085    1255    1700
6292          RY  1221.6  1220.0  1220.0  1220.0  1220.0  1220.0  1220.6  1221.6
              *

6293          KK     B04   BASIN
6294          KM     URS 2009
6295          BA   0.906
6296          LG    0.35    0.35    4.10    0.44       0
6297          UI       0     110     378     583     940     668     433     196     106      42
6298          UI      25      25       0       0       0       0       0       0       0       0
              *

6299          KK  RCPB04
6300          KM        Route flow from CP B04 to CP B05
6301          KM     URS 2009
6302          RS       1    FLOW      -1
6303          RC   0.050   0.045   0.050     150  0.0054
```

```
6304          RX       0     606     675     728     852    1085    1255    1700
6305          RY  1221.6  1220.0  1220.0  1220.0  1220.0  1220.0  1220.6  1221.6
              *
1                                          HEC-1 INPUT                                                    PAGE157

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

6306          KK     B05
6307          KM     URS 2009
6308          BA   0.532
6309          LG    0.35    0.35    4.50    0.35       0
6310          UI       0     102     317     582     534     311     122      54      18      18
              *

6311          KK   CPB05
6312          KM    URS 2009
6313          KM        Combine B13, B04 with B05
6314          HC       3   4.767
              *

6315          KK  RCPB05
6316          KM        Route flow from CP B05 to CP B10
6317          KM     URS 2009
6318          RS       9    FLOW      -1
6319          RC   0.050   0.045   0.050    8286  0.0060
6320          RX       0     600     650     675     700     725     746    1347
6321          RY  1171.5  1170.0  1170.0  1170.0  1170.0  1170.0  1170.0  1171.5
              *

6322          KK     B06
6323          KM     URS 2009
6324          BA   0.566
6325          LG    0.35    0.35    4.60    0.33       0
6326          UI       0     153     452     786     487     200      74      22       0       0
6327          UI       0       0       0       0       0       0       0       0       0       0
6328          UI       0       0       0       0       0       0       0       0       0       0
6329          UI       0       0       0       0       0       0       0       0       0       0
6330          UI       0       0       0       0       0       0       0       0       0       0
              *

6331          KK  RCPB06
6332          KM        Route flow from CP B06 to CP B10
6333          KM     URS 2009
6334          RS       9    FLOW      -1
6335          RC   0.050   0.045   0.050    7040  0.0050
6336          RX       0     100     129     248     309     350     375     527
6337          RY  1166.4  1166.0  1166.0  1165.3  1165.4  1165.9  1166.0  1167.1
              *

6338          KK     B10   BASIN
6339          KM     URS 2009
6340          BA   0.552
6341          LG    0.35    0.35    4.70    0.30       0
6342          UI       0     151     444     769     473     192      70      22       0       0
6343          UI       0       0       0       0       0       0       0       0       0       0
6344          UI       0       0       0       0       0       0       0       0       0       0
6345          UI       0       0       0       0       0       0       0       0       0       0
6346          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                                    PAGE158

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

6347          KK   CPB10
6348          KM    URS 2009
6349          KM        Combine B05, B06 with B10
6350          HC       3   5.901
              *

6351          KK     B11
6352          KM     URS 2009
6353          BA   0.239
6354          LG    0.35    0.35    4.70    0.30       0
6355          UI       0      77     227     350     183      58      18      10       0       0
6356          UI       0       0       0       0       0       0       0       0       0       0
6357          UI       0       0       0       0       0       0       0       0       0       0
6358          UI       0       0       0       0       0       0       0       0       0       0
              *

6359          KK   CPB11
6360          KM    URS 2009
6361          KM        Combine B10 with B11
6362          HC       2   6.140
              *

6363          KK  RCPB11
6364          KM        Route flow from CP B11 to CP B12
6365          KM     URS 2009
6366          RS       3    FLOW      -1
6367          RC   0.050   0.045   0.050    4880  0.0195
6368          RX       0     119     250     388     432     486     625     671
6369          RY  1151.0    1150    1150    1150  1149.5    1150    1150  1150.3
              *

6370          KK     B12
6371          KM     URS 2009
6372          BA   0.332
6373          LG    0.35    0.35    4.55    0.34       0
6374          UI       0      56     178     310     353     212      99      45      15      11
6375          UI       0       0       0       0       0       0       0       0       0       0
6376          UI       0       0       0       0       0       0       0       0       0       0
6377          UI       0       0       0       0       0       0       0       0       0       0
              *
6378          KM    URS 2009
```

```
6379          KK  CPB12A
6380          KM       Combine B11 with B12
6381          HC       2   6.472
              *

6382          KK   CPB12
6383          KM    URS 2009
6384          KM        Combine B09 with B12
6385          HC       2  67.778
              *
1                                        HEC-1 INPUT                                                    PAGE159

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

6386          KK     H02   BASIN
6387          KM     URS 2009
6388          BA   1.584
6389          KM    Customized XKSAT Values
6390          LG    0.35    0.35    3.95    0.47      55
6391          UI       0    1513    2735    1124     453     193      71       0       0       0
6392          UI       0       0       0       0       0       0       0       0       0       0
6393          UI       0       0       0       0       0       0       0       0       0       0
6394          UI       0       0       0       0       0       0       0       0       0       0
6395          UI       0       0       0       0       0       0       0       0       0       0
              *

6396          KK  RCPH02
6397          KM        Route flow from CP H02 to CP H01 ;Typical Section - Small wash
6398          KM     URS 2009
6399          RS       4    FLOW      -1
6400          RC   0.050   0.045   0.050    8340  0.0211
6401          RX       0     600     700     706     711     717     817    1417
6402          RY     6.1       4       3       0       0       3       4     6.1
              *

6403          KK     H01   BASIN
6404          KM     URS 2009
6405          KM    Customized XKSAT Values
6406          BA   1.613
6407          LG    0.35    0.35    3.95    0.47       7
6408          UI       0     728    2298    2161     778     194      82       0       0       0
6409          UI       0       0       0       0       0       0       0       0       0       0
6410          UI       0       0       0       0       0       0       0       0       0       0
6411          UI       0       0       0       0       0       0       0       0       0       0
6412          UI       0       0       0       0       0       0       0       0       0       0
              *

6413          KK   CPH01
6414          KM        Combine H02 with H01
6415          HC       2   3.197
              *

6416          KK    DH01
6417          KM      Divert flow into H25
6418          KM        Natural divergence of flow due to a braided channel network.
6419          DT   DVH01
6420          DI       0       3     137     813    2118    4162    6875   10163   13936   18160
6421          DQ       0       3     103     448    1083    2118    3457    5041    6851    8870
              *

6422          KK  RCPH01
6423          KM        Route remainder flow from CP H01 to CP H24
6424          KM     URS 2009
6425          RS       4    FLOW      -1
6426          RC   0.050   0.045   0.050    5721  0.0124
6427          RX       0      12     129     281     405     497     544     615
6428          RY  1362.5  1362.5    1362  1361.2  1361.3  1362.0  1362.6  1362.6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6429          KK     H24   BASIN
6430          KM    Customized XKSAT Values
6431          KM     URS 2009
6432          BA   0.416
6433          LG    0.35    0.35    3.95    0.47       0
6434          UI       0     305     845     372      70       0       0       0       0       0
6435          UI       0       0       0       0       0       0       0       0       0       0
6436          UI       0       0       0       0       0       0       0       0       0       0
6437          UI       0       0       0       0       0       0       0       0       0       0
6438          UI       0       0       0       0       0       0       0       0       0       0
              *
6439          KM    URS 2009

6440          KK   CPH24
6441          KM        Combine H01 with H24
6442          HC       2   1.981
              *

6443          KK  RCPH24
6444          KM        Route flow from CP H24 to CP H55
6445          KM     URS 2009
6446          RS       5    FLOW      -1
6447          RC   0.050   0.045   0.050    6117  0.0090
6448          RX      93     718     757     813     863     962    1027    1146
6449          RY  1304.6  1303.5  1303.4  1303.1  1302.9  1302.8  1302.9  1304.5
              *

6450          KK     H55   BASIN
6451          KM    Customized XKSAT Values
6452          KM     URS 2009
6453          BA   0.339
```

```
6454          LG    0.35    0.35    3.95    0.47       0
6455          UI       0     183     572     411     112      25       0       0       0       0
6456          UI       0       0       0       0       0       0       0       0       0       0
6457          UI       0       0       0       0       0       0       0       0       0       0
6458          UI       0       0       0       0       0       0       0       0       0       0
6459          UI       0       0       0       0       0       0       0       0       0       0
              *
6460          KM    URS 2009

6461          KK   CPH55
6462          KM        Combine H24 with H55
6463          HC       2   2.320
              *

6464          KK  RCPH55
6465          KM        Route flow from CP H55 to CP H56
6466          KM     URS 2009
6467          RS       6    FLOW      -1
6468          RC   0.050   0.045   0.050    7222  0.0075
6469          RX       0     160     182     226     254     427     473     649
6470          RY  1256.4  1255.2  1255.0  1254.9  1255.0  1255.5  1255.5  1256.0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6471          KK     H56   BASIN
6472          KM     URS 2009
6473          BA   0.395
6474          LG    0.35    0.35    4.00    0.46       0
6475          UI       0     178     552     534     195      49      19       0       0       0
6476          UI       0       0       0       0       0       0       0       0       0       0
6477          UI       0       0       0       0       0       0       0       0       0       0
6478          UI       0       0       0       0       0       0       0       0       0       0
6479          UI       0       0       0       0       0       0       0       0       0       0
              *
6480          KM    URS 2009

6481          KK   CPH56
6482          KM        Combine H55 with H56
6483          HC       2   2.715
              *

6484          KK  RCPH56
6485          KM        Route flow from CP H56 to CP H57;Typical Section - Small Wash
6486          KM     URS 2009
6487          RS       6    FLOW      -1
6488          RC   0.050   0.045   0.050    7018  0.0073
6489          RX       0     600     700     706     711     717     817    1417
6490          RY       6       4       3       0       0       3       4       6
              *

6491          KK     H57   BASIN
6492          KM     URS 2009
6493          BA   0.421
6494          LG    0.35    0.35    4.00    0.46       0
6495          UI       0     194     613     558     197      47      22       0       0       0
6496          UI       0       0       0       0       0       0       0       0       0       0
6497          UI       0       0       0       0       0       0       0       0       0       0
6498          UI       0       0       0       0       0       0       0       0       0       0
              *
6499          KM    URS 2009

6500          KK   CPH57
6501          KM        Combine H56 with H57
6502          HC       2   3.1368
              *

6503          KK  RCPH57
6504          KM        Route flow from CP H57 to CP H68; Typical Section - Small Wash
6505          KM     URS 2009
6506          RS       6    FLOW      -1
6507          RC   0.050   0.045   0.050    6008  0.0058
6508          RX       0     600     700     706     711     717     817    1417
6509          RY       6       4       3       0       0       3       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6510          KK     H68   BASIN
6511          KM    Customized XKSAT Values
6512          KM     URS 2009
6513          BA   0.339
6514          LG    0.35    0.35    3.95    0.47       0
6515          UI       0     191     591     400     102      21       0       0       0       0
6516          UI       0       0       0       0       0       0       0       0       0       0
6517          UI       0       0       0       0       0       0       0       0       0       0
6518          UI       0       0       0       0       0       0       0       0       0       0
6519          UI       0       0       0       0       0       0       0       0       0       0
              *
6520          KM    URS 2009

6521          KK   CPH68
6522          KM        Combine H57 with H68
6523          HC       2   3.475
              *

6524          KK  B12RIV
6525          KM        Combine B08RIV, H68 with B12
6526          HC       3 262.589
              *

6527          KK  RCPB12
```

```
6528          KM        Route flow from CP B12RIV to CP H69RIV (WATERMAN WASH)
6529          KM      URS 2009
6530          RS       1    FLOW      -1
6531          RC   0.050   0.035   0.050    1512  0.0026
6532          RX       0    1070    1082    1150    1197    1219    1240    2258
6533          RY  1136.0  1134.0  1132.0  1130.0  1130.0  1132.0  1138.0  1140.0
              *

6534          KK   DRH01
6535          KM        Return diverted flow from CP H01
6536          DR   DVH01
              *

6537          KK   RDH01
6538          KM    URS 2009
6539          KM        Route flow from CP H01 to CP H25
6540          RS       4    FLOW      -1
6541          RC   0.050   0.045   0.050    5623  0.0124
6542          KM       Typical Sheet Flow Small Wash
6543          RX       0     600     700     706     711     717     817    1417
6544          RY       6       4       3       0       0       3       4       6
              *
6545          KM        URS 2009

6546          KK     H25
6547          KM    Customized XKSAT Values
6548          KM        Runoff from H25
6549          BA   0.317
6550          LG    0.35    0.35    3.95    0.47       0
6551          UI       0     238     651     275      50       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6552          UI       0       0       0       0       0       0       0       0       0       0
              *
6553          KM    URS 2009

6554          KK   CPH25
6555          KM        Combine DRH01 with H25
6556          HC       2   1.945
              *

6557          KK  RCPH25
6558          KM    URS 2009
6559          KM        Route flow from CP H25 to CP H58
6560          RS       3    FLOW      -1
6561          RC   0.050   0.045   0.050    6161  0.0088
6562          KM       Typical Sheet Flow Route
6563          RX       0     500     700     750     800     900    1100    1600
6564          RY       6       4       2       0       0       2       4       6
              *

6565          KK     H58
6566          KM        URS 2009
6567          KM    Customized XKSAT Values
6568          KM        Runoff from H58
6569          BA   0.305
6570          LG    0.35    0.35    3.95    0.47       0
6571          UI       0     165     515     369     100      22       0       0       0       0
6572          UI       0       0       0       0       0       0       0       0       0       0
              *
6573          KM    URS 2009

6574          KK   CPH58
6575          KM        Combine H25 with H58
6576          HC       2    2.25
              *
6577          KM    URS 2009

6578          KK  RCPH58
6579          KM        Route flow from CP H58 to CP H59
6580          RS       5    FLOW      -1
6581          RC   0.050   0.045   0.050    5199  0.0075
6582          RX     399     899     988    1000    1037    1065    1104    1604
6583          RY  1257.2  1256.2  1256.0  1256.0  1256.0  1256.1  1256.2  1257.2
              *

6584          KK     H26
6585          KM    URS 2009
6586          KM    Customized XKSAT Values
6587          KM        Runoff from H26
6588          BA   0.754
6589          LG    0.35    0.35    3.95    0.47       0
6590          UI       0     162     494     913     720     394     139      55      27       0
6591          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6592          KK  RCPH26
6593          KM    URS 2009
6594          KM        Route flow from CP H26 to CP H59
6595          KM       Typical Sheet Flow Route
6596          RS       2    FLOW      -1
6597          RC   0.050   0.045   0.050    3917  0.0074
6598          RX       0     500     700     750     800     900    1100    1600
6599          RY       6       4       2       0       0       2       4       6
              *

6600          KK     H59
6601          KM    Customized XKSAT Values
6602          KM    URS 2009
6603          KM        Runoff from H59
```

```
6604          BA   0.386
6605          LG    0.35    0.35    3.95    0.47       0
6606          UI       0     273     771     361      70       0       0       0       0       0
6607          UI       0       0       0       0       0       0       0       0       0       0
              *
6608          KM    URS 2009

6609          KK   CPH59
6610          KM        Combine H58, H26 with H59
6611          HC       3   3.390
              *
6612          KM    URS 2009

6613          KK    DH59
6614          KM      Divert flow into H61
6615          KM        Natural divergence of flow due to a braided channel network.
6616          DT   DVH59
6617          DI       0      60     604    1705    3352    5414    7849
6618          DQ       0      41     402    1068    1966    3068    4353
              *

6619          KK  RCPH59
6620          KM    URS 2009
6621          KM        Route remainder flow from CP H59 to CP H60
6622          RS      11    FLOW      -1
6623          RC   0.050   0.045   0.050    9192  0.0073
6624          KM       Typical Sheet Flow Route
6625          RX       0     500     700     750     800     900    1100    1600
6626          RY       6       4       2       0       0       2       4       6
              *

6627          KK     H60
6628          KM    Customized XKSAT Values
6629          KM    URS 2009
6630          KM        Runoff from H60
6631          BA   0.551
6632          LG    0.35    0.35    3.95    0.47       0
6633          UI       0     162     475     789     454     166      54      23       0       0
6634          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6635          KM    URS 2009

6636          KK   CPH60
6637          KM        Combine H59 with H60
6638          HC       2   1.737
              *

6639          KK  RCPH60
6640          KM    URS 2009
6641          KM        Route flow from CP H60 to CP H69
6642          RS       9    FLOW      -1
6643          RC   0.050   0.045   0.050    6105  0.0062
6644          RX     144     778     842     868     898     948    1035    1536
6645          RY  1162.1  1161.1  1160.9  1160.8  1160.8  1160.8  1161.1  1162.1
              *

6646          KK   DRH59
6647          KM        Return diverted flow from CP H59
6648          DR   DVH59
              *

6649          KK   RDH59
6650          KM    URS 2009
6651          KM        Route flow from CP H59 to CP H61
6652          RS      11    FLOW      -1
6653          RC   0.050   0.045   0.050    9092  0.0073
6654          RX       0     596     666     793     806     900     959    1526
6655          RY  1211.0  1210.0  1209.8  1209.8  1209.8  1210.0  1210.0  1211.2
              *

6656          KK     H61
6657          KM    URS 2009
6658          KM        Runoff from H61
6659          BA   0.473
6660          LG    0.35    0.35    4.00    0.46       0
6661          UI       0     144     422     684     380     132      42      20       0       0
6662          UI       0       0       0       0       0       0       0       0       0       0
              *
6663          KM    URS 2009

6664          KK   CPH61
6665          KM        Combine DRH59 with H61
6666          HC       2   2.677
              *

6667          KK  RCPH61
6668          KM    URS 2009
6669          KM        Route flow from CP H61 to CP H69
6670          RS       6    FLOW      -1
6671          RC   0.050   0.045   0.050    6465  0.0060
6672          KM       Typical Sheet Flow Small Wash
6673          RX       0     600     700     706     711     717     817    1417
6674          RY       6       4       3       0       0       3       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6675          KK     H69
6676          KM    Customized XKSAT Values
6677          KM    URS 2009
```

```
6678          KM        Runoff from H69
6679          BA   0.530
6680          LG    0.35    0.35    3.95    0.47       0
6681          UI       0     239     755     710     256      64      27       0       0       0
6682          UI       0       0       0       0       0       0       0       0       0       0
              *
6683          KM    URS 2009

6684          KK   CPH69
6685          KM        Combine H60, H61 with H69
6686          HC       3   4.944
              *

6687          KK  H69RIV
6688          KM        Combine B12RIV with H69
6689          HC       2 265.904
              *

6690          KK  RCPH69
6691          KM        Route flow from CP H69RIV to CP B15RIV (WATERMAN WASH)
6692          KM      URS 2009
6693          RS       1    FLOW      -1
6694          RC   0.050   0.035   0.050    1211  0.0033
6695          RX       0     570     582     650     697     719     740    1258
6696          RY  1135.0  1134.0  1132.0  1130.0  1130.0  1132.0  1138.0  1139.0
              *

6697          KK     H65
6698          KM    Customized XKSAT Values
6699          KM    URS 2009
6700          KM        Runoff from H65
6701          BA   0.416
6702          LG    0.35    0.35    3.95    0.47       0
6703          UI       0     132     387     608     324     105      33      18       0       0
6704          UI       0       0       0       0       0       0       0       0       0       0
              *

6705          KK  RCPH65
6706          KM    URS 2009
6707          KM        Route flow from CP H65 to CP H67
6708          RS       4    FLOW      -1
6709          RC   0.050   0.045   0.050    5763  0.0073
6710          KM        Typical Sheet Flow Route
6711          RX       0     500     700     750     800     900    1100    1600
6712          RY       6       4       2       0       0       2       4       6
              *
```



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

6713          KK     H67
6714          KM    URS 2009
6715          KM        Runoff from H67
6716          BA   0.186
6717          LG    0.35    0.35    4.00    0.46       0
6718          UI       0      92     290     237      75      17       0       0       0       0
6719          UI       0       0       0       0       0       0       0       0       0       0
              *

6720          KK   CPH67
6721          KM        Combine H65 with H67
6722          HC       2   0.602
              *

6723          KK  RCPH67
6724          KM    URS 2009
6725          KM        Route flow from CP H67 to CP H70
6726          RS       4    FLOW      -1
6727          RC   0.050   0.045   0.050    5443  0.0062
6728          KM        Typical Sheet Flow Route
6729          RX       0     500     700     750     800     900    1100    1600
6730          RY       6       4       2       0       0       2       4      60
              *

6731          KK     H70
6732          KM    Customized XKSAT Values
6733          KM    URS 2009
6734          KM        Runoff from H70
6735          BA   0.493
6736          LG    0.35    0.34    3.95    0.47       0
6737          UI       0     118     358     645     448     213      81      24      19       0
6738          UI       0       0       0       0       0       0       0       0       0       0
              *

6739          KK   CPH70
6740          KM        Combine H67 with H70
6741          HC       2   1.095
              *

6742          KK     B15
6743          KM    URS 2009
6744          KM        Runoff from B15
6745          BA   0.644
6746          LG    0.35    0.35    4.40    0.37       0
6747          UI       0     157     473     851     581     271     104      29      24       0
              *

6748          KK  B15RIV
6749          KM        Combine H69RIV, H70 with B15
6750          KM        Bullard Avenue crossing at B15RIV
6751          HC       3 267.644
              *
```



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

```
6752          KK  RCPB15
6753          KM        Route flow from CP B15RIV to CP B45RIV (WATERMAN WASH)
6754          KM      URS 2009
6755          RS       2    FLOW      -1
6756          RC   0.050   0.035   0.050    4500  0.0049
6757          RX       0    1160    1232    1334    1348    1474    1493    2522
6758          RY  1128.0  1126.0  1124.0  1122.2  1120.0  1120.0  1124.0  1127.3
              *

6759          KK   DRB13
6760          KM        Return diverted flow from CP B13
6761          DR   DVB13
              *

6762          KK   RDB13
6763          KM    URS 2009
6764          KM        Route diverted flow from CP B13 to CP B14
6765          RS       4    FLOW      -1
6766          RC   0.050   0.045   0.050    8437  0.0062
6767          RX   122.0   640.0   646.0   655.0   660.0   674.0   708.0  1318.0
6768          RY  1211.1  1207.9  1207.9  1210.1  1210.1  1207.9  1209.8  1211.1
              *

6769          KK     B14
6770          KM    URS 2009
6771          KM        Runoff from B14
6772          BA   0.393
6773          LG    0.35    0.35    4.45    0.36       0
6774          UI       0      89     272     497     366     186      68      24      14       0
              *

6775          KK  DRB18
6776          KM        Return diverted flow from B03 to B18
6777          DR  DVB18
              *
6778          KM    FLOW-2D 2009

6779          KK    DB14
6780          KM      Divert flow from B18 split
6781          KM        remainder of flows go into B14
6782          KM        Natural divergence of flow due to a braided channel network.
6783          DT   DVB14
6784          DI       0      16      77     177     408     579     799     909     951
6785          DQ       0      16      73     161     314     420     555     635     709
              *
6786          KM    FLOW-2D 2009

6787          KK    DB19
6788          KM    Divert flow from B19
6789          KM        remainder of flows go into B14
6790          KM        Natural divergence of flow due to a braided channel network.
6791          DT   DVB19
6792          DI       0      19      39      69     129     175     307     402     490     539
6793          DQ       0      19      33      57      94     117     170     209     239     253
              *
```



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

6794          KK   CPB14
6795          KM        Combine DRB13, DB19 with B14
6796          HC       3  12.331
              *

6797          KK     B21
6798          KM    URS 2009
6799          KM        Runoff from B21
6800          BA   0.313
6801          LG    0.35    0.35    4.15    0.43       0
6802          UI       0     105     308     461     231      72      22      14       0       0
              *

6803          KK   CPB21
6804          KM        Combine B14 with B21
6805          HC       2  12.644
              *

6806          KK  RCPB21
6807          KM    URS 2009
6808          KM        Route flow from CP B21 to CP B45
6809          RS       9    FLOW      -1
6810          RC   0.050   0.045   0.050   10609  0.0062
6811          RX       0     611     692     845     890     902     945    1590
6812          RY  1160.2  1159.3  1158.0  1158.0  1158.5  1158.8  1159.2  1160.2
              *

6813          KK     B20
6814          KM    URS 2009
6815          KM        Runoff from B20
6816          BA   0.177
6817          LG    0.35    0.35    4.00    0.46       0
6818          UI       0     100     308     209      53      11       0       0       0       0
              *

6819          KK  RCPB20
6820          KM    URS 2009
6821          KM        Route flow from CP B20 to CP B44
6822          RS       9    FLOW      -1
6823          RC   0.050   0.045   0.050   10978  0.0065
6824          RX       0     100     200     250     280     330     430     530
6825          RY    1130  1129.5    1129    1127    1127    1129  1129.5    1130
              *
```

```
6826          KK     B44
6827          KM    URS 2009
6828          KM        Runoff from B44
6829          BA   0.375
6830          LG    0.35    0.35    4.30    0.40       0
6831          UI       0      84     256     469     351     182      66      24      14       0
6832          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6833          KK   CPB44
6834          KM        Combine B20 with B44
6835          HC       2   0.552
              *

6836          KK  RCPB44
6837          KM    URS 2009
6838          KM        Route flow from CP B44 to CP B45
6839          RS       1    FLOW      -1
6840          RC   0.050   0.045   0.050    1511  0.0073
6841          RX       0     250     337     351     352     362     620     770
6842          RY  1120.0  1120.0  1120.0  1114.0  1114.6  1120.0  1120.0  1120.9
              *

6843          KK     B45
6844          KM    URS 2009
6845          KM        Runoff from B45
6846          BA   0.967
6847          LG    0.35    0.35    4.30    0.40       0
6848          UI       0     136     453     725    1049     673     397     163      79      29
6849          UI      29       0       0       0       0       0       0       0       0       0
6850          UI       0       0       0       0       0       0       0       0       0       0
              *

6851          KK   CPB45
6852          KM        Combine B21, AND B44 with B45
6853          HC       3  14.163
              *

6854          KK  B45RIV
6855          KM        Combine B15RIV with B45
6856          HC       2 282.165
              *

6857          KK  RCPB45
6858          KM        Route flow from CP B45RIV to CP H72RIV (WATERMAN WASH)
6859          KM    URS 2009
6860          RS       1    FLOW      -1
6861          RC   0.050   0.035   0.050     210  0.0038
6862          RX       0    1160    1232    1434    1448    1448    1473    3002
6863          RY  1128.0  1126.0  1124.0  1122.2  1120.0  1120.0  1124.0  1128.5
              *

6864          KK     H22
6865          KM    URS 2009
6866          KM    Customized XKSAT Values
6867          KM        Runoff from H22
6868          BA   1.461
6869          LG    0.35    0.35    4.15    0.43       7
6870          UI       0     707    2237    1884     620     144       0       0       0       0
6871          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6872          KK  RCPH22
6873          KM    URS 2009
6874          KM        Route flow from CP H22 to CP H23
6875          RS       4    FLOW      -1
6876          RC   0.050   0.045   0.050    5139   0.009
6877          KM        Typical Sheet Flow Small Wash
6878          RX       0     600     700     706     711     717     817    1417
6879          RY       6       4       3       0       0       3       4       6
              *

6880          KK     H03
6881          KM    URS 2009
6882          KM        Runoff from H03
6883          KM    Customized XKSAT Values
6884          BA   2.186
6885          LG    0.35    0.35    3.88    0.49      61
6886          UI       0     748    2683    2122    1252     719     407     232     141      62
6887          UI      62       0       0       0       0       0       0       0       0       0
              *

6888          KK  RCPH03
6889          KM    URS 2009
6890          KM        Route flow from CP H03 to CP H23
6891          RS       3    FLOW      -1
6892          RC   0.050   0.045   0.050    9452  0.0142
6893          KM        Typical Sheet Flow Route
6894          RX       0     500     700     750     800     900    1100    1600
6895          RY       6       4       2       0       0       2       4       6
              *

6896          KK     H23
6897          KM    URS 2009
6898          KM    Customized XKSAT Values
6899          KM        Runoff from H23
6900          BA   0.707
6901          LG    0.35    0.35    3.95    0.47       0
```

```
6902          UI       0     239     703    1041     517     159      48       0       0       0
6903          UI       0       0       0       0       0       0       0       0       0       0
              *

6904          KK   CPH23
6905          KM        Combine H22, H03 with H23
6906          HC       3   4.354
              *

6907          KK  RCPH23
6908          KM    URS 2009
6909          KM        Route flow from CP H23 to CP H62
6910          RS       4    FLOW      -1
6911          RC   0.050   0.045   0.050    6286  0.0089
6912          RX       0     798     824     937    1088    1100    1183    1775
6913          RY  1303.7  1301.8  1301.7  1301.3  1301.9  1301.9  1302.0  1303.2
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6914          KK     H27
6915          KM    Customized XKSAT Values
6916          KM    URS 2009
6917          KM        Runoff from H27
6918          BA   0.383
6919          LG    0.35    0.35    3.95    0.47       0
6920          UI       0     193     609     483     148      34       0       0       0       0
6921          UI       0       0       0       0       0       0       0       0       0       0
              *

6922          KK  RCPH27
6923          KM    URS 2009
6924          KM        Route flow from CP H27 to CP H62
6925          RS       4    FLOW      -1
6926          RC   0.050   0.045   0.050    6105  0.0100
6927          KM       Typical Sheet Flow Route
6928          RX       0     500     700     750     800     900    1100    1600
6929          RY       6       4       2       0       0       2       4       6
              *

6930          KK     H62
6931          KM    Customized XKSAT Values
6932          KM    URS 2009
6933          KM        Runoff from H62
6934          BA   0.494
6935          LG    0.35    0.35    3.95    0.47       0
6936          UI       0     291     887     562     136      29       0       0       0       0
6937          UI       0       0       0       0       0       0       0       0       0       0
              *

6938          KK   CPH62
6939          KM        Combine H23, H27 with H62
6940          HC       3   5.231
              *

6941          KK  RCPH62
6942          KM    URS 2009
6943          KM        Route flow from CP H62 to CP H63
6944          RS       3    FLOW      -1
6945          RC   0.050   0.045   0.050    3920  0.0082
6946          RX       0     511     527     612     694     797     850    1872
6947          RY  1251.0  1250.0  1249.9  1249.6  1249.6  1249.6  1249.8  1250.9
              *

6948          KK     H20
6949          KM    URS 2009
6950          KM    Customized XKSAT Values
6951          KM        Runoff from H20
6952          BA   0.496
6953          LG    0.35    0.35    3.95    0.47       1
6954          UI       0     250     788     626     192      44       0       0       0       0
6955          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

6956          KK  RCPH20
6957          KM    URS 2009
6958          KM        Route flow from CP H20 to CP H28
6959          RS       4    FLOW      -1
6960          RC   0.050   0.045   0.050    7401  0.0123
6961          KM       Typical Sheet Flow Route
6962          RX       0     500     700     750     800     900    1100    1600
6963          RY       6       4       2       0       0       2       4       6
              *

6964          KK     H28
6965          KM    Customized XKSAT Values
6966          KM    URS 2009
6967          KM        Runoff from H28
6968          BA   0.719
6969          LG    0.35    0.35    3.95    0.47       0
6970          UI       0     337    1068     943     325      75       0       0       0       0
6971          UI       0       0       0       0       0       0       0       0       0       0
              *

6972          KK   CPH28
6973          KM        Combine H20 with H28
6974          HC       2   1.237
              *

6975          KK  RCPH28
```

```
6976          KM    URS 2009
6977          KM        Route flow from CP H28 to CP H63
6978          RS       4    FLOW      -1
6979          RC   0.050   0.045   0.050    3965  0.0083
6980          RX       0     535     572     615     643     696     743    1255
6981          RY  1248.4  1247.4  1247.1  1246.8  1246.9  1247.0  1247.3  1248.4
              *

6982          KK     H63
6983          KM    URS 2009
6984          KM        Runoff from H63
6985          BA   0.167
6986          LG    0.35    0.35    4.00    0.46       0
6987          UI       0     148     363     114      17       0       0       0       0       0
6988          UI       0       0       0       0       0       0       0       0       0       0
              *

6989          KK   CPH63
6990          KM        Combine H62, H28 with H63
6991          HC       3   6.635
              *
6992          KM    URS 2009
1                                        HEC-1 INPUT                                          PAGE174

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

6993          KK    DH63
6994          KM      Divert flow into H53
6995          KM        Natural divergence of flow due to a braided channel network.
6996          DT   DVH63
6997          DI       0     481    1660    3307    5954    9187   12953   17212   21935   32676
6998          DQ       0     232     796    1471    2817    4488    6452    8687   11176   16863
              *

6999          KK  RCPH63
7000          KM    URS 2009
7001          KM        Route remainder flow from CP H63 to CP H66
7002          RS       6    FLOW      -1
7003          RC   0.050   0.045   0.050    7290  0.0073
7004          KM       Typical Sheet Flow Small Wash
7005          RX       0     600     700     706     711     717     817    1417
7006          RY       6       4       3       0       0       3       4       6
              *

7007          KK     H66
7008          KM    URS 2009
7009          KM        Runoff from H66
7010          BA   0.722
7011          LG    0.35    0.35    4.00    0.46       0
7012          UI       0      46     146     245     325     500     497     361     264     177
7013          UI      85      61      37      14      14      14       0       0       0       0
7014          UI       0       0       0       0       0       0       0       0       0       0
              *
7015          KM    URS 2009

7016          KK   CPH66
7017          KM        Combine H63 with H66
7018          HC       2   3.6414
              *

7019          KK  RCPH66
7020          KM    URS 2009
7021          KM        Route flow from CP H66 to CP H71
7022          RS       5    FLOW      -1
7023          RC   0.050   0.045   0.050    6460  0.0067
7024          KM       Typical Sheet Flow Small Wash
7025          RX       0     600     700     706     711     717     817    1417
7026          RY       6       4       3       0       0       3       4       6
              *

7027          KK     H71
7028          KM    URS 2009
7029          KM        Runoff from H71
7030          BA   0.648
7031          LG    0.35    0.35    4.00    0.46       0
7032          UI       0     463    1302     597     115       0       0       0       0       0
7033          UI       0       0       0       0       0       0       0       0       0       0
              *
7034          KM    URS 2009
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7035          KK   CPH71
7036          KM        Combine H66 with H71
7037          HC       2   4.289
              *

7038          KK  RCPH71
7039          KM    URS 2009
7040          KM        Route flow from CP H71 to CP H72
7041          RS       3    FLOW      -1
7042          RC   0.050   0.045   0.050    3336  0.0060
7043          KM       Typical Sheet Flow Small Wash
7044          RX       0     600     700     706     711     717     817    1417
7045          RY       6       4       3       0       0       3       4       6
              *

7046          KK     H72
7047          KM    URS 2009
7048          KM        Runoff from H72
7049          BA   0.422
7050          LG    0.35    0.35    4.15    0.43       0
7051          UI       0     385     925     276      42       0       0       0       0       0
```

```
7052          UI       0       0       0       0       0       0       0       0       0
              *
7053          KM    URS 2009

7054          KK   CPH72
7055          KM        Combine H71 with H72
7056          HC       2   4.711
              *

7057          KK  H72RIV
7058          KM        Combine H70RIV with H72
7059          HC       2 277.739
              *

7060          KK  RCPH72
7061          KM     URS 2009
7062          KM        Route flow from CP H72RIV to CP B46RIV (WATERMAN WASH)
7063          RS       4    FLOW      -1
7064          RC   0.050   0.035   0.050    6013  0.0025
7065          RX     0.0  1514.0  1756.0  1764.0  1787.0  1871.0  1875.0  3572.0
7066          RY  1129.0  1126.0  1124.0  1122.2  1120.0  1120.0  1124.0  1128.3
              *

7067          KK     B42
7068          KM    URS 2009
7069          KM        Runoff from B42
7070          BA   0.197
7071          LG    0.35    0.35    4.00    0.46       0
7072          UI       0      93     296     257      87      20       0       0       0       0
7073          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7074          KK  RCPB42
7075          KM   URS 2009
7076          KM        Route flow from CP B42 to CP B43
7077          RS       8    FLOW      -1
7078          RC   0.050   0.045   0.050    5606   0.062
7079          RX       0     141     150     160     175     201     331     335
7080          RY  1161.0  1160.4  1160.4  1160.4  1160.4  1160.4  1161.3  1161.3
              *

7081          KK     B43
7082          KM    URS 2009
7083          KM        Runoff from B43
7084          BA   0.174
7085          LG    0.35    0.35    4.70    0.30       0
7086          UI       0      71     220     246      98      28       8       0       0       0
7087          UI       0       0       0       0       0       0       0       0       0       0
              *

7088          KK   CPB43
7089          KM        Combine B42 with B43
7090          HC       2   0.371
              *

7091          KK     B41
7092          KM    URS 2009
7093          KM        Runoff from B41
7094          BA   0.445
7095          LG    0.35    0.35    4.20    0.42       0
7096          UI       0      68     223     372     481     298     157      67      29      14
7097          UI      14       0       0       0       0       0       0       0       0       0
7098          UI       0       0       0       0       0       0       0       0       0       0
              *

7099          KK   CPB41
7100          KM        Combine B43 with B41
7101          HC       2   0.816
              *

7102          KK  RCPB41
7103          KM   URS 2009
7104          KM        Route flow from CP B41 to CP B46
7105          RS       8    FLOW      -1
7106          RC   0.050   0.045   0.050    5931  0.0056
7107          RX       0     584     650     700     725     739     759    1260
7108          RY  1117.9  1116.0  1116.0  1116.0  1116.0  1116.0  1116.5  1117.5
              *

7109          KK     B46
7110          KM    URS 2009
7111          KM        Runoff from B46
7112          BA   1.059
7113          LG    0.35    0.35    4.40    0.37       0
7114          UI       0     101     377     569     940     846     573     355     155      96
7115          UI      32      27      27       0       0       0       0       0       0       0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7116          UI       0       0       0       0       0       0       0       0       0       0
              *

7117          KK   CPB46
7118          KM        Combine B41 with B46
7119          HC       2   2.432
              *

7120          KK  B46RIV
7121          KM        Combine H72RIV with B46
7122          HC       2 280.171
              *
```

```
7123          KK  RCPB46
7124          KM        Route flow from CP B46RIV to CP H74RIV (WATERMAN WASH)
7125          KM    URS 2009
7126          RS       1    FLOW      -1
7127          RC   0.050   0.035   0.050     446  0.0050
7128          RX     221     232     255     273     275     293     348    1495
7129          RY  1104.0  1104.0  1096.0  1093.0  1092.0  1092.0  1096.0  1102.0
              *

7130          KK   DRH63
7131          KM        Return diverted flow from CP H63
7132          DR   DVH63
              *

7133          KK   RDH63
7134          KM    URS 2009
7135          KM        Route flow from CP H63 to CP H53
7136          RS       3    FLOW      -1
7137          RC   0.050   0.045   0.050    6011  0.0073
7138          KM       Typical Sheet Flow Route
7139          RX       0     500     700     750     800     900    1100    1600
7140          RY       6       4       2       0       0       2       4       6
              *

7141          KK     H53
7142          KM    URS 2009
7143          KM        Runoff from H53
7144          BA   0.386
7145          LG    0.35    0.35    4.00    0.46       0
7146          UI       0      86     263     483     361     188      68      25      14       0
7147          UI       0       0       0       0       0       0       0       0       0       0
              *
7148          KM    URS 2009

7149          KK   CPH53
7150          KM        Combine DRH63 with H53
7151          HC       2   4.102
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7152          KK     H18
7153          KM    URS 2009
7154          KM    Customized XKSAT Values
7155          KM        Runoff from H18
7156          BA   0.438
7157          LG    0.35    0.35    3.95    0.47       0
7158          UI       0     261     792     494     117      26       0       0       0       0
7159          UI       0       0       0       0       0       0       0       0       0       0
              *

7160          KK  RCPH18
7161          KM    URS 2009
7162          KM        Route flow from CP H18 to CP H29
7163          RS      13    FLOW      -1
7164          RC   0.050   0.045   0.050   15850  0.0077
7165          KM       Typical Sheet Flow Route
7166          RX       0     500     700     750     800     900    1100    1600
7167          RY       6       4       2       0       0       2       4       6
              *

7168          KK     H29
7169          KM    URS 2009
7170          KM        Runoff from H29
7171          BA   1.041
7172          LG    0.35    0.35    4.00    0.46       0
7173          UI       0     129     441     682    1089     762     490     216     119      44
7174          UI      29       0       0       0       0       0       0       0       0       0
7175          UI       0       0       0       0       0       0       0       0       0       0
              *

7176          KK   CPH29
7177          KM        Combine H18 with H29
7178          HC       2   1.479
              *

7179          KK     H04
7180          KM    URS 2009
7181          KM        Runoff from H04
7182          KM    Customized XKSAT Values
7183          BA   1.207
7184          LG    0.35    0.35    3.45    0.65      11
7185          UI       0     400    1437    1195     701     404     229     135      82      34
7186          UI      34       0       0       0       0       0       0       0       0       0
              *

7187          KK  RCPH04
7188          KM    URS 2009
7189          KM        Route flow from CP H04 to CP H17
7190          RS       2    FLOW      -1
7191          RC   0.050   0.045   0.050    3834  0.0164
7192          RX       0     143     215     220     233     298     352     469
7193          RY  1400.7  1400.7  1400.0  1399.9  1400.0  1400.5  1401.0  1401.5
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7194          KK     H17
7195          KM        Runoff from H17
7196          KM    Customized XKSAT Values
7197          BA   0.453
```

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7198          LG    0.35    0.35    3.95    0.47       2
7199          UI       0     245     765     549     149      33       0       0       0       0
7200          UI       0       0       0       0       0       0       0       0       0       0
              *
7201          KM    URS 2009

7202          KK   CPH17
7203          KM       Combine H04 with H17
7204          HC       2   1.639
              *

7205          KK    DH17
7206          KM      Divert flow into H32
7207          KM        FLOW-2D 2009
7208          KM        Natural divergence of flow due to a braided channel network.
7209          KM    Route remaining flow to CP H30
7210          DT   DVH17
7211          DI       0      41      98     297     648     782     940    1115    1298    1455
7212          DQ       0      31      81     242     326     379     440     508     577     644
              *

7213          KK  DH30A
7214          KM      Divert flow from H30 back into H32 in the middle
7215          KM        FLOW-2D 2009
7216          KM        Natural divergence of flow due to a braided channel network.
7217          KM    Route remaining flow to CP H30
7218          DT  DVH30A
7219          DI       0      29      88     132     176     207     329     457     526     608
7220          DQ       0       7      30      50      72      90     160     241     280     313
              *

7221          KK  RCPH17
7222          KM    URS 2009
7223          KM        Route remainder flow from CP H17 to CP H30
7224          RS       5    FLOW      -1
7225          RC   0.050   0.045   0.050    7897  0.0142
7226          KM       Typical Sheet Flow Route
7227          RX       0     500     700     750     800     900    1100    1600
7228          RY       6       4       2       0       0       2       4       6
              *

7229          KK     H30
7230          KM    Customized XKSAT Values
7231          KM    URS 2009
7232          KM        Runoff from H30
7233          BA   0.477
7234          LG    0.35    0.35    3.95    0.47       0
7235          UI       0     236     744     609     193      45       0       0       0       0
              *
7236          KM    URS 2009
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7237          KK   CPH30
7238          KM        Combine H17 with H30
7239          HC       2   0.917
              *

7240          KK  RCPH30
7241          KM        Route flow from CP H30 to CP H51
7242          KM       URS 2009
7243          KM       Typical Sheet Flow Route
7244          RS       3    FLOW      -1
7245          RC   0.050   0.045   0.050    5110  0.0100
7246          RX       0     500     700     750     800     900    1100    1600
7247          RY       6       4       2       0       0       2       4       6
              *

7248          KK     H51
7249          KM    URS 2009
7250          KM        Runoff from H51
7251          BA   0.303
7252          LG    0.35    0.35    4.00    0.46       0
7253          UI       0     236     633     250      43       0       0       0       0       0
7254          UI       0       0       0       0       0       0       0       0       0       0
              *
7255          KM    URS 2009

7256          KK   CPH51
7257          KM        Combine H30 with H51
7258          HC       2   1.220
              *

7259          KK  RCPH51
7260          KM    URS 2009
7261          KM        Route flow from CP H51 to CP H52
7262          RS       4    FLOW      -1
7263          RC   0.050   0.045   0.050    5700  0.0077
7264          KM       Typical Sheet Flow Route
7265          RX       0     500     700     750     800     900    1100    1600
7266          RY       6       4       2       0       0       2       4       6
              *

7267          KK     H52
7268          KM    URS 2009
7269          KM        Runoff from H52
7270          BA   0.225
7271          LG    0.35    0.35    4.00    0.46       0
7272          UI       0     124     386     269      71      15       0       0       0       0
7273          UI       0       0       0       0       0       0       0       0       0       0
              *
7274          KM    URS 2009
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7275          KK  CPH52A
7276          KM        Combine H51 with H52
7277          HC       2   1.445
              *
7278          KM    URS 2009

7279          KK  CPH52B
7280          KM        Combine CP H53 and CP H29 with CP H52A
7281          HC       3   7.026
              *

7282          KK  RCPH52
7283          KM    URS 2009
7284          KM        Route flow from CP H52B to CP H54
7285          RS       4    FLOW      -1
7286          RC   0.050   0.045   0.050    4222  0.0066
7287          RX       0     796     892     972    1013    1076    1224    1776
7288          RY  1169.5  1168.0  1167.6  1167.3  1167.4  1167.3  1168.0  1169.5
              *

7289          KK     H54
7290          KM    URS 2009
7291          KM        Runoff from H54
7292          BA   0.213
7293          LG    0.35    0.35    4.00    0.46       0
7294          UI       0     152     428     196      38       0       0       0       0       0
7295          UI       0       0       0       0       0       0       0       0       0       0
              *
7296          KM    URS 2009

7297          KK   CPH54
7298          KM        Combine CPH52B with H54
7299          HC       2   7.239
              *

7300          KK  RCPH54
7301          KM    URS 2009
7302          KM        Route flow from CP H54 to CP H73
7303          RS       1    FLOW      -1
7304          RC   0.050   0.045   0.050    2625  0.0061
7305          KM       Typical Sheet Flow Route
7306          RX       0     500     700     750     800     900    1100    1600
7307          RY       6       4       2       0       0       2       4       6
              *

7308          KK     H05
7309          KM    Customized XKSAT Values
7310          KM    URS 2009
7311          KM        Runoff from H05
7312          BA   1.506
7313          LG    0.35    0.35    3.45    0.65      26
7314          UI       0     562    1692    2192     971     299      70       0       0       0
              *
              *
```



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

7315          KK  RCPH05
7316          KM    URS 2009
7317          KM        Route flow from CP H05 to CP H31
7318          KM       Typical Sheet Flow Route
7319          RS       2    FLOW      -1
7320          RC   0.050   0.045   0.050    6372  0.0155
7321          RX       0     500     700     750     800     900    1100    1600
7322          RY       6       4       2       0       0       2       4       6
              *

7323          KK    DH05
7324          KM      Divert flow from H05 to CPH15 through H31
7325          KM        FLOW-2D 2009
7326          KM        Natural divergence of flow due to a braided channel network.
7327          KM      Route remaining flow to CPH31
7328          DT   DVH05
7329          DI       0      15      72     102     257     407     539     710     925    1436
7330          DQ       0       0      15      25      76     122     167     226     300     479
              *
              *

7331          KK   DRH17
7332          KM        Return diverted flow from CP H17
7333          DR   DVH17
              *
7334          KM    URS 2009

7335          KK  DH31A
7336          KM      Divert flow from  H17 to H32
7337          KM      remainder flow goes into H31
7338          KM      FLOW-2D 2009
7339          KM        Natural divergence of flow due to a braided channel network.
7340          DT  DVH31A
7341          DI       0      38      72     107     150     223     371     422     492     590
7342          DQ       0      36      60      84     115     167     267     303     348     409
              *

7343          KK     H31
7344          KM    URS 2009
7345          KM    Customized XKSAT Values
7346          KM        Runoff from H31
7347          BA   0.373
7348          LG    0.35    0.35    3.95    0.47       0
7349          UI       0     232     694     404      88      22       0       0       0       0
```

```
7350          UI       0       0       0       0       0       0       0       0       0       0
              *
7351          KM    URS 2009

7352          KK   CPH31
7353          KM        Combine H05 with H31
7354          HC       3   1.589
              *
7355          KM    URS 2009
1                                        HEC-1 INPUT                                                PAGE183

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


7356          KK    H15B
7357          KM        Runoff from H15B
7358          BA   0.297
7359          LG    0.35    0.35    4.15    0.43      38
7360          UI       0     679     444       0       0       0       0       0       0       0
7361          UI       0       0       0       0       0       0       0       0       0       0
              *
7362          KM    URS 2009

7363          KK  RCH15B
7364          KM        Route flow from CP H15B to CP H15A
7365          RS       1    FLOW      -1
7366          RC   0.050   0.045   0.050    1940  0.0553
7367          RX       0     163     172     217     239     253     312     486
7368          RY  1343.8  1343.3  1343.3  1342.0  1342.0  1342.0  1342.6  1344.2
              *
7369          KM    URS 2009

7370          KK    H15A
7371          KM    Customized XKSAT Values
7372          KM        Runoff from H15A
7373          BA   0.478
7374          LG    0.35    0.35    3.88    0.49      28
7375          UI       0     413    1033     341      53       0       0       0       0       0
7376          UI       0       0       0       0       0       0       0       0       0       0
              *
7377          KM    URS 2009

7378          KK  CPH15A
7379          KM        Combine H15A with H15B
7380          HC       2   0.775
              *

7381          KK   DRH05
7382          KM        Return diverted flow from CP H05 through H31
7383          DR   DVH05
              *
7384          KM    URS 2009

7385          KK  CPH15
7386          KM        Combine CPH15A with Diversion from CP H05 through H31
7387          HC       2   1.287
              *

7388          KK  DH15A
7389          KM     Split-flow from CPH15 in Basin H33. Diverts flows to H33.
7390          KM     remainder flows to CPH31.
7391          KM     FLOW-2D 2009
7392          KM        Natural divergence of flow due to a braided channel network.
7393          DT  DVH15A
7394          DI       0      46     132     285     439     629     766    1161    1414    1636
7395          DQ       0      19      39      71      98     124     141     212     302     398
              *
7396          KM    URS 2009
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


7397          KK  CPH31A
7398          KM        Combine divert flows from Diversion from CP H15 and CP H31
7399          HC       2   2.567
              *
7400          KM    URS 2009

7401          KK    DH31
7402          KM      Divert flow into H32
7403          KM      remainder flow goes into H33
7404          KM      FLOW-2D 2009
7405          KM        Natural divergence of flow due to a braided channel network.
7406          DT   DVH31
7407          DI       0      15      48     148     307     516     688     799    1067    1224
7408          DQ       0       0      46      29      60     101     140     166     123     115
              *
7409          KM    URS 2009

7410          KK  DH33A
7411          KM      Divert flow from  DH31 to H33
7412          KM      remainder flow goes into H32
7413          KM      FLOW-2D 2009
7414          KM        Natural divergence of flow due to a braided channel network.
7415          DT  DVH33A
7416          DI       0      38     108     228     368     559     643     751    1100    1381
7417          DQ       0      32      83     177     288     440     504     588     871    1098
              *

7418          KK   DRH31
7419          KM        Return diverted flow from CP H31 to H32
7420          DR   DVH31
              *
7421          KM    URS 2009
```

```
7422          KK  CPH32B
7423          KM        Combine divert flows from Diversion DH31 and DH33A to H32
7424          HC       2   0.668
              *

7425          KK  RCPH31
7426          KM    URS 2009
7427          KM        Route remainder flow from CP H31 to CP H32
7428          RS       7    FLOW      -1
7429          RC   0.050   0.045   0.050    6984  0.0092
7430          RX       0     547     584     593     667     698     750    1359
7431          RY  1313.1  1311.5  1311.1  1311.1  1311.4  1311.5  1312.0  1313.0
              *

7432          KK  DRH31A
7433          KM        Return diverted flow from CP H30
7434          DR  DVH31A
              *
```



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

7435          KK  RDH31A
7436          KM    URS 2009
7437          KM        Route flow from CP H17 to CP H32
7438          RS       7    FLOW      -1
7439          RC   0.050   0.045   0.050   11566  0.0123
7440          KM       Typical Sheet Flow Route
7441          RX       0     500     700     750     800     900    1100    1600
7442          RY       6       4       2       0       0       2       4       6
              *

7443          KK  DRH30A
7444          KM        Return diverted flow from CP H30
7445          DR  DVH30A
              *
7446          KM    FLOW-2D 2009

7447          KK  CPH32A
7448          KM        Combine DRH17 with DRH30A
7449          KM        URS 2009
7450          HC       2   0.653
              *

7451          KK     H32
7452          KM    URS 2009
7453          KM    Customized XKSAT Values
7454          KM        Runoff from H32
7455          BA   0.714
7456          LG    0.35    0.35    3.95    0.47       0
7457          UI       0     201     592    1008     602     234      82      29       0       0
7458          UI       0       0       0       0       0       0       0       0       0       0
              *
7459          KM    URS 2009; FLOW-2D

7460          KK   CPH32
7461          KM        Combine CPH32B, DRH17 with H32
7462          HC       3   2.035
              *

7463          KK    DH32
7464          KM      Divert flow into H48
7465          KM        Natural divergence of flow due to a braided channel network.
7466          DT   DVH32
7467          DI       0      56     449    1403    2907    4831    7123    9753   12696   15933
7468          DQ       0       0      68     364     914    1653    2553    3600    4782    6090
              *
7469          KM    URS 2009

7470          KK  RCPH32
7471          KM        Route remainder flow from CP H32 to CP H50
7472          RS      13    FLOW      -1
7473          RC   0.050   0.045   0.050   11424  0.0081
7474          RX       0     583     698     781     864     972    1488    1638
7475          RY  1227.0  1226.0  1225.8  1225.7  1225.7  1225.9  1226.0  1227.0
              *
```



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

7476          KK   DRH32
7477          KM        Return diverted flow from CP H32
7478          DR   DVH32
              *

7479          KK   RDH32
7480          KM    URS 2009
7481          KM        Route flow from CP H32 to CP H48
7482          RS       4    FLOW      -1
7483          RC   0.050   0.045   0.050    5576  0.0086
7484          KM       Typical Sheet Flow Route
7485          RX       0     500     700     750     800     900    1100    1600
7486          RY       6       4       2       0       0       2       4       6
              *

7487          KK     H48
7488          KM    URS 2009
7489          KM        Runoff from H48
7490          BA   0.334
7491          LG    0.35    0.35    4.00    0.46       0
7492          UI       0     149     471     450     164      42      17       0       0       0
7493          UI       0       0       0       0       0       0       0       0       0       0
              *
7494          KM    URS 2009
```

```
7495          KK   CPH48
7496          KM        Combine DRH32 with H48
7497          HC       2   0.914
              *

7498          KK    DH48
7499          KM      Divert flow into H49
7500          KM        Natural divergence of flow due to a braided channel network.
7501          DT   DVH48
7502          DI       0      87     633    2063    4382    7595   11473   15959
7503          DQ       0      54     363    1107    2343    3919    5801    7962
              *

7504          KK  RCPH48
7505          KM           URS 2009
7506          KM        Route remainder flow from CP H48 to CP H50
7507          RS       6    FLOW      -1
7508          RC   0.050   0.045   0.050    6013  0.0073
7509          KM       Typical Sheet Flow Route
7510          RX       0     500     700     750     800     900    1100    1600
7511          RY       6       4       2       0       0       2       4       6
              *

7512          KK     H50
7513          KM    URS 2009
7514          KM        Runoff from H50
7515          BA   0.625
7516          LG    0.35    0.35    4.00    0.46       0
7517          UI       0      95     312     519     675     419     224      95      41      19
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7518          UI      19       0       0       0       0       0       0       0       0       0
7519          UI       0       0       0       0       0       0       0       0       0       0
              *
7520          KM    URS 2009

7521          KK   CPH50
7522          KM        Combine H32, H48 with H50
7523          HC       3   2.539
              *

7524          KK  RCPH50
7525          KM    URS 2009
7526          KM        Route flow from CP H50 to CP H73
7527          RS       2    FLOW      -1
7528          RC   0.050   0.045   0.050    2986  0.0067
7529          KM       Typical Sheet Flow Route
7530          RX       0     500     700     750     800     900    1100    1600
7531          RY       6       4       2       0       0       2       4       6
              *

7532          KK   DRH48
7533          KM        Return diverted flow from CP H48
7534          DR   DVH48
              *

7535          KK   RDH48
7536          KM    URS 2009
7537          KM        Route flow from CP H48 to CP H49
7538          RS       6    FLOW      -1
7539          RC   0.050   0.045   0.050    6013  0.0073
7540          KM       Typical Sheet Flow Route
7541          RX       0     500     700     750     800     900    1100    1600
7542          RY       6       4       2       0       0       2       4       6
              *

7543          KK     H49
7544          KM    URS 2009
7545          KM        Runoff from H49
7546          BA   0.478
7547          LG    0.35    0.35    4.00    0.46       0
7548          UI       0     130     384     666     410     166      61      19       0       0
7549          UI       0       0       0       0       0       0       0       0       0       0
              *
7550          KM    URS 2009

7551          KK   CPH49
7552          KM        Combine DRH48 with H49
7553          HC       2   1.008
              *
7554          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE188

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

7555          KK  RCPH49
7556          KM        Route flow from CP H49 to CP H73
7557          RS       4    FLOW      -1
7558          RC   0.050   0.045   0.050    3549  0.0062
7559          RX       0     570     582     650     697     719     740    1258
7560          RY  1135.0  1134.0  1132.0  1130.0  1130.0  1132.0  1138.0  1139.0
              *

7561          KK     H73
7562          KM    Customized XKSAT Values
7563          KM    URS 2009
7564          KM        Runoff from H73
7565          BA   0.290
7566          LG    0.35    0.35    3.95    0.47       0
7567          UI       0     341     654     111       0       0       0       0       0       0
7568          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
7569          KM    URS 2009

7570          KK   CPH73
7571          KM        Combine H54, H50, H49 with H73
7572          HC       4  11.076
              *

7573          KK  RCPH73
7574          KM         URS 2009
7575          KM        Route flow from CP H73 to CP H74
7576          RS       5    FLOW      -1
7577          RC   0.050   0.045   0.050    8907  0.0052
7578          KM       Typical Sheet Flow Farmfield
7579          RX       0     500     600     620     720     740     840    1340
7580          RY       5       3       1       0       0       1       3       5
              *

7581          KK     H74
7582          KM    URS 2009
7583          KM        Runoff from H74
7584          BA   0.802
7585          LG    0.35    0.35    4.00    0.46       0
7586          UI       0     297     892    1168     524     162      38       0       0       0
7587          UI       0       0       0       0       0       0       0       0       0       0
              *
7588          KM    URS 2009

7589          KK   CPH74
7590          KM        Combine H73 with H74
7591          HC       2  11.878
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


7592          KK  H74RIV
7593          KM        Combine B46RIV with H74
7594          HC       2 290.015
              *

7595          KK  RCPH74
7596          KM        Route flow from CP H74RIV to CP H77RIV (WATERMAN WASH)
7597          KM      URS 2009
7598          RS       2    FLOW      -1
7599          RC   0.050   0.035   0.050    4038   .0027
7600          RX      19     549     590     654     696     725     742    1769
7601          RY  1105.0  1104.0  1096.0  1093.0  1092.0  1092.0  1096.0  1102.0
              *

7602          KK  DRH15A
7603          KM        Return Split flow from CP H15A
7604          DR  DVH15A
              *
7605          KM    URS 2009

7606          KK  RCH15A
7607          KM        Route flow from CP H15A to CP H33
7608          RS       1    FLOW      -1
7609          RC   0.050   0.045   0.050    1940  0.0553
7610          RX       0      25     121     203     283     305     311     370
7611          RY  1320.0  1320.0  1317.5  1315.2  1316.0  1316.6  1316.8  1316.8
              *
              *

7612          KK  DRH33A
7613          KM        Return diverted flow Diversion H31 into H33
7614          DR  DVH33A
              *
7615          KM    URS 2009

7616          KK   RDH33
7617          KM        Route flow from CP H31 to CP H33
7618          RS       5    FLOW      -1
7619          RC   0.050   0.045   0.050   10756  0.0093
7620          KM       Typical Sheet Flow Route
7621          RX       0     500     700     750     800     900    1100    1600
7622          RY       6       4       2       0       0       2       4       6
              *
7623          KM    URS 2009

7624          KK  CPH33B
7625          KM        Combines diversions at CPH15A, CPH31A
7626          HC       2   2.059
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


7627          KK     H33
7628          KM    URS 2009
7629          KM    Customized XKSAT Values
7630          KM        Runoff from H33
7631          BA   1.083
7632          LG    0.35    0.35    3.95    0.47       0
7633          UI       0     194     609    1089    1125     668     285     138      37      36
7634          UI       0       0       0       0       0       0       0       0       0       0
7635          UI       0       0       0       0       0       0       0       0       0       0
              *
7636          KM    URS 2009

7637          KK   CPH33
7638          KM        Combine H33B with H33
7639          HC       2   2.833
              *
```

```
7640          KM    URS 2009

7641          KK    DH33
7642          KM      Divert flow into H46
7643          KM        Natural divergence of flow due to a braided channel network.
7644          DT   DVH33
7645          DI       0     349    1458    3403    6225   10616   16253
7646          DQ       0     175     729    1702    3113    5308    8126
              *

7647          KK  RCPH33
7648          KM    URS 2009
7649          KM        Route remainder flow from CP H33 to CP H47
7650          RS       3    FLOW      -1
7651          RC   0.050   0.045   0.050    5480  0.0080
7652          KM       Typical Sheet Flow Route
7653          RX       0     500     700     750     800     900    1100    1600
7654          RY       6       4       2       0       0       2       4       6
              *

7655          KK     H47
7656          KM    URS 2009
7657          KM        Runoff from H47
7658          BA   0.383
7659          LG    0.35    0.35    4.00    0.46       0
7660          UI       0     274     769     353      68       0       0       0       0       0
7661          UI       0       0       0       0       0       0       0       0       0       0
              *
7662          KM    URS 2009

7663          KK   CPH47
7664          KM        Combine H33 with H47
7665          HC       2   1.799
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7666          KK  RCPH47
7667          KM    URS 2009
7668          KM        Route flow from CP H47 to CP H75
7669          RS       4    FLOW      -1
7670          RC   0.050   0.045   0.050    5619  0.0056
7671          KM       Typical Sheet Flow Route
7672          RX       0     500     700     750     800     900    1100    1600
7673          RY       6       4       2       0       0       2       4       6
              *

7674          KK     H75
7675          KM    Customized XKSAT Values
7676          KM    URS 2009
7677          KM        Runoff from H75
7678          BA   0.747
7679          LG    0.10    0.25    4.00    0.39       5
7680          UI       0    1077    1377     338      63      29       0       0       0       0
7681          UI       0       0       0       0       0       0       0       0       0       0
7682          UI       0       0       0       0       0       0       0       0       0       0
              *
7683          KM    URS 2009

7684          KK   CPH75
7685          KM        Combine H47 with H75
7686          HC       2   2.273
              *

7687          KK  RCPH75
7688          KM    URS 2009
7689          KM        Route flow from CP H75 to CP H76
7690          RS       3    FLOW      -1
7691          RC   0.050   0.045   0.050    5356  0.0056
7692          KM       Typical Sheet Flow Farmfield
7693          RX       0     500     600     620     720     740     840    1340
7694          RY       5       3       1       0       0       1       3       5
              *

7695          KK     H76
7696          KM    URS 2009
7697          KM        Runoff from H76
7698          BA   0.752
7699          LG    0.35    0.35    4.00    0.46       0
7700          UI       0     387    1216     939     278      64       0       0       0       0
7701          UI       0       0       0       0       0       0       0       0       0       0
              *
7702          KM    URS 2009

7703          KK   CPH76
7704          KM        Combine H75 with H76
7705          HC       2   3.025
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

7706          KK  RCPH76
7707          KM       Route flow from CP H76 to CP H77
7708          KM       Typical Sheet Flow Small Wash
7709          KM     URS 2009
7710          RS       3    FLOW      -1
7711          RC   0.050   0.045   0.050    3551  0.0054
7712          RX       0     600     700     706     711     717     817    1417
7713          RY       6       4       3       0       0       3       4       6
              *
              *
```

```
7714          KK     H77
7715          KM    URS 2009
7716          KM        Runoff from H77
7717          BA   0.273
7718          LG    0.33    0.34    4.25    0.40       0
7719          UI       0     287     613     137       0       0       0       0       0       0
7720          UI       0       0       0       0       0       0       0       0       0       0
              *
7721          KM    URS 2009

7722          KK   CPH77
7723          KM        Combine H76 with H77
7724          HC       2   3.298
              *

7725          KK  H77RIV
7726          KM        Combine H74RIV with H77
7727          KM        Riggs Road crossing at H77RIV
7728          HC       2 294.029
              *

7729          KK  RCPH77
7730          KM        Route flow from CP H77RIV to CP B61RIV (WATERMAN WASH)
7731          KM    URS 2009
7732          RS       1    FLOW      -1
7733          RC   0.050   0.035   0.050    3676  0.0028
7734          RX     411     447     459     495     523     576     579     964
7735          RY  1092.0  1085.6  1082.7  1080.0  1080.0  1082.0  1086.0  1086.0
              *

7736          KK     B40
7737          KM    URS 2009
7738          KM        Runoff from B40
7739          KM        Customized XKSAT Values
7740          BA   0.182
7741          LG    0.35    0.35    3.19    0.79       0
7742          UI       0      64     190     268     127      38      10       0       0       0
7743          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE193

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

7744          KK  RCPB40
7745          KM    URS 2009
7746          KM        Route flow from CP B40 to CP B50
7747          RS      11    FLOW      -1
7748          RC   0.050   0.045   0.050    7346  0.0063
7749          RX       0      25      60      90     100     150     212     309
7750          RY  1147.6  1147.1  1146.0  1146.0  1146.0  1146.0  1146.0  1148.0
              *

7751          KK     B49
7752          KM    URS 2009
7753          KM        Runoff from B49
7754          BA   0.269
7755          LG    0.35    0.36    5.00    0.27       0
7756          UI       0      88     258     394     204      65      20      12       0       0
7757          UI       0       0       0       0       0       0       0       0       0       0
              *
7758          KM    URS 2009

7759          KK  RCPB49
7760          KM        Route flow from CP B49 to CP B50
7761          RS       2    FLOW      -1
7762          RC   0.050   0.045   0.050    1842  0.0043
7763          RX       0    1132    1140    1144    1151    1169    1199    2235
7764          RY  1119.2  1118.0  1116.0  1116.0  1116.5  1116.5  1117.4  1119.2
              *
              *

7765          KK     B50
7766          KM    URS 2009
7767          KM        Runoff from B50
7768          BA   0.273
7769          LG    0.35    0.35    4.45    0.36       0
7770          UI       0      67     201     361     246     115      44      12      10       0
7771          UI       0       0       0       0       0       0       0       0       0       0
              *

7772          KK   CPB50
7773          KM        Combine B40, B49 with B50
7774          HC       3
              *

7775          KK  RCPB50
7776          KM    URS 2009
7777          KM        ROUTE FLOW FROM CP B50 TO CP B48
7778          RS       5    FLOW      -1
7779          RC   0.050   0.045   0.050    2973  0.0027
7780          RX     0.0   530.0   540.0   545.0   550.0   560.0   562.0  1093.0
7781          RY  1113.0  1110.0  1110.0  1110.0  1110.0  1110.0  1110.0  1112.0
              *
7782          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE194

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

7783          KK     B19
7784          KM        Runoff from B19
7785          BA   0.538
7786          LG    0.35    0.35    4.15    0.43       0
7787          UI       0      68     231     359     567     391     250     107      60      21
7788          UI      15       0       0       0       0       0       0       0       0       0
```

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                 *

7789             KK   DRB19
7790             KM        Return diverted flow from B14
7791             DR   DVB19
                 *

7792             KK   CPB19
7793             KM        Combine B19 and DRB19
7794             HC        2   0.875
                 *

7795             KK  RCPB19
7796             KM    URS 2009
7797             KM        Route flow from CP B19 to CP B48
7798             RS        9    FLOW      -1
7799             RC   0.050   0.045   0.050    6721  0.0054
7800             RX        0     183     200     250     300     400     495     610
7801             RY  1128.1  1126.0  1126.0  1126.0  1126.0  1126.0  1126.0  1126.8
                 *

7802             KK     B48
7803             KM    URS 2009
7804             KM        Runoff from B48
7805             BA   0.574
7806             LG    0.35    0.35    4.55    0.34       0
7807             UI       0     165     483     815     479     182      62      23       0       0
                 *

7808             KK   CPB48
7809             KM        Combine CPB19, AND BCP50 with B48
7810             HC        3   2.173
                 *

7811             KK  RCPB48
7812             KM    URS 2009
7813             KM        Route flow from CP B48 to CP B47
7814             RS        2    FLOW      -1
7815             RC   0.050   0.045   0.050    1837  0.0044
7816             KM       Typical Sheet Flow Small Wash
7817             RX        0     600     700     706     711     717     817    1417
7818             RY        6       4       3       0       0       3       4       6
                 *
1                                          HEC-1 INPUT                                                    PAGE195

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

7819             KK     B47
7820             KM    URS 2009
7821             KM        Runoff from B47
7822             BA   0.316
7823             LG    0.35    0.35    4.50    0.35       0
7824             UI       0     125     379     454     188      55      15       0       0       0
7825             UI       0       0       0       0       0       0       0       0       0       0
                 *
7826             KM    URS 2009

7827             KK   CPB47
7828             KM        Combine B48 WITH B47
7829             HC        2   2.489
                 *

7830             KK  RCPB47
7831             KM    URS 2009
7832             KM        Route flow from CP B47 to CP B61
7833             RS        7    FLOW      -1
7834             RC   0.050   0.045   0.050    8683  0.0028
7835             RX    68.0    73.0    77.0    94.0   132.0   184.0   213.0   228.0
7836             RY  1092.0  1090.0  1088.0  1084.0  1082.0  1082.0  1086.0  1088.0
                 *

7837             KK     B61
7838             KM    URS 2009
7839             KM        Runoff from B61
7840             BA   0.746
7841             LG    0.13    0.26    4.60    0.28       5
7842             UI       0     335     989     874     400     160      74      16      16      16
                 *
7843             KM    URS 2009

7844             KK   CPB61
7845             KM        Combine B47 with B61
7846             HC        2   3.235
                 *

7847             KK  B61RIV
7848             KM        Combine H77RIV with B61
7849             HC        2 296.927
                 *

7850             KK  RCPB61
7851             KM      Route flow from CP B61RIV to CP H80RIV (WATERMAN WASH)
7852             KM    URS 2009
7853             RS        1    FLOW      -1
7854             RC   0.050   0.035   0.050     138  0.0050
7855             RX     411     447     459     495     523     576     579     964
7856             RY  1092.0  1085.6  1082.7  1080.0  1080.0  1082.0  1086.0  1086.0
                 *
1                                          HEC-1 INPUT                                                    PAGE196

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

7857             KK     B22
7858             KM    URS 2009
```

```
7859          KM        Runoff from B22
7860          KM        Customized XKSAT Values
7861          BA   0.548
7862          LG    0.35     0.35     3.53     0.62        0
7863          UI       0      406     1120      482       89        0        0        0        0        0
7864          UI       0        0        0        0        0        0        0        0        0        0
              *

7865          KK  RCPB22
7866          KM    URS 2009
7867          KM        Route flow from CP B22 to CP B37
7868          RS       8     FLOW       -1
7869          RC   0.050    0.045    0.050     5163   0.0062
7870          RX     0.0    632.0    650.0    675.0    690.0    700.0    704.0   1503.0
7871          RY  1155.2   1154.0   1154.0   1154.0   1154.0   1154.0   1154.0   1155.3
              *

7872          KK     B23
7873          KM    URS 2009
7874          KM        Runoff from B23
7875          KM        Customized XKSAT Values
7876          BA   0.299
7877          LG    0.35     0.35     2.89     0.98        0
7878          UI       0      494      595       63        0        0        0        0        0        0
7879          UI       0        0        0        0        0        0        0        0        0        0
              *
7880          KM    URS 2009

7881          KK    DB23
7882          KM      Divert flow into B24
7883          KM        Natural divergence of flow due to a braided channel network.
7884          DT   DVB23
7885          DI       0       81      357      966     1865     2998     4338     5865     7565     9427
7886          DQ       0        0       19      240      641     1183     1846     2618     3491     4457
              *

7887          KK  RCPB23
7888          KM    URS 2009
7889          KM        Route remainder flow from CP B23 to CP B36
7890          RS       4     FLOW       -1
7891          RC   0.050    0.045    0.050     3439   0.0070
7892          RX       0       93      132      150      175      200      211      260
7893          RY  1161.0   1160.4   1160.0   1160.0   1160.0   1160.0   1160.0   1160.9
              *

7894          KK     B36
7895          KM    URS 2009
7896          KM        Runoff from B36
7897          BA   0.184
7898          LG    0.35     0.35     4.55     0.34        0
7899          UI       0       89      282      237       78       18        0        0        0        0
7900          UI       0        0        0        0        0        0        0        0        0        0
              *
```



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

7901          KM    URS 2009

7902          KK   CPB36
7903          KM        Combine B23 with B36
7904          HC       2   0.468
              *

7905          KK   DRB23
7906          KM        Return divert from CP B23 in basin B24
7907          DR   DVB23
              *

7908          KK   RDB23
7909          KM    URS 2009
7910          KM        Route diverted flow from CP B23 to CP B24
7911          RS      11     FLOW       -1
7912          RC   0.050    0.045    0.050     3382   0.0071
7913          RX       0       60       73       78       80       94      150      252
7914          RY  1160.9   1161.0   1160.7   1160.7   1160.7   1160.7   1160.8   1161.0
              *

7915          KK     B24
7916          KM    URS 2009
7917          KM        Runoff from B24
7918          KM        Customized XKSAT Values
7919          BA   0.238
7920          LG    0.35     0.35     3.19     0.79        0
7921          UI       0      233      529      139       20        0        0        0        0        0
7922          UI       0        0        0        0        0        0        0        0        0        0
              *
7923          KM    URS 2009

7924          KK  CPB24A
7925          KM        Combine DRB23 with B24
7926          HC       2   0.253
              *
7927          KM    URS 2009

7928          KK   CPB24
7929          KM        Combine B36 with B24
7930          HC       2   0.721
              *

7931          KK  RCPB24
7932          KM    URS 2009
7933          KM        Route flow from CP B24 to CP B37
7934          RS       2     FLOW       -1
7935          RC   0.050    0.045    0.050     2005   0.0045
7936          RX       0      534      571      600      617      650      668     1249
```

```
7937          RY  1144.3  1142.4  1142.0  1142.0  1142.0  1142.0  1142.0  1144.7
              *
1                                   HEC-1 INPUT                                                    PAGE198

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

7938          KK     B37
7939          KM    URS 2009
7940          KM        Runoff from B37
7941          BA   0.086
7942          LG    0.35    0.35    4.55    0.34       0
7943          UI       0      59     170      83      17       0       0       0       0       0
7944          UI       0       0       0       0       0       0       0       0       0       0
              *
7945          KM    URS 2009

7946          KK   CPB37
7947          KM        Combine B22, B24 with B37
7948          HC       3   1.355
              *

7949          KK     B25
7950          KM    URS 2009
7951          KM        Runoff from B25
7952          KM        Customized XKSAT Values
7953          BA   0.298
7954          LG    0.35    0.35    3.07    0.86       0
7955          UI       0     172     527     345      86      17       0       0       0       0
7956          UI       0       0       0       0       0       0       0       0       0       0
              *
7957          KM    URS 2009

7958          KK   CPB25
7959          KM        COMBINE B37 WITH B25
7960          HC       2   1.653
              *

7961          KK  RCPB25
7962          KM    URS 2009
7963          KM        Route flow from CP B25 to CP B26
7964          RS       4    FLOW      -1
7965          RC   0.050   0.045   0.050    3354  0.0048
7966          RX      95     602     650     675     690     705     783    1305
7967          RY  1128.0  1126.0  1126.0  1126.0  1126.0  1126.0  1126.6  1127.7
              *

7968          KK     B26
7969          KM    URS 2009
7970          KM        Runoff from B26
7971          KM        Customized XKSAT Values
7972          BA   0.353
7973          LG    0.35    0.35    3.19    0.79       0
7974          UI       0     129     388     515     234      72      17       0       0       0
7975          UI       0       0       0       0       0       0       0       0       0       0
              *
7976          KM    URS 2009
1                                   HEC-1 INPUT                                                    PAGE199

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

7977          KK   CPB26
7978          KM        Combine B25 with B26
7979          HC       2   2.006
              *
7980          KM    URS 2009

7981          KK    DB26
7982          KM      Divert flow into B33
7983          KM        Natural divergence of flow due to a braided channel network.
7984          DT   DVB26
7985          DI       0       3      14     206     604    1152    1830    2621    3518
7986          DQ       0       0       0     114     353     686    1099    1585    2136
              *

7987          KK  RCPB26
7988          KM    URS 2009
7989          KM        Route remainder flow from CP B26 to CP B65
7990          RS       4    FLOW      -1
7991          RC   0.050   0.045   0.050    3114  0.0032
7992          RX       0      69     148     189     209     292     317     320
7993          RY  1111.2  1111.1  1110.0  1110.0  1110.3  1111.3  1111.5  1111.5
              *

7994          KK   DRB14
7995          KM        Return diverted flow from B18 split after diversion to B14
7996          DR   DVB14
              *
7997          KM    FLOW-2D 2009

7998          KK   DB18B
7999          KM      Divert flow from B18 split to B16 further downstream
8000          KM        remainder of flows go into B18
8001          KM        Natural divergence of flow due to a braided channel network.
8002          DT  DVB18B
8003          DI       0      12      78     155     245     377     431     559     614
8004          DQ       0       3      24      44      70     117     139     194     219
              *
              *
8005          KM    URS 2009

8006          KK  RDB18
8007          KM        Route diverted flow from CP B03 to CP B18
8008          RS      17    FLOW      -1
8009          RC   0.050   0.045   0.050   15261  0.0073
```

```
8010          RX       0     105     125     150     164     222     328     339
8011          RY  1212.8  1212.0  1212.0  1212.0  1212.0  1212.8  1213.7  1213.7
              *
              *
1                                        HEC-1 INPUT                                                    PAGE200

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


8012          KK     B17
8013          KM    URS 2009
8014          KM        Runoff from B17
8015          KM        Customized XKSAT Values
8016          BA   0.048
8017          LG    0.35    0.35    3.60    0.58       0
8018          UI       0      81      94      10       0       0       0       0       0       0
              *
8019          KM    URS 2009

8020          KK    DB17
8021          KM      Divert flow into B16
8022          KM        Natural divergence of flow due to a braided channel network.
8023          DT   DVB17
8024          DI       0       8     114     476    1123    1968    2986    4161    5479
8025          DQ       0       4      62     245     558     964    1452    2011    2638
              *

8026          KK  RCPB17
8027          KM    URS 2009
8028          KM        Route remainder flow from CP B17 to CP B18
8029          RS      13    FLOW      -1
8030          RC   0.050   0.045   0.050   10604  0.0072
8031          RX       0      25      50      65      85      86     116     212
8032          RY  1186.0  1186.0  1186.0  1186.0  1183.8  1183.8  1185.7  1186.0
              *

8033          KK     B18
8034          KM    URS 2009
8035          KM        Runoff from B18
8036          KM        Customized XKSAT Values
8037          BA   0.623
8038          LG    0.35    0.35    3.58    0.60       0
8039          UI       0      83     280     441     669     443     272     113      63      18
8040          UI      18       0       0       0       0       0       0       0       0       0
              *
8041          KM    URS 2009

8042          KK   CPB18
8043          KM        Combine DB18B, B17 with B18
8044          HC       3   1.641
              *
              *

8045          KK  DRB16
8046          KM        Return diverted flow from B18 (split between B18 and B16)
8047          DR  DVB16
              *
1                                        HEC-1 INPUT                                                    PAGE201

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


8048          KK  RDB16
8049          KM        Route diverted flow from CP B03 to CP B16
8050          RS       7    FLOW      -1
8051          RC   0.050   0.045   0.050    9151  0.0076
8052          KM       Typical Sheet Flow Small Wash
8053          RX       0     600     700     706     711     717     817    1417
8054          RY       6       4       3       0       0       3       4       6
              *

8055          KK   DRB17
8056          KM        Return diverted flow from B17
8057          DR   DVB17
              *

8058          KK   RDB17
8059          KM    URS 2009
8060          KM        Route flow from CP B17 to CP B16
8061          RS      12    FLOW      -1
8062          RC   0.050   0.045   0.050    4676  0.0073
8063          RX      23     102     125     150     165     175     250     279
8064          RY  1190.5  1189.9  1189.9  1189.9  1189.9  1189.9  1190.5  1190.9
              *

8065          KK  DRB18B
8066          KM        Return diverted flow from B18 split after diversion to B14
8067          DR  DVB18B
              *

8068          KK     B16
8069          KM    URS 2009
8070          KM        Runoff from B16
8071          KM        Customized XKSAT Values
8072          BA   0.821
8073          LG    0.35    0.35    3.58    0.60       0
8074          UI       0     259     757    1198     644     211      68      35       0       0
              *
8075          KM    URS 2009

8076          KK   CPB16
8077          KM        Combine DVB16, DVB17, DVB18B with B16
8078          HC       4   6.322
              *

8079          KK  RCPB16
```

```
8080          KM    URS 2009
8081          KM        Route flow from CP B16 to CP B39
8082          RS       6    FLOW      -1
8083          RC   0.050   0.045   0.050    6434  0.0065
8084          RX       0     565     666     680     745     829     844    1440
8085          RY  1162.0  1161.2  1160.3  1160.0  1160.0  1160.0  1160.4  1161.7
              *
1                                          HEC-1 INPUT                                                          PAGE202

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

8086          KK     B39
8087          KM    URS 2009
8088          KM        Runoff from B39
8089          KM        Customized XKSAT Values
8090          BA   0.390
8091          LG    0.35    0.35    3.74    0.54       0
8092          UI       0     113     331     556     324     121      41      16       0       0
8093          UI       0       0       0       0       0       0       0       0       0       0
              *
8094          KM    URS 2009

8095          KK  CPB39A
8096          KM        Combine B16 with B39
8097          HC       2   6.712
              *
8098          KM    URS 2009

8099          KK   CPB39
8100          KM        Combine B18 with B39
8101          HC       2   8.353
              *

8102          KK  RCPB39
8103          KM    URS 2009
8104          KM        Route flow from CP B39 to CP B54
8105          RS       4    FLOW      -1
8106          RC   0.050   0.045   0.050    3359  0.0051
8107          RX     0.0   580.0   599.0   615.0   616.0   626.0   737.0  1237.0
8108          RY  1127.0  1125.3  1125.0  1124.0  1124.0  1125.9  1125.9  1127.0
              *

8109          KK     B54
8110          KM    URS 2009
8111          KM        Runoff from B54
8112          BA   0.289
8113          LG    0.35    0.35    4.50    0.35       0
8114          UI       0      80     236     405     246      98      35      12       0       0
8115          UI       0       0       0       0       0       0       0       0       0       0
              *
8116          KM    URS 2009

8117          KK   CPB54
8118          KM        Combine B39 with B54
8119          HC       2   8.642
              *

8120          KK  RCPB54
8121          KM    URS 2009
8122          KM        Route flow from CP B54 to CP B38
8123          RS       2    FLOW      -1
8124          RC   0.050   0.045   0.050    1907  0.0047
8125          RX       0     575     633     806     834     845     947    1450
8126          RY  1116.2  1115.0  1115.0  1114.0  1114.0  1114.1  1115.0  1116.0
              *
1                                          HEC-1 INPUT                                                          PAGE203

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

8127          KK     B38
8128          KM    URS 2009
8129          KM        Runoff from B38
8130          BA   0.439
8131          LG    0.35    0.35    4.65    0.32       0
8132          UI       0      74     236     409     467     280     131      60      20      14
8133          UI       0       0       0       0       0       0       0       0       0       0
8134          UI       0       0       0       0       0       0       0       0       0       0
              *
8135          KM    URS 2009

8136          KK   CPB38
8137          KM        Combine B54 with B38
8138          HC       2  9.081
              *

8139          KK  RCPB38
8140          KM    URS 2009
8141          KM        Route flow from CP B38 to CP B65
8142          RS       1    FLOW      -1
8143          RC   0.050   0.045   0.050    1009  0.0020
8144          KM        Typical Sheet Flow Small Wash
8145          RX       0     600     700     706     711     717     817    1417
8146          RY       6       4       3       0       0       3       4       6
              *

8147          KK     B27
8148          KM    URS 2009
8149          KM        Runoff from B27
8150          KM        Customized XKSAT Values
8151          BA   0.856
8152          LG    0.35    0.35    3.03    0.89       0
8153          UI       0     551    1625     893     190      52       0       0       0       0
8154          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
8155          KK  RCPB27
8156          KM    URS 2009
8157          KM        Route flow from CP B27 to CP B35
8158          RS       3    FLOW     -1
8159          RC   0.050   0.045   0.050    3127  0.0064
8160          RX       0     575     648     656     735     835     891    1400
8161          RY  1132.2  1130.7  1130.1  1130.0  1130.0  1131.1  1131.1  1132.1
              *

8162          KK     B35
8163          KM    URS 2009
8164          KM        Runoff from B35
8165          KM        Customized XKSAT Values
8166          BA   0.249
8167          LG    0.35    0.35    3.19    0.79       0
8168          UI       0      80     234     364     192      62      20      11       0       0
8169          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8170          KM    URS 2009

8171          KK  CPB35A
8172          KM        Combine B27 with B35
8173          HC       2   1.105
              *

8174          KK   DRB26
8175          KM        Return diverted flow from B26
8176          DR   DVB26
              *
8177          KM    URS 2009

8178          KK   CPB35
8179          KM        COMBINE DRB26 WITH B35
8180          HC       2   2.288
              *

8181          KK  RCPB35
8182          KM    URS 2009
8183          KM        Route flow from CP B35 to CP B33
8184          RS       3    FLOW     -1
8185          RC   0.050   0.045   0.050    2169  0.0037
8186          RX       0     600     613     650     655     662     668    1173
8187          RY  1114.3  1112.8  1112.0  1112.0  1112.0  1112.0  1112.8  1115.0
              *

8188          KK     B28
8189          KM    URS 2009
8190          KM        Runoff from B28
8191          KM        Customized XKSAT Values
8192          BA   0.386
8193          LG    0.35    0.35    3.03    0.89       0
8194          UI       0     203     635     477     136      31       0       0       0       0
8195          UI       0       0       0       0       0       0       0       0       0       0
              *

8196          KK     B34
8197          KM    URS 2009
8198          KM        Runoff from B34
8199          KM        Customized XKSAT Values
8200          BA   0.125
8201          LG    0.35    0.35    3.15    0.82       0
8202          UI       0      52     162     175      68      19       6       0       0       0
8203          UI       0       0       0       0       0       0       0       0       0       0
              *
8204          KM    URS 2009

8205          KK   CPB34
8206          KM        Combine B28 with B34
8207          HC       2   0.511
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8208          KK  RCPB34
8209          KM    URS 2009
8210          KM        Route flow from CP B34 to CP B33
8211          RS       7    FLOW     -1
8212          RC   0.050   0.045   0.050    4130  0.0058
8213          RX       0     646     687     709     714     722     723    1406
8214          RY  1129.0  1128.0  1127.2  1127.1  1127.1  1127.8  1128.0  1129.0
              *

8215          KK     B33
8216          KM    URS 2009
8217          KM        Runoff from B33
8218          KM        Customized XKSAT Values
8219          BA   0.283
8220          LG    0.35    0.35    3.31    0.72       0
8221          UI       0      85     248     408     230      82      26      12       0       0
8222          UI       0       0       0       0       0       0       0       0       0       0
              *
8223          KM    URS 2009

8224          KK  CPB33A
8225          KM        Combine B34 with B33
8226          HC       2   0.794
              *
8227          KM    URS 2009
```

```
8228          KK   CPB33
8229          KM        Combine B35 with B33
8230          HC       2   3.082
              *

8231          KK  RCPB33
8232          KM    URS 2009
8233          KM        Route flow from CP B33 to CP B65
8234          RS       2    FLOW      -1
8235          RC   0.050   0.045   0.050    1361  0.0015
8236          RX       0     506     516     520     531     552     564    1575
8237          RY  1111.0  1110.0  1106.0  1106.0  1106.0  1107.6  1108.0  1110.0
              *
              *

8238          KK     B65
8239          KM    URS 2009
8240          KM        RUNOFF FROM B65
8241          BA   0.199
8242          LG    0.34    0.33    4.55    0.35       1
8243          UI       0     139     395     189      37       0       0       0       0       0
8244          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8245          KK   CPB65
8246          KM    URS 2009
8247          KM        COMBINE B26, B38, B33, WITH B65
8248          HC       4  13.184
              *

8249          KK  RCPB65
8250          KM    URS 2009
8251          KM        ROUTE FLOW FROM B65 TO B59
8252          RS       2    FLOW      -1
8253          RC   0.050   0.045   0.050    5570  0.0054
8254          KM       Typical Sheet Flow Farmfield
8255          RX       0    4500    4600    4620    4720    4740    4840    8340
8256          RY       5       3       1       0       0       1       3       5
              *

8257          KK     B55
8258          KM    URS 2009
8259          KM        Runoff from B55
8260          KM        Customized XKSAT Values
8261          BA   0.079
8262          LG    0.35    0.35    3.38    0.69       0
8263          UI       0      88     178      34       0       0       0       0       0       0
8264          UI       0       0       0       0       0       0       0       0       0       0
              *

8265          KK  RCPB55
8266          KM    URS 2009
8267          KM        Route flow from CP B55 to CP B59
8268          RS      12    FLOW      -1
8269          RC   0.050   0.045   0.050    6814  0.0044
8270          KM       Typical Sheet Flow Farmfield
8271          RX       0     500     600     620     720     740     840    1340
8272          RY       5       3       1       0       0       1       3       5
              *

8273          KK     B31
8274          KM    URS 2009
8275          KM        Runoff from B31
8276          KM        Customized XKSAT Values
8277          BA   0.160
8278          LG    0.35    0.35    3.01    0.90       0
8279          UI       0     166     359      83       0       0       0       0       0       0
8280          UI       0       0       0       0       0       0       0       0       0       0
              *

8281          KK  RCPB31
8282          KM    URS 2009
8283          KM        Route flow from CP B31 to CP B29
8284          RS       9    FLOW      -1
8285          RC   0.050   0.045   0.050    9995  0.0048
8286          RX       0     100     110     133     134     149     366     398
8287          RY  1139.3  1137.8  1137.2  1136.0  1136.0  1137.8  1138.7  1139.0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8288          KK     B32
8289          KM    URS 2009
8290          KM        Runoff from B32
8291          KM        Customized XKSAT Values
8292          BA   0.043
8293          LG    0.35    0.35    2.97    0.92       0
8294          UI       0      55      96      14       0       0       0       0       0       0
8295          UI       0       0       0       0       0       0       0       0       0       0
              *

8296          KK  RCPB32
8297          KM    URS 2009
8298          KM        Route flow from CP B32 to CP B29
8299          RS       8    FLOW      -1
8300          RC   0.050   0.045   0.050    9175  0.0078
8301          RX       0     111     127     136     137     147     235     276
8302          RY  1155.8  1155.8  1155.8  1154.0  1154.0  1155.8  1155.8  1156.4
              *
```

```
8303          KK     B30
8304          KM    URS 2009
8305          KM        Runoff from B30
8306          KM        Customized XKSAT Values
8307          BA   0.533
8308          LG    0.35    0.35    2.88    0.99       0
8309          UI       0     202     611     774     335     102      25       0       0       0
8310          UI       0       0       0       0       0       0       0       0       0       0
              *

8311          KK    DB30
8312          KM      Divert flow into B57
8313          KM        Natural divergence of flow due to a braided channel network.
8314          DT   DVB30
8315          DI       0       2      44     167     603    1427    2512    3826    5344
8316          DQ       0       2      44     165     450     961    1612    2386    3274
              *

8317          KK  RCPB30
8318          KM          URS 2009
8319          KM        Route remainder flow from CP B30 to CP B29
8320          RS       6    FLOW      -1
8321          RC   0.050   0.045   0.050    6496  0.0114
8322          RX       0     135     176     232     245     267     354     400
8323          RY  1140.6  1140.0  1139.3  1137.8  1137.8  1139.0  1140.3  1140.3
              *

8324          KK     B29
8325          KM    URS 2009
8326          KM        Runoff from B29
8327          KM        Customized XKSAT Values
8328          BA   0.915
8329          LG    0.35    0.35    3.17    0.81       0
8330          UI       0     208     633    1158     851     434     158      55      34       0
8331          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

8332          KM    URS 2009

8333          KK   CPB29
8334          KM        Combine B31, B32, B30 with B29
8335          HC       4   1.225
              *

8336          KK  RCPB29
8337          KM    URS 2009
8338          KM        Route flow from CP B29 to CP B59
8339          RS       6    FLOW      -1
8340          RC   0.050   0.045   0.050    6898  0.0038
8341          KM        Typical Sheet Flow Farmfield
8342          RX       0     500     600     620     720     740     840    1340
8343          RY       5       3       1       0       0       1       3       5
              *

8344          KK   DRB30
8345          KM        Return diverted flow from B30
8346          DR   DVB30
              *

8347          KK   RDB30
8348          KM    URS 2009
8349          KM        Route diverted flow from CP B30 to CP B57
8350          RS       4    FLOW      -1
8351          RC   0.050   0.045   0.050    4417  0.0082
8352          RX       0     101     218     230     245     249     254     328
8353          RY  1137.5  1136.0  1136.0  1136.4  1136.4  1136.4  1136.5  1137.1
              *

8354          KK     B57
8355          KM    URS 2009
8356          KM        Runoff from B57
8357          BA   0.099
8358          LG    0.36    0.34    4.30    0.41       0
8359          UI       0      52     164     122      34       8       0       0       0       0
8360          UI       0       0       0       0       0       0       0       0       0       0
              *
8361          KM    URS 2009

8362          KK   CPB57
8363          KM        Combine DRB30 with B57
8364          HC       2   0.525
              *

8365          KK  RCPB57
8366          KM    URS 2009
8367          KM        Route flow from CP B57 to CP B56
8368          RS       2    FLOW      -1
8369          RC   0.050   0.045   0.050    1398  0.0072
8370          RX       0      11      25      50     100     150     182     225
8371          RY  1110.3  1110.3  1110.0  1110.0  1110.0  1110.0  1110.0  1110.7
              *
```



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

8372          KK     B56
8373          KM    URS 2009
8374          KM        Runoff from B56
8375          BA   0.222
8376          LG    0.36    0.34    4.40    0.39       0
8377          UI       0      49     149     275     209     111      39      15       8       0
8378          UI       0       0       0       0       0       0       0       0       0       0
```

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                 *
8379             KM    URS 2009

8380             KK   CPB56
8381             KM        Combine B57 with B56
8382             HC       2   0.747
                 *

8383             KK  RCPB56
8384             KM    URS 2009
8385             KM        Route flow from CP B56 to CP B58
8386             RS       1    FLOW      -1
8387             RC   0.050   0.045   0.050    1037  0.0193
8388             RX       0     100     191     197     199     207     255     348
8389             RY  1102.9  1102.0  1102.0  1100.6  1100.3  1102.0  1102.0  1103.1
                 *

8390             KK     B58
8391             KM    URS 2009
8392             KM        Runoff from B58
8393             KM        Customized XKSAT Values
8394             BA   0.243
8395             LG    0.34    0.34    3.92    0.49       1
8396             UI       0      85     251     358     171      51      14       0       0       0
8397             UI       0       0       0       0       0       0       0       0       0       0
                 *
8398             KM    URS 2009

8399             KK   CPB58
8400             KM        Combine B56 with B58
8401             HC       2    0.99
                 *

8402             KK  RCPB58
8403             KM    URS 2009
8404             KM        Route flow from CP B58 to CP B59
8405             RS       6    FLOW      -1
8406             RC   0.050   0.045   0.050    4948  0.0016
8407             KM       Typical Sheet Flow Farmfield
8408             RX       0     500     600     620     720     740     840    1340
8409             RY       5       3       1       0       0       1       3       5
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8410             KK     B59
8411             KM    URS 2009
8412             KM        Runoff from B59
8413             BA   0.505
8414             LG    0.10    0.25    4.30    0.34       5
8415             UI       0     276     859     607     163      36       0       0       0       0
8416             UI       0       0       0       0       0       0       0       0       0       0
8417             UI       0       0       0       0       0       0       0       0       0       0
8418             UI       0       0       0       0       0       0       0       0       0       0
                 *
8419             KM    URS 2009

8420             KK   CPB59
8421             KM        Combine B65, B55, B29, B58 with B59
8422             HC       5  15.983
                 *

8423             KK  RCPB59
8424             KM    URS 2009
8425             KM        Route flow from CP B59 to CP B60
8426             RS       4    FLOW      -1
8427             RC   0.050   0.045   0.050    5208  0.0002
8428             KM       Typical Sheet Flow Farmfield
8429             RX       0    1000    1600    1620    1720    1740    1840    2840
8430             RY       6       3       1       0       0       1       3       6
                 *

8431             KK     B52
8432             KM    URS 2009
8433             KM        Runoff from B52
8434             KM        Customized XKSAT Values
8435             BA   0.576
8436             LG    0.35    0.35    3.74    0.54       0
8437             UI       0     151     447     787     504     217      82      23       0       0
8438             UI       0       0       0       0       0       0       0       0       0       0
                 *

8439             KK  RCPB52
8440             KM    URS 2009
8441             KM        Route flow from CP B52 to CP B60
8442             RS       1    FLOW      -1
8443             RC   0.050   0.045   0.050    6857  0.0041
8444             KM       Typical Sheet Flow Farmfield
8445             RX       0     500     600     620     720     740     840    1340
8446             RY       5       3       1       0       0       1       3      50
                 *

8447             KK     B53
8448             KM    URS 2009
8449             KM        Runoff from B53
8450             BA   0.537
8451             LG    0.34    0.34    4.00    0.46       1
8452             UI       0     165     483     778     429     147      47      23       0       0
                 *
1                                                HEC-1 INPUT                                                          PAGE211

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
8453          KK  RCPB53
8454          KM    URS 2009
8455          KM        Route flow from CP B53 to CP B60
8456          RS       1    FLOW     -1
8457          RC   0.050   0.045   0.050    9775  0.0029
8458          KM        Typical Sheet Flow Farmfield
8459          RX       0     500     600     620     720     740     840    1340
8460          RY       5       3       1       0       0       1       3       5
              *

8461          KK     B60
8462          KM    URS 2009
8463          KM        Runoff from B60
8464          BA   0.994
8465          LG    0.50    0.25    4.55    0.53       0
8466          UI       0      26      26      26      54      75     123     154     137     196
8467          UI     191     216     216     216     216     189     180     193     171     135
8468          UI     150     118      98      87      75      77      65      49      42      41
8469          UI      32      32      26      24      24      20      15      15      15      15
8470          UI      13       3       3       3       3       3       3       3       3       3
8471          UI       3       3       3       3       3       3       3       3       3       3
8472          UI       3       3       3       3       0       0       0       0       0       0
              *
8473          KM    URS 2009

8474          KK   CPB60
8475          KM        Combine B52, B53, B59 with B60
8476          HC       4   18.09
              *

8477          KK  RCPB60
8478          KM    URS 2009
8479          KM        Route flow from CP B60 to CP H80RIV
8480          RS       1    FLOW     -1
8481          RC   0.050   0.045   0.050    1556  0.0141
8482          KM        Typical Sheet Flow Farmfield
8483          RX       0     500     600     620     720     740     840    1340
8484          RY       5       3       1       0       0       1       3       5
              *

8485          KK   DRH33
8486          KM        Return diverted flow from CP H33
8487          DR   DVH33
              *

8488          KK   RDH33
8489          KM    URS 2009
8490          KM        Route flow from CP H33 to CP H46
8491          RS       3    FLOW      -1
8492          RC   0.050   0.045   0.050    4899  0.0082
8493          KM        Typical Sheet Flow Route
8494          RX       0     500     700     750     800     900    1100    1600
8495          RY       6       4       2       0       0       2       4       6
              *
```



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

8496          KK     H46
8497          KM    URS 2009
8498          KM        Runoff from H46
8499          BA   0.315
8500          LG    0.35    0.35    4.00    0.46       0
8501          UI       0     205     602     324      69      19       0       0       0       0
8502          UI       0       0       0       0       0       0       0       0       0       0
              *
8503          KM    URS 2009

8504          KK   CPH46
8505          KM        Combine DRH33 with H46
8506          HC       2   1.731
              *

8507          KK  RCPH46
8508          KM    URS 2009
8509          KM        Route flow from CP H46 to CP H78
8510          RS       3    FLOW      -1
8511          RC   0.050   0.045   0.050    5302  0.0072
8512          KM        Typical Sheet Flow Route
8513          RX       0     500     700     750     800     900    1100    1600
8514          RY       6       4       2       0       0       2       4       6
              *

8515          KK     H06
8516          KM    URS 2009
8517          KM        Runoff from H06
8518          KM    Customized XKSAT Values
8519          BA   1.227
8520          LG    0.35    0.35    2.83    1.03       0
8521          UI       0     671    2088    1476     395      87       0       0       0       0
8522          UI       0       0       0       0       0       0       0       0       0       0
              *

8523          KK    DH06
8524          KM      Divert flow into H13
8525          KM        Natural divergence of flow due to a braided channel network.
8526          DT   DVH06
8527          DI       0      53     189     414     739     830    1733    3436    6123   11407
8528          DQ       0      30     108     236     422     479     956    1842    3226    5710
              *

8529          KK  RCPH06
8530          KM    URS 2009
8531          KM        Route remainder flow from CP H06 to CP H14
8532          RS       3    FLOW      -1
```

```
8533          RC   0.050   0.045   0.050    5963  0.0159
8534          KM       Typical Sheet Flow Route
8535          RX       0    1000    1200    1250    1300    1400    1600    2100
8536          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8537          KK     H16
8538          KM    URS 2009
8539          KM    Customized XKSAT Values
8540          KM        Runoff from H16
8541          BA   0.310
8542          LG    0.35    0.35    3.03    0.89      54
8543          UI       0     344     534     202      76      28      15       0       0       0
8544          UI       0       0       0       0       0       0       0       0       0       0
              *

8545          KK  RCPH16
8546          KM    URS 2009
8547          KM       Route flow from CP H16 to CP H14
8548          RS       2    FLOW      -1
8549          RC   0.050   0.045   0.050    3989  0.0180
8550          KM       Typical Sheet Flow Route
8551          RX       0     500     700     750     800     900    1100    1600
8552          RY       6       4       2       0       0       2       4       6
              *

8553          KK     H14
8554          KM    URS 2009
8555          KM    Customized XKSAT Values
8556          KM        Runoff from H14
8557          BA   0.828
8558          LG    0.35    0.35    3.71    0.55       6
8559          UI       0     125     411     683     895     557     301     126      56      25
8560          UI      25       0       0       0       0       0       0       0       0       0
8561          UI       0       0       0       0       0       0       0       0       0       0
              *
8562          KM    URS 2009

8563          KK   CPH14
8564          KM       Combine H06, H16, with H14
8565          HC       3   1.653
              *

8566          KK  RCPH14
8567          KM    URS 2009
8568          KM       Route flow from CP H14 to CP H13
8569          RS       2    FLOW      -1
8570          RC   0.050   0.045   0.050    2816  0.0096
8571          RX       0     571     579     634     724     773     803    1304
8572          RY  1288.2  1286.8  1286.6  1286.7  1287.4  1287.9  1288.0  1289.0
              *

8573          KK   DRH06
8574          KM       Return diverted flow from CP H06
8575          DR   DVH06
              *
8576          KM    URS 2009
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8577          KK   RDH06
8578          KM       Route flow from CP H06 to CP H13
8579          RS       8    FLOW      -1
8580          RC   0.050   0.045   0.050    8012  0.0152
8581          RX     121     225     810    1345    1350    1355    1360    1367
8582          RY  1320.0  1320.0  1319.4  1320.0  1320.0  1320.0  1320.0  1320.0
              *

8583          KK     H13
8584          KM    URS 2009
8585          KM    Customized XKSAT Values
8586          KM        Runoff from H13
8587          BA   0.519
8588          LG    0.35    0.35    3.95    0.47       0
8589          UI       0     225     706     711     266      71      26       0       0       0
8590          UI       0       0       0       0       0       0       0       0       0       0
              *
8591          KM    URS 2009

8592          KK   CPH13
8593          KM       Combine H14, DRH06 with H13
8594          HC       3   2.884
              *

8595          KK  RCPH13
8596          KM    URS 2009
8597          KM       Route flow from CP H13 to CP H34
8598          RS       2    FLOW      -1
8599          RC   0.050   0.045   0.050    4033  0.0089
8600          KM       Typical Sheet Flow Route
8601          RX       0     500     700     750     800     900    1100    1600
8602          RY       6       4       2       0       0       2       4       6
              *

8603          KK     H12
8604          KM    URS 2009
8605          KM       Runoff from H12
8606          KM    Customized XKSAT Values
8607          BA   0.484
8608          LG    0.35    0.35    2.86    1.00       9
```

```
8609          UI       0     418    1046     345      53       0       0       0       0       0
8610          UI       0       0       0       0       0       0       0       0       0       0
              *

8611          KK  RCPH12
8612          KM    URS 2009
8613          KM        Route flow from CP H12 to CP H07
8614          RS       8    FLOW      -1
8615          RC   0.050   0.045   0.050    8425  0.0142
8616          RX       0      87     102     150     289     358     403     542
8617          RY  1302.2  1302.0  1301.9  1301.7  1301.5  1301.8  1302.0  1302.6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8618          KK     H07
8619          KM    URS 2009
8620          KM        Runoff from H07
8621          KM    Customized XKSAT Values
8622          BA   0.705
8623          LG    0.35    0.35    3.95    0.47       0
8624          UI       0     236     694    1037     520     161      49      31       0       0
              *
8625          KM    URS 2009

8626          KK     H35
8627          KM    Customized XKSAT Values
8628          KM        Runoff from H35
8629          BA   1.305
8630          LG    0.35    0.35    3.35    0.70       0
8631          UI       0    1315    2915     723     101       0       0       0       0       0
8632          UI       0       0       0       0       0       0       0       0       0       0
              *
8633          KM    URS 2009

8634          KK    DH35
8635          KM    Divert flow into H35
8636          KM        Natural divergence of flow due to a braided channel network.
8637          DT   DVH35
8638          DI       0      78     322     960    2455    4702    8003
8639          DQ       0       0       0      36     466    1381    2647
              *
8640          KM    URS 2009

8641          KK  RCH35A
8642          KM        Route remainder flow from H35 to CP H07
8643          RS       2    FLOW      -1
8644          RC   0.050   0.045   0.050    3783  0.0106
8645          KM       Typical Sheet Flow Route
8646          RX     0.0  1067.0  1087.0  1149.0  1312.0  1358.0  1403.0  2541.0
8647          RY  1303.1  1302.1  1302.0  1301.7  1301.6  1301.8  1302.0  1303.6
              *
8648          KM    URS 2009

8649          KK   CPH07
8650          KM        Combine H12, H07, H35
8651          HC       3   2.350
              *
8652          KM    URS 2009

8653          KK    DH07
8654          KM      Divert flow into H36
8655          KM        Natural divergence of flow due to a braided channel network.
8656          DT   DVH07
8657          DI       0     117     652    1846    3902    6543    9695
8658          DQ       0      70     353     922    1869    3082    4521
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8659          KK  RCPH07
8660          KM    URS 2009
8661          KM        Route remainder flow from CP H07 to CP H34
8662          RS       2    FLOW      -1
8663          RC   0.050   0.045   0.050    4138  0.0097
8664          KM       Typical Sheet Flow Route
8665          RX       0     500     700     750     800     900    1100    1600
8666          RY       6       4       2       0       0       2       4       6
              *

8667          KK     H34
8668          KM    URS 2009
8669          KM        Runoff from H34
8670          BA   0.407
8671          LG    0.35    0.35    4.00    0.46       0
8672          UI       0     382     898     254      38       0       0       0       0       0
8673          UI       0       0       0       0       0       0       0       0       0       0
              *
8674          KM    URS 2009

8675          KK   CPH34
8676          KM        Combine H13, H07 with H34
8677          HC       3   4.443
              *

8678          KK  RCPH34
8679          KM    URS 2009
8680          KM        Route flow from CP H34 to CP H45
8681          RS       3    FLOW      -1
8682          RC   0.050   0.045   0.050    5946  0.0084
8683          KM       Typical Sheet Flow Route
8684          RX       0     500     700     750     800     900    1100    1600
```

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8685          RY       6       4       2       0       0       2       4       6
              *

8686          KK     H45
8687          KM    URS 2009
8688          KM        Runoff from H45
8689          BA   0.278
8690          LG    0.35    0.35    4.00    0.46       0
8691          UI       0     143     450     347     103      24       0       0       0       0
8692          UI       0       0       0       0       0       0       0       0       0       0
              *
8693          KM    URS 2009

8694          KK   CPH45
8695          KM        Combine H34 with H45
8696          HC       2   4.721
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8697          KK  RCPH45
8698          KM    URS 2009
8699          KM        Route flow from CP H45 to CP H78
8700          RS       3    FLOW      -1
8701          RC   0.050   0.045   0.050    5302  0.0072
8702          KM       Typical Sheet Flow Farmfield
8703          RX       0     500     600     620     720     740     840    1340
8704          RY       5       3       1       0       0       1       3       5
              *

8705          KK   DRH07
8706          KM        Return diverted flow from CP H07
8707          DR   DVH07
              *

8708          KK   RDH07
8709          KM    URS 2009
8710          KM        Route flow from CP H07 to CP H36
8711          RS       3    FLOW      -1
8712          RC   0.050   0.045   0.050    5258  0.0097
8713          KM       Typical Sheet Flow Route
8714          RX       0     500     700     750     800     900    1100    1600
8715          RY       6       4       2       0       0       2       4       6
              *

8716          KK     H36
8717          KM    URS 2009
8718          KM        Runoff from H36
8719          BA   0.437
8720          LG    0.35    0.35    4.00    0.46       0
8721          UI       0     258     785     497     120      25       0       0       0       0
8722          UI       0       0       0       0       0       0       0       0       0       0
              *
8723          KM    URS 2009

8724          KK   CPH36
8725          KM        Combine DRH07 with H36
8726          HC       2   1.635
              *

8727          KK  RCPH36
8728          KM    URS 2009
8729          KM        Route flow from CP H36 to CP H44
8730          RS       3    FLOW      -1
8731          RC   0.050   0.045   0.050    6557  0.0088
8732          KM       Typical Sheet Flow Route
8733          RX       0     500     700     750     800     900    1100    1600
8734          RY       6       4       2       0       0       2       4       6
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8735          KK     H44
8736          KM    URS 2009
8737          KM        Runoff from H44
8738          BA   0.554
8739          LG    0.35    0.35    4.00    0.46       0
8740          UI       0     257     815     730     255      60       0       0       0       0
8741          UI       0       0       0       0       0       0       0       0       0       0
              *
8742          KM    URS 2009

8743          KK   CPH44
8744          KM        Combine H36 with H44
8745          HC       2   2.189
              *

8746          KK  RCPH44
8747          KM    URS 2009
8748          KM        Route flow from CP H44 to CP H78
8749          RS       2    FLOW      -1
8750          RC   0.050   0.045   0.050    3092  0.0078
8751          KM       Typical Sheet Flow Farmfield
8752          RX       0     500     600     620     720     740     840    1340
8753          RY       5       3       1       0       0       1       3       5
              *

8754          KK     H78
8755          KM    URS 2009
8756          KM        Runoff from H78
8757          BA   0.489
8758          LG    0.35    0.35    4.00    0.46       0
```

```
8759          UI       0     330     953     484      99       0       0       0       0       0
8760          UI       0       0       0       0       0       0       0       0       0       0
8761          UI       0       0       0       0       0       0       0       0       0       0
              *
8762          KM    URS 2009

8763          KK   CPH78
8764          KM        Combine H44, H45, H46 with H78
8765          HC       4   9.119
              *

8766          KK  RCPH78
8767          KM    URS 2009
8768          KM        Route flow from CP H78 to CP H79
8769          RS       3    FLOW      -1
8770          RC   0.050   0.045   0.050    5395  0.0067
8771          KM       Typical Sheet Flow Farmfield
8772          RX       0     500     600     620     720     740     840    1340
8773          RY       5       3       1       0       0       1       3       5
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8774          KK     H79
8775          KM    URS 2009
8776          KM        Runoff from H79
8777          BA   0.503
8778          LG    0.11    0.25    4.00    0.39       5
8779          UI       0     684    1102     141       0       0       0       0       0       0
8780          UI       0       0       0       0       0       0       0       0       0       0
              *
8781          KM    URS 2009

8782          KK   CPH79
8783          KM        Combine H78 with H79
8784          HC       2   9.622
              *

8785          KK  RCPH79
8786          KM    URS 2009
8787          KM        Route flow from CP H79 to CP H80
8788          RS       3    FLOW      -1
8789          RC   0.050   0.045   0.050    5277  0.0057
8790          KM       Typical Sheet Flow Farmfield
8791          RX       0     500     600     620     720     740     840    1340
8792          RY       5       3       1       0       0       1       3       5
              *

8793          KK     H80
8794          KM    URS 2009
8795          KM        Runoff from H80
8796          BA   0.458
8797          LG    0.44    0.29    4.10    0.60       0
8798          UI       0      54     198     331     360     298     208     126      71      46
8799          UI      29      19       6       6       6       6       6       6       0       0
8800          UI       0       0       0       0       0       0       0       0       0       0
              *
8801          KM    URS 2009

8802          KK   CPH80
8803          KM        Combine H79 with H80
8804          HC       2   10.08
              *

8805          KK  H80RIV
8806          KM        Combine B61RIV, B60 with H80
8807          HC       3 316.491
              *

8808          KK  RCPH80
8809          KM        Route flow from CP H80RIV to CP B62RIV (WATERMAN WASH)
8810          KM    URS 2009
8811          RS       1    FLOW      -1
8812          RC   0.050   0.035   0.050    1580  0.0025
8813          RX     411     447     459     495     523     576     579    3464
8814          RY  1092.0  1085.6  1082.7  1080.0  1080.0  1082.0  1086.0  1091.0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8815          KK     H43
8816          KM    URS 2009
8817          KM        Runoff from H43
8818          BA   0.220
8819          LG    0.35    0.35    4.00    0.46       0
8820          UI       0     173     461     179      30       0       0       0       0       0
8821          UI       0       0       0       0       0       0       0       0       0       0
              *

8822          KK  RCPH43
8823          KM    URS 2009
8824          KM        Route flow from CP H43 to CP H81
8825          RS       2    FLOW      -1
8826          RC   0.050   0.045   0.050    2844  0.0084
8827          KM       Typical Sheet Flow Farmfield
8828          RX       0     500     600     620     720     740     840    1340
8829          RY       5       3       1       0       0       1       3       5
              *

8830          KK     H81
8831          KM    URS 2009
8832          KM        Runoff from H81
```

```
8833          BA   0.243
8834          LG    0.10    0.25    4.00    0.39       5
8835          UI       0     797       0       0       0       0       0       0       0       0
8836          UI       0       0       0       0       0       0       0       0       0       0
              *

8837          KK  CPH81
8838          KM        Combine H43 with H81
8839          HC       2   0.463
              *

8840          KK  RCPH81
8841          KM    URS 2009
8842          KM        Route flow from CP H81 to CP H82
8843          RS       4    FLOW      -1
8844          RC   0.050   0.045   0.050    5449  0.0073
8845          KM        Typical Sheet Flow Farmfield
8846          RX       0     500     600     620     720     740     840    1340
8847          RY       5       3       1       0       0       1       3       5
              *

8848          KK     H08
8849          KM    URS 2009
8850          KM        Runoff from H08
8851          KM    Customized XKSAT Values
8852          BA   0.859
8853          LG    0.35    0.35    3.64    0.57      17
8854          UI       0     695    1818     677     108       0       0       0       0       0
8855          UI       0       0       0       0       0       0       0       0       0       0
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8856          KK  RCPH08
8857          KM    URS 2009
8858          KM        Route flow from CP H08 to CP H35
8859          RS       6    FLOW      -1
8860          RC   0.050   0.045   0.050    7389  0.0139
8861          RX      21     536     716     733     762     821     854    1391
8862          RY  1336.9  1335.8  1335.1  1335.2  1335.2  1335.7  1336.0  1337.0
              *
8863          KM    URS 2009

8864          KK     H11
8865          KM    Customized XKSAT Values
8866          KM        Runoff from H11
8867          BA   0.273
8868          LG    0.35    0.35    3.95    0.47       0
8869          UI       0     180     525     277      58       0       0       0       0       0
8870          UI       0       0       0       0       0       0       0       0       0       0
              *
8871          KM    URS 2009

8872          KK    DH11
8873          KM      Divert flow into H38
8874          KM        Natural divergence of flow due to a braided channel network.
8875          DT   DVH11
8876          DI       0       7     107     368     870    1856    3799
8877          DQ       0       0       0       0      75     413    1077
              *

8878          KK  RCPH11
8879          KM    URS 2009
8880          KM        Route remainder flow from CP H11 to CP H35
8881          RS       3    FLOW      -1
8882          RC   0.050   0.045   0.050    3400  0.0135
8883          RX       0     514     570     624     644     664     792     825
8884          RY  1297.3  1296.3  1296.0  1296.0  1296.0  1296.0  1296.0  1297.3
              *

8885          KK   DRH35
8886          KM        Return diverted flow from H35
8887          DR   DVH35
              *
8888          KM    URS 2009

8889          KK   CPH35
8890          KM        Combine H08, H11, with H35
8891          HC       3   1.276
              *

8892          KK  RCPH35
8893          KM    URS 2009
8894          KM        Route flow from CP H35 to CP H37
8895          RS       4    FLOW      -1
8896          RC   0.050   0.045   0.050    5238  0.0111
8897          RX     0.0   215.0   236.0   276.0   361.0   403.0   664.0   665.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8898          RY  1258.1  1258.1  1257.6  1256.7  1258.0  1258.3  1259.2  1259.3
              *

8899          KK     H37
8900          KM    URS 2009
8901          KM    Customized XKSAT Values
8902          KM        Runoff from H37
8903          BA   0.563
8904          LG    0.35    0.35    3.95    0.47       0
8905          UI       0     393    1118     534     105       0       0       0       0       0
8906          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
8907          KK   CPH37
8908          KM        Combine H35 with H37
8909          HC       2   3.004
              *

8910          KK  RCPH37
8911          KM    URS 2009
8912          KM        Route flow from CP H37 to CP H42
8913          RS       9    FLOW      -1
8914          RC   0.050   0.045   0.050    7693  0.0086
8915          RX       0     711     767     879     880     948    1007    1504
8916          RY  1172.9  1171.5  1171.6  1172.0  1172.0  1172.0  1172.0  1173.0
              *

8917          KK     H42
8918          KM    URS 2009
8919          KM        Runoff from H42
8920          BA   0.442
8921          LG    0.35    0.35    4.00    0.46       0
8922          UI       0     165     497     643     285      88      20       0       0       0
8923          UI       0       0       0       0       0       0       0       0       0       0
              *

8924          KK   CPH42
8925          KM        Combine H37 with H42
8926          HC       2   3.446
              *

8927          KK  RCPH42
8928          KM    URS 2009
8929          KM        Route flow from CP H42 to CP H82
8930          RS       4    FLOW      -1
8931          RC   0.050   0.045   0.050    5960  0.0081
8932          KM       Typical Sheet Flow Farmfield
8933          RX       0     500     600     620     720     740     840    1340
8934          RY       5       3       1       0       0       1       3       5
              *
1                                          HEC-1 INPUT                                                    PAGE223

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

8935          KK     H82
8936          KM    URS 2009
8937          KM        Runoff from H82
8938          BA   0.502
8939          LG    0.10    0.25    4.00    0.39       5
8940          UI       0     645    1117     158       0       0       0       0       0       0
8941          UI       0       0       0       0       0       0       0       0       0       0
8942          UI       0       0       0       0       0       0       0       0       0       0
              *

8943          KK   CPH82
8944          KM        Combine H81, H42 with H82
8945          HC       3   4.411
              *

8946          KK  RCPH82
8947          KM    URS 2009
8948          KM        Route flow from CP H82 to CP B62
8949          RS       4    FLOW      -1
8950          RC   0.050   0.045   0.050    8494  0.0052
8951          KM       Typical Sheet Flow Farmfield
8952          RX       0     500     600     620     720     740     840    1340
8953          RY       5       3       1       0       0       1       3       5
              *

8954          KK     H83
8955          KM    URS 2009
8956          KM        Runoff from H83
8957          BA   0.660
8958          LG    0.50    0.25    4.10    0.69       0
8959          UI       0      38      98     182     235     313     459     362     279     212
8960          UI     148      76      58      38      16      12      12      12       0       0
8961          UI       0       0       0       0       0       0       0       0       0       0
              *
8962          KM    URS 2009

8963          KK     B62
8964          KM        Runoff from B62
8965          BA   0.334
8966          LG    0.48    0.27    4.60    0.48       0
8967          UI       0      18      28      72     103     136     149     148     125     118
8968          UI      97      69      52      44      30      23      18      15      10      10
8969          UI       6       2       2       2       2       2       2       2       2       2
8970          UI       2       2       0       0       0       0       0       0       0       0
              *

8971          KK  B62RIV
8972          KM        Combine H80RIV, H83, RCPH82, with B62
8973          HC       4 321.897
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

8974          KK  RCPB62
8975          KM        Route flow from CP B62RIV to CP B63RIV (WATERMAN WASH)
8976          KM    URS 2009
8977          RS       1    FLOW      -1
8978          RC   0.050   0.035   0.050    1310  0.0036
8979          RX     252    3260    3269    3279    3323    3349    3365    4375
8980          RY  1066.5  1062.0  1058.3  1057.0  1054.0  1054.0  1064.0  1067.0
              *
```

```
8981          KK     B63
8982          KM    URS 2009
8983          KM        Runoff from B63
8984          BA   0.226
8985          LG    0.49    0.26    4.50    0.53       0
8986          UI       0      14      29      74      95     119     117     102      84      67
8987          UI      45      36      24      17      13      10       8       5       2       2
8988          UI       2       2       2       2       2       2       2       0       0       0
              *

8989          KK  B63RIV
8990          KM        Combine B62RIV,with B63
8991          KM        Buenos Aires Road crossing at B63RIV
8992          HC       2 322.123
              *

8993          KK  RCPB63
8994          KM      Route flow from CP B63RIV to CP B64RIV (WATERMAN WASH)
8995          KM    URS 2009
8996          RS       1    FLOW      -1
8997          RC   0.050   0.035   0.050    2195  0.0027
8998          RX     252    2760    2769    2779    2823    2849    2865    4375
8999          RY  1068.0  1062.0  1058.3  1057.0  1054.0  1054.0  1064.0  1068.0
              *

9000          KK     B64
9001          KM    URS 2009
9002          KM        Runoff from B64
9003          BA   0.288
9004          LG    0.49    0.26    4.70    0.47       0
9005          UI       0      13      22      53      69      84     105     151     150     116
9006          UI      95      76      60      37      23      20      13       8       4       4
9007          UI       4       4       0       0       0       0       0       0       0       0
              *

9008          KK  B64RIV
9009          KM        Combine B63RIV with B64
9010          HC       2 321.980
              *
```



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

9011          KK  RCPB64
9012          KM      URS 2009
9013          KM        Route flow from CP B64RIV to CP H86RIV (WATERMAN WASH)
9014          RS       1    FLOW      -1
9015          RC   0.050   0.035   0.050    1227  0.0033
9016          RX      32    1557    1593    1618    1699    1722    1765    3284
9017          RY  1059.0  1056.0  1048.7  1046.0  1046.0  1050.0  1056.0  1059.0
              *

9018          KK     H09
9019          KM    URS 2009
9020          KM    Customized XKSAT Values
9021          KM        Runoff from H09
9022          BA   1.106
9023          LG    0.35    0.35    3.81    0.52      53
9024          UI       0    1071    1912     780     310     131      50       0       0       0
9025          UI       0       0       0       0       0       0       0       0       0       0
              *

9026          KK  RCPH09
9027          KM    URS 2009
9028          KM        Route flow from CP H09 to CP H10
9029          RS       2    FLOW      -1
9030          RC   0.050   0.045   0.050    6052  0.0205
9031          KM       Typical Sheet Flow Route
9032          RX       0     500     700     750     800     900    1100    1600
9033          RY       6       4       2       0       0       2       4       6
              *

9034          KK     H10
9035          KM    URS 2009
9036          KM    Customized XKSAT Values
9037          KM        Runoff from H10
9038          BA   0.528
9039          LG    0.35    0.35    3.95    0.47       0
9040          UI       0     401    1091     450      80       0       0       0       0       0
              *

9041          KK   CPH10
9042          KM        Combine H09 with H10
9043          HC       2   1.630
              *

9044          KK  RCPH10
9045          KM         URS 2009
9046          KM        Route flow from CP H10 to CP H38
9047          KM       Typical Sheet Flow Route
9048          RS       2    FLOW      -1
9049          RC   0.050   0.045   0.050    5203  0.0138
9050          RX       0     500     700     750     800     900    1100    1600
9051          RY       6       4       2       0       0       2       4       6
              *
```



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

9052          KK   DRH11
9053          KM        Return diverted flow from CP H11
9054          DR   DVH11
              *
```

```
9055          KK   RDH11
9056          KM    URS 2009
9057          KM        Route flow from CP H11 to CP H38
9058          RS       4    FLOW     -1
9059          RC   0.050   0.045   0.050    5461  0.0128
9060          RX       5     108     146     205     234     297     520     579
9061          RY  1300.2  1299.9  1299.7  1298.9  1299.4  1299.4  1299.9  1299.9
              *

9062          KK     H38
9063          KM    URS 2009
9064          KM        Runoff from H38
9065          KM    Customized XKSAT Values
9066          BA   0.481
9067          LG    0.35    0.35    3.95    0.47       0
9068          UI       0     389    1018     379      60       0       0       0       0       0
9069          UI       0       0       0       0       0       0       0       0       0       0
              *
9070          KM    URS 2009

9071          KK   CPH38
9072          KM        Combine H10, DRH11 with H38
9073          HC       3   1.009
              *

9074          KK  RCPH38
9075          KM    URS 2009
9076          KM        Route flow from CP H38 to CP H39
9077          RS       3    FLOW     -1
9078          RC   0.050   0.045   0.050    5099  0.0108
9079          KM       Typical Sheet Flow Small Wash
9080          RX       0     600     700     706     711     717     817    1417
9081          RY       6       4       3       0       0       3       4       6
              *

9082          KK     H39
9083          KM    URS 2009
9084          KM        Runoff from H39
9085          BA   0.379
9086          LG    0.35    0.35    4.00    0.46       0
9087          UI       0     303     798     304      50       0       0       0       0       0
9088          UI       0       0       0       0       0       0       0       0       0       0
              *
```



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

9089          KK   CPH39
9090          KM        Combine H38 with H39
9091          HC       2
              *
9092          KM    URS 2009

9093          KK    DH39
9094          KM      Divert flow into H40
9095          KM        Natural divergence of flow due to a braided channel network.
9096          DT   DVH39
9097          DI       0       7      43     128     282     581    1321
9098          DQ       0       7      43     128     275     443     901
              *

9099          KK  RCPH39
9100          KM    URS 2009
9101          KM        Route remainder flow from CP H39 to CP H41
9102          RS       3    FLOW     -1
9103          RC   0.050   0.045   0.050    4989  0.0126
9104          KM       Typical Sheet Flow Route
9105          RX       0     500     700     750     800     900    1100    1600
9106          RY       6       4       2       0       0       2       4       6
              *

9107          KK     H41
9108          KM    URS 2009
9109          KM        Runoff from H41
9110          BA   0.300
9111          LG    0.35    0.35    4.00    0.46       0
9112          UI       0     249     641     228      36       0       0       0       0       0
              *
9113          KM    URS 2009

9114          KK   CPH41
9115          KM        Combine H39 with H41
9116          HC       2   0.716
              *

9117          KK  RCPH41
9118          KM    URS 2009
9119          KM        Route flow from CP H41 to CP H84
9120          RS       5    FLOW     -1
9121          RC   0.050   0.045   0.050    5387  0.0041
9122          KM       Typical Sheet Flow Farmfield
9123          RX       0     500     600     620     720     740     840    1340
9124          RY       5       3       1       0       0       1       3       5
              *

9125          KK   DRH39
9126          KM        Return diverted flow from CP H39
9127          DR   DVH39
              *
```



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

9128          KK   RDH39
```

```
9129          KM    URS 2009
9130          KM        Route flow from CP H39 to CP H40
9131          RS       4    FLOW      -1
9132          RC   0.050   0.045   0.050    7052  0.0061
9133          KM       Typical Sheet Flow Farmfield
9134          RX       0     500     600     620     720     740     840    1340
9135          RY       5       3       1       0       0       1       3       5
              *

9136          KK     H40
9137          KM    URS 2009
9138          KM        Runoff from H40
9139          BA   0.470
9140          LG    0.35    0.35    4.00    0.46       0
9141          UI       0     242     760     587     174      40       0       0       0       0
9142          UI       0       0       0       0       0       0       0       0       0       0
              *
9143          KM    URS 2009

9144          KK   CPH40
9145          KM       Combine DRH39 with H40
9146          HC       2   1.442
              *

9147          KK  RCPH40
9148          KM    URS 2009
9149          KM        Route flow from CP H40 to CP H84
9150          RS       1    FLOW      -1
9151          RC   0.050   0.045   0.050    2777  0.0151
9152          KM       Typical Sheet Flow Farmfield
9153          RX       0     500     600     620     720     740     840    1340
9154          RY       5       3       1       0       0       1       3       5
              *

9155          KK     H84
9156          KM    URS 2009
9157          KM        Runoff from H84
9158          BA   0.756
9159          LG    0.10    0.25    4.00    0.39       5
9160          UI       0    1166    1564     177       0       0       0       0       0       0
9161          UI       0       0       0       0       0       0       0       0       0       0
9162          UI       0       0       0       0       0       0       0       0       0       0
              *
9163          KM    URS 2009

9164          KK   CPH84
9165          KM       Combine H41, H40 with H84
9166          HC       3   2.914
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

9167          KK  RCPH84
9168          KM    URS 2009
9169          KM        Route flow from CP H84 to CP H85
9170          RS       3    FLOW      -1
9171          RC   0.050   0.045   0.050    5273  0.0071
9172          KM       Typical Sheet Flow Farmfield
9173          RX       0     500     600     620     720     740     840    1340
9174          RY       5       3       1       0       0       1       3       5
              *

9175          KK     H85
9176          KM    URS 2009
9177          KM        Runoff from H85
9178          BA   0.976
9179          LG    0.10    0.25    4.00    0.39       5
9180          UI       0    1428    1791     431      79      38       0       0       0       0
9181          UI       0       0       0       0       0       0       0       0       0       0
9182          UI       0       0       0       0       0       0       0       0       0       0
9183          UI       0       0       0       0       0       0       0       0       0       0
              *
9184          KM    URS 2009

9185          KK   CPH85
9186          KM       Combine H84 with H85
9187          HC       2   3.890
              *

9188          KK  RCPH85
9189          KM    URS 2009
9190          KM        Route flow from CP H85 to CP H86
9191          RS       4    FLOW      -1
9192          RC   0.050   0.045   0.050    6464  0.0045
9193          KM       Typical Sheet Flow Farmfield
9194          RX       0     500     600     620     720     740     840    1340
9195          RY       5       3       1       0       0       1       3       5
              *

9196          KK     H86
9197          KM    URS 2009
9198          KM        Runoff from H86
9199          BA   1.077
9200          LG    0.11    0.25    4.25    0.35       5
9201          UI       0    1184    2052     679     178      36      36       0       0       0
9202          UI       0       0       0       0       0       0       0       0       0       0
9203          UI       0       0       0       0       0       0       0       0       0       0
9204          UI       0       0       0       0       0       0       0       0       0       0
              *
9205          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE230

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
9206          KK   CPH86
9207          KM        Combine H85 with H86
9208          HC       2   4.967
              *

9209          KK  H86RIV
9210          KM        Combine B64RIV with H86
9211          HC       2 328.049
              *

9212          KK  RCPH86
9213          KM    URS 2009
9214          KM        Route flow from CP H86RIV to CP A41RIV (WATERMAN WASH)
9215          RS       2    FLOW     -1
9216          RC   0.050   0.035   0.050    4687  0.0033
9217          RX       0     535     856     935     999    1040    1050    2560
9218          RY  1059.0  1056.0  1048.7  1046.0  1046.0  1050.0  1056.0  1059.0
              *
              *

9219          KK     I03
9220          KM    URS 2009
9221          KM    Customized XKSAT Values
9222          KM        Runoff subbasin I03
9223          BA   0.957
9224          LG    0.35    0.35    3.95    0.47       0
9225          UI       0     754    2007     779     130       0       0       0       0       0
              *
9226          KM    URS 2009

9227          KK    DI03
9228          KM      Divert flow from CP I03 into I05
9229          KM        Natural divergence of flow due to a braided channel network.
9230          DT   DVI03
9231          DI       0       5     158     675    1632    3393    5638    8306   11362   14778
9232          DQ       0       5     140     450     924    1780    2851    4109    5539    7128
              *

9233          KK  RCPI03
9234          KM    URS 2009
9235          KM        Route remainder flow from CP I03 to CP I04
9236          RS       4    FLOW     -1
9237          RC   0.050   0.045   0.050    5669  0.0141
9238          RX       0     152     193     220     231     322     419     420
9239          RY  1362.7  1360.8  1360.9  1360.6  1360.5  1360.7  1361.7  1361.7
              *

9240          KK     I04
9241          KM    Customized XKSAT Values
9242          KM    URS 2009
9243          KM        Runoff subbasin I04
9244          BA   0.394
9245          LG    0.35    0.35    3.95    0.47       0
9246          UI       0     303     818     331      58       0       0       0       0       0
              *
```



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

9247          KM    URS 2009

9248          KK   CPI04
9249          KM        Combine I03 with I04
9250          HC       2   0.778
              *

9251          KK  RCPI04
9252          KM    URS 2009
9253          KM        Route flow from CP I04 to CP I06
9254          RS       4    FLOW     -1
9255          RC   0.050   0.045   0.050    4365  0.0128
9256          RX       0      70     130     190     240     320     440     550
9257          RY  1362.7  1360.8  1360.9  1360.6  1360.5  1360.7  1361.7  1361.7
              *

9258          KK     I06
9259          KM    URS 2009
9260          KM        Runoff subbasin I06
9261          BA   0.499
9262          LG    0.35    0.35    4.00    0.46       0
9263          UI       0     482    1107     297      43       0       0       0       0       0
9264          UI       0       0       0       0       0       0       0       0       0       0
              *
9265          KM    URS 2009

9266          KK   CPI06
9267          KM        Combine I04 with I06
9268          HC       2   1.277
              *

9269          KK  RCPI06
9270          KM    URS 2009
9271          KM        Route flow from CP I06 to CP I08
9272          RS       5    FLOW     -1
9273          RC   0.050   0.045   0.050    6104  0.0095
9274          RX     294     885     945     985    1104    1184    1343    1850
9275          RY  1177.6  1177.2  1177.1  1177.0  1177.1  1177.3  1177.6  1177.7
              *

9276          KK     I08
9277          KM    URS 2009
9278          KM        Runoff subbasin I08
9279          BA   0.791
9280          LG    0.35    0.35    4.00    0.46       0
9281          UI       0     452    1389     924     233      48       0       0       0       0
```

```
                    *
9282                KM    URS 2009

9283                KK   CPI08
9284                KM        Combine I06 with I08
9285                HC       2   2.068
                    *
1                                                HEC-1 INPUT                                                    PAGE232

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


9286                KK  RCPI08
9287                KM    URS 2009
9288                KM        Route flow from CP I08 to CP I10
9289                RS       3    FLOW      -1
9290                RC   0.050   0.045   0.050    5225  0.0084
9291                KM       Typical Sheet Flow Route
9292                RX       0     500     700     750     800     900    1100    1600
9293                RY       6       4       2       0       0       2       4       6
                    *

9294                KK     I10
9295                KM    URS 2009
9296                KM        Runoff subbasin I10
9297                BA   0.497
9298                LG    0.35    0.35    4.00    0.46       0
9299                UI       0     313     931     532     115      30       0       0       0       0
9300                UI       0       0       0       0       0       0       0       0       0       0
                    *
9301                KM    URS 2009

9302                KK   CPI10
9303                KM        Combine I08 with I10
9304                HC       2   2.565
                    *

9305                KK  RCPI10
9306                KM    URS 2009
9307                KM        Route flow from CP I10 to CP I12
9308                RS       3    FLOW      -1
9309                RC   0.050   0.045   0.050    5264  0.0072
9310                KM       Typical Sheet Flow Farmfield
9311                RX       0     500     600     620     720     740     840    1340
9312                RY       5       3       1       0       0       1       3       5
                    *

9313                KK   DRI03
9314                KM      Return Diverted flow from CP I03 in basin I05
9315                DR   DVI03
                    *

9316                KK   RDI03
9317                KM    URS 2009
9318                KM        Route diverted flow from CP I03 CP I05
9319                RS       2    FLOW      -1
9320                RC   0.050   0.045   0.050    4448  0.0180
9321                KM       Typical Sheet Flow Route
9322                RX       0     500     700     750     800     900    1100    1600
9323                RY       6       4       2       0       0       2       4       6
                    *
1                                                HEC-1 INPUT                                                    PAGE233

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


9324                KK     I05
9325                KM    URS 2009
9326                KM    Customized XKSAT Values
9327                KM        Runoff subbasin I05
9328                BA   0.217
9329                LG    0.35    0.35    3.95    0.47       0
9330                UI       0     295     476      61       0       0       0       0       0       0
9331                UI       0       0       0       0       0       0       0       0       0       0
                    *
9332                KM    URS 2009

9333                KK   CPI05
9334                KM        Combine I03 with I05
9335                HC       2   0.793
                    *
9336                KM    URS 2009

9337                KK  RCPI05
9338                KM        Route flow from CP I05 to CP I07
9339                RS       3    FLOW      -1
9340                RC   0.050   0.045   0.050    3990  0.0135
9341                RX     167     750     810     895     941     999    1064    1585
9342                RY  1256.9  1255.1  1255.2  1255.1  1255.1  1255.5  1255.7  1256.8
                    *

9343                KK     I07
9344                KM    URS 2009
9345                KM        Runoff subbasin I07
9346                BA   0.194
9347                LG    0.35    0.35    4.00    0.46       0
9348                UI       0     245     434      63       0       0       0       0       0       0
                    *
9349                KM    URS 2009

9350                KK   CPI07
9351                KM        Combine I05 with I07
9352                HC       2   0.987
                    *

9353                KK  RCPI07
```

```
9354          KM    URS 2009
9355          KM        Route flow from CP I07 to CP I09
9356          RS       3    FLOW     -1
9357          RC   0.050   0.045   0.050    5385  0.0108
9358          KM       Typical Sheet Flow Route
9359          RX       0     500     700     750     800     900    1100    1600
9360          RY       6       4       2       0       0       2       4       6
              *
1                                          HEC-1 INPUT                                                          PAGE234

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

9361          KK     I09
9362          KM    URS 2009
9363          KM        Runoff subbasin I09
9364          BA   0.315
9365          LG    0.35    0.35    4.00    0.46       0
9366          UI       0     248     661     256      43       0       0       0       0       0
              *
9367          KM    URS 2009

9368          KK   CPI09
9369          KM        Combine I07 with I09
9370          HC       2   1.302
              *

9371          KK  RCPI09
9372          KM    URS 2009
9373          KM        Route flow from CP I09 to CP I11
9374          RS       3    FLOW     -1
9375          RC   0.050   0.045   0.050    4468  0.0087
9376          KM       Typical Sheet Flow Route
9377          RX       0     500     700     750     800     900    1100    1600
9378          RY       6       4       2       0       0       2       4       6
              *

9379          KK     I11
9380          KM    Customized XKSAT Values
9381          KM    URS 2009
9382          KM        Runoff subbasin I11
9383          BA   0.289
9384          LG    0.35    0.35    3.95    0.47       0
9385          UI       0     257     629     198      30       0       0       0       0       0
              *
9386          KM    URS 2009

9387          KK   CPI11
9388          KM        Combine I09 with I11
9389          HC       2   1.591
              *

9390          KK  RCPI11
9391          KM    URS 2009
9392          KM        Route flow from CP I11 to CP I12
9393          RS       4    FLOW     -1
9394          RC   0.050   0.045   0.050    5395  0.0082
9395          KM       Typical Sheet Flow Farmfield
9396          RX       0     500     600     620     720     740     840    1340
9397          RY       5       3       1       0       0       1       3       5
              *
1                                          HEC-1 INPUT                                                          PAGE235

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

9398          KK     I12
9399          KM    Customized XKSAT Values
9400          KM    URS 2009
9401          KM        Runoff subbasin I12
9402          BA   0.509
9403          LG    0.10    0.25    4.00    0.39       5
9404          UI       0     754    1074     126       0       0       0       0       0       0
9405          UI       0       0       0       0       0       0       0       0       0       0
              *
9406          KM    URS 2009

9407          KK   CPI12
9408          KM        Combine I10, I11 with I12
9409          HC       3   4.665
              *

9410          KK  RCPI12
9411          KM    URS 2009
9412          KM        Route flow from CP I12 to CP I13
9413          RS       3    FLOW     -1
9414          RC   0.050   0.045   0.050    5221  0.0054
9415          KM       Typical Sheet Flow Farmfield
9416          RX       0     500     600     620     720     740     840    1340
9417          RY       5       3       1       0       0       1       3       5
              *

9418          KK     I13
9419          KM    URS 2009
9420          KM    Customized XKSAT Values
9421          KM        Runoff subbasin I13
9422          BA   0.519
9423          LG    0.10    0.25    4.25    0.35       5
9424          UI       0     705    1138     145       0       0       0       0       0       0
9425          UI       0       0       0       0       0       0       0       0       0       0
              *
9426          KM    URS 2009

9427          KK   CPI13
9428          KM        Combine I12 with I13
9429          HC       2   5.184
```

```
                 *

9430             KK  RCPI13
9431             KM    URS 2009
9432             KM        Route flow from CP I13 to CP I14
9433             RS       1    FLOW      -1
9434             RC   0.050   0.045   0.050    2548  0.0078
9435             KM       Typical Sheet Flow Farmfield
9436             RX       0     500     600     620     720     740     840    1340
9437             RY       5       3       1       0       0       1       3       5
                 *
1                                          HEC-1 INPUT                                                          PAGE236

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

9438             KK     I14
9439             KM    Customized XKSAT Values
9440             KM    URS 2009
9441             KM        Runoff subbasin I14
9442             BA   0.240
9443             LG    0.16    0.28    5.20    0.21       4
9444             UI       0     769     160       0       0       0       0       0       0       0
9445             UI       0       0       0       0       0       0       0       0       0       0
                 *
9446             KM    URS 2009

9447             KK   CPI14
9448             KM        Combine I13 with I14
9449             HC       2   5.424
                 *
9450             KM    URS 2009

9451             KK     A12
9452             KM        Runoff from A12
9453             BA   1.064
9454             LG    0.35    0.34    4.50    0.35       0
9455             UI       0     185     585    1030    1119     667     298     140      43      35
9456             UI       0       0       0       0       0       0       0       0       0       0
9457             UI       0       0       0       0       0       0       0       0       0       0
                 *
9458             KM    URS 2009

9459             KK  RCPA12
9460             KM        Route flow from CP A12 to CP A41
9461             RS      17    FLOW      -1
9462             RC   0.050   0.045   0.050   13965  0.0040
9463             KM       Typical Sheet Flow Small Wash
9464             RX       0     600     700     706     711     717     817    1417
9465             RY       6       4       3       0       0       3       4       6
                 *
9466             KM    URS 2009

9467             KK     A41
9468             KM        Runoff from A41
9469             BA   0.915
9470             LG    0.35    0.35    4.55    0.34       9
9471             UI       0      93     337     560     685     600     459     281     192     113
9472             UI      77      48      32      10      10      10      10      10      10       0
                 *

9473             KK   CPA41
9474             KM        Combine A12 with A41
9475             HC       2   1.971
                 *
1                                          HEC-1 INPUT                                                          PAGE237

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

9476             KK  A41RIV
9477             KM        Combine H86RIV, I14 with A41
9478             KM        Rainbow Boulevard crossing at A41RIV
9479             HC       3 335.511
                 *

9480             KK  RCPA41
9481             KM      Route flow in Waterman Wash from CP A41RIV to CP A42RIV (WATERMAN WASH)
9482             KM    URS 2009
9483             RS       3    FLOW      -1
9484             RC   0.050   0.035   0.050    2547  0.0032
9485             RX     219    5259    5316    5412    5430    5450    5475    8000
9486             RY  1031.5  1028.0  1026.9  1028.5  1028.5  1028.5  1028.5  1031.5
                 *
9487             KM    URS 2009

9488             KK    I15B
9489             KM    Customized XKSAT Values
9490             KM        Runoff subbasin I15B
9491             BA   0.328
9492             LG    0.35    0.35    3.95    0.47      20
9493             UI       0     367     740     142       0       0       0       0       0       0
9494             UI       0       0       0       0       0       0       0       0       0       0
                 *
9495             KM    URS 2009

9496             KK  RCI15B
9497             KM        Route flow from CP I15B to CP I15A
9498             RS       2    FLOW      -1
9499             RC   0.050   0.045   0.050    4867  0.0168
9500             KM       Typical Sheet Flow Route
9501             RX       0    1000    1200    1250    1300    1400    1600    2600
9502             RY       6       4       2       0       0       2       4       6
                 *
9503             KM    URS 2009
```

```
9504          KK    I15A
9505          KM        Runoff subbasin I15A
9506          BA   0.402
9507          LG    0.35    0.35    4.15    0.43       0
9508          UI       0     367     881     263      40       0       0       0       0       0
9509          UI       0       0       0       0       0       0       0       0       0       0
              *
9510          KM    URS 2009

9511          KK  CPI15A
9512          KM        Combine I15A AND I15B
9513          HC       2
              *
9514          KM    URS 2009
1                                        HEC-1 INPUT                                                PAGE238

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


9515          KK  RCI15A
9516          KM        Route flow from CP I15A to CP I18
9517          RS       2    FLOW      -1
9518          RC   0.050   0.045   0.050    5330  0.0114
9519          RX      82    2724    2838    2839    2849    3021    3122    4623
9520          RY  1227.0  1225.8  1225.2  1225.2  1225.3  1225.8  1226.0  1227.0
              *
9521          KM    URS 2009

9522          KK     I16
9523          KM    Customized XKSAT Values
9524          KM        Runoff subbasin I16
9525          BA   0.490
9526          LG    0.35    0.35    3.95    0.47       7
9527          UI       0     586    1103     181       0       0       0       0       0       0
9528          UI       0       0       0       0       0       0       0       0       0       0
              *
9529          KM    URS 2009

9530          KK  RCPI16
9531          KM        Route flow from CP I16 to CP I18
9532          RS       3    FLOW      -1
9533          RC   0.050   0.045   0.050    5420  0.0113
9534          KM       Typical Sheet Flow Route
9535          RX       0     500     700     750     800     900    1100    1600
9536          RY       6       4       2       0       0       2       4       6
              *
9537          KM    URS 2009

9538          KK     I18
9539          KM    Customized XKSAT Values
9540          KM        Runoff subbasin I18
9541          BA   0.664
9542          LG    0.35    0.35    3.95    0.47       0
9543          UI       0     523    1392     540      90       0       0       0       0       0
9544          UI       0       0       0       0       0       0       0       0       0       0
              *
9545          KM    URS 2009

9546          KK    I17C
9547          KM        Runoff subbasin I17
9548          BA   0.163
9549          LG    0.35    0.35    4.10    0.44      53
9550          UI       0     309     295      27       0       0       0       0       0       0
9551          UI       0       0       0       0       0       0       0       0       0       0
              *
9552          KM    URS 2009

9553          KK  RCI17C
9554          KM        Route flow from CP I17C to CP I17A
9555          RS       2    FLOW      -1
9556          RC   0.050   0.045   0.050    2602  0.0181
9557          KM       Typical Sheet Flow Route
9558          RX       0     500     700     750     800     900    1100    1600
1                                        HEC-1 INPUT                                                PAGE239

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

9559          RY       6       4       2       0       0       2       4       6
              *
9560          KM    URS 2009

9561          KK    I17B
9562          KM        Runoff subbasin I17
9563          BA   0.088
9564          LG    0.35    0.35    4.70    0.30       4
9565          UI       0     233     103       0       0       0       0       0       0       0
              *
9566          KM    URS 2009

9567          KK  RCI17B
9568          KM        Route flow from CP I17B to CP I17A
9569          RS       2    FLOW      -1
9570          RC   0.050   0.045   0.050     470  0.0085
9571          KM       Typical Sheet Flow Route
9572          RX       0     500     700     750     800     900    1100    1600
9573          RY       6       4       2       0       0       2       4       6
              *
9574          KM    URS 2009

9575          KK    I17A
9576          KM        Runoff subbasin I17A
9577          BA   0.108
9578          LG    0.35    0.35    4.50    0.35       0
9579          UI       0     290     123       0       0       0       0       0       0       0
9580          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
9581          KK  CPI17A
9582          KM        Combine I17A, I17B, I17C
9583          HC       3
              *
9584          KM    URS 2009

9585          KK  RCI17A
9586          KM        Route flow from CP I17 to CP I18
9587          RS       2    FLOW      -1
9588          RC   0.050   0.045   0.050    5186  0.0118
9589          KM       Typical Sheet Flow Route
9590          RX       0     500     700     750     800     900    1100    1600
9591          RY       6       4       2       0       0       2       4       6
              *
9592          KM    URS 2009

9593          KK   CPI18
9594          KM        Combine I15A, I16, I17A with I18
9595          HC       4
              *
9596          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE240

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

9597          KK  RCPI18
9598          KM        Route flow from CP I18 to CP I19
9599          RS       2    FLOW      -1
9600          RC   0.050   0.045   0.050    4997  0.0094
9601          KM       Typical Sheet Flow Route
9602          RX       0     500     700     750     800     900    1100    1600
9603          RY       6       4       2       0       0       2       4       6
              *
9604          KM    URS 2009

9605          KK     I19
9606          KM        Runoff subbasin I19
9607          BA   0.354
9608          LG    0.35    0.35    4.00    0.46       0
9609          UI       0     262     724     311      57       0       0       0       0       0
9610          UI       0       0       0       0       0       0       0       0       0       0
              *

9611          KK   CPI19
9612          KM        Combine I18 with I19
9613          HC       2   2.530
              *
9614          KM    URS 2009

9615          KK  RCPI19
9616          KM        Route flow from CP I19 to CP I20
9617          RS       5    FLOW      -1
9618          RC   0.050   0.045   0.050    6802  0.0084
9619          RX       0     111     112     178     348     395     426     625
9620          RY  1131.2  1130.8  1130.9  1130.6  1130.0  1130.0  1130.0  1131.4
              *
9621          KM    URS 2009

9622          KK     I20
9623          KM        Runoff subbasin I20
9624          BA   0.619
9625          LG    0.35    0.35    4.00    0.46       0
9626          UI       0     318    1001     773     229      53       0       0       0       0
9627          UI       0       0       0       0       0       0       0       0       0       0
              *

9628          KK   CPI20
9629          KM        Combine I19 with I20
9630          HC       2   3.150
              *
9631          KM    URS 2009

9632          KK  RCPI20
9633          KM        Route flow from CP I20 to CP I21
9634          RS       3    FLOW      -1
9635          RC   0.050   0.045   0.050    5254  0.0080
9636          KM       Typical Sheet Flow Farmfield
9637          RX       0     500     600     620     720     740     840    1340
9638          RY       5       3       1       0       0       1       3       5
              *
1                                        HEC-1 INPUT                                                    PAGE241

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

9639          KM    URS 2009

9640          KK     I21
9641          KM    Customized XKSAT Values
9642          KM        Runoff subbasin I21
9643          BA   0.469
9644          LG    0.16    0.28    4.00    0.39       4
9645          UI       0     551    1057     180       0       0       0       0       0       0
9646          UI       0       0       0       0       0       0       0       0       0       0
9647          UI       0       0       0       0       0       0       0       0       0       0
              *

9648          KK   CPI21
9649          KM        Combine I20 with I21
9650          HC       2   3.619
              *
9651          KM    URS 2009

9652          KK  RCPI21
9653          KM        Route flow from CP I21 to CP I22
```

```
9654          RS       4    FLOW      -1
9655          RC   0.050   0.045   0.050    3859  0.0057
9656          RX      70    1700    1750    1800    1950    2000    2061    3809
9657          RY  1035.5  1034.0  1034.0  1034.0  1034.0  1034.0  1034.0  1035.6
              *
9658          KM    URS 2009

9659          KK     I22
9660          KM    Customized XKSAT Values
9661          KM        Runoff subbasin I22
9662          BA   0.385
9663          LG    0.10    0.25    4.40    0.32       5
9664          UI       0     910     508      56       0       0       0       0       0       0
9665          UI       0       0       0       0       0       0       0       0       0       0
9666          UI       0       0       0       0       0       0       0       0       0       0
              *

9667          KK   CPI22
9668          KM        Combine I21 with I22
9669          HC       2   4.004
              *
9670          KM    URS 2009

9671          KK     A40
9672          KM        Runoff from A40
9673          BA   0.498
9674          LG    0.10    0.25    4.90    0.24       5
9675          UI       0     424    1072     363      56       0       0       0       0       0
              *
9676          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE242

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


9677          KK  RCPA40
9678          KM        Route flow from CP A40 to CP A42
9679          RS       9    FLOW      -1
9680          RC   0.050   0.045   0.050    9074  0.0048
9681          KM       Typical Sheet Flow Farmfield
9682          RX       0     500     600     620     720     740     840    1340
9683          RY       5       3       1       0       0       1       3       5
              *
9684          KM    URS 2009

9685          KK     A42
9686          KM        Runoff from A42
9687          BA   0.852
9688          LG    0.27    0.28    4.70    0.31       2
9689          UI       0     111     412     693     685     554     336     204     115      72
9690          UI      50      13      11      11      11      11      11       0       0       0
              *

9691          KK   CPA42
9692          KM        Combine A40 with A42
9693          HC       2   1.350
              *

9694          KK  A42RIV
9695          KM        Combine A41RIV, I22 with A42
9696          HC       3 340.865
              *

9697          KK  RCPA42
9698          KM        Route flow in Waterman Wash from CP A42RIV to CP A44RIV (WATERMAN WASH)
9699          KM    URS 2009
9700          RS       2    FLOW      -1
9701          RC   0.050   0.035   0.050    2252  0.0024
9702          RX       0    5259    5316    6412    6430    6450    6475    8000
9703          RY  1030.5  1028.0  1026.9  1028.5  1028.5  1028.5  1028.5  1031.5
              *
9704          KM    URS 2009

9705          KK     A13
9706          KM        Runoff from A13
9707          BA   0.580
9708          LG    0.35    0.38    5.80    0.19       2
9709          UI       0     144     432     773     519     238      92      24      22       0
9710          UI       0       0       0       0       0       0       0       0       0       0
9711          UI       0       0       0       0       0       0       0       0       0       0
              *
9712          KM    URS 2009

9713          KK  RCPA13
9714          KM        Route flow from CP A13 to CP A39
9715          RS       6    FLOW      -1
9716          RC   0.050   0.045   0.050    6016  0.0053
9717          KM       Typical Sheet Flow Farmfield
9718          RX       0     500     600     620     720     740     840    1340
1                                          HEC-1 INPUT                                                    PAGE243

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

9719          RY       5       3       1       0       0       1       3       5
              *
9720          KM    URS 2009

9721          KK     A39
9722          KM        Runoff from A39
9723          BA   0.495
9724          LG    0.10    0.25    4.80    0.25       5
9725          UI       0     490     932     354     101      18      16       0       0       0
9726          UI       0       0       0       0       0       0       0       0       0       0
9727          UI       0       0       0       0       0       0       0       0       0       0
9728          UI       0       0       0       0       0       0       0       0       0       0
              *
```

```
9729          KK   CPA39
9730          KM        Combine A13 with A39
9731          HC       2   1.075
              *
9732          KM    URS 2009

9733          KK  RCPA39
9734          KM        Route flow from CP A39 to CP A43
9735          RS       4    FLOW     -1
9736          RC   0.050   0.045   0.050    5272  0.0061
9737          KM       Typical Sheet Flow Farmfield
9738          RX       0     500     600     620     720     740     840    1340
9739          RY       5       3       1       0       0       1       3       5
              *
9740          KM    URS 2009

9741          KK     A43
9742          KM        Runoff from A43
9743          BA   0.505
9744          LG    0.10    0.25    4.80    0.25       5
9745          UI       0     507     954     353     101      17      16       0       0       0
              *

9746          KK   CPA43
9747          KM        Combine A39 with A43
9748          HC       2   1.580
              *
9749          KM    URS 2009

9750          KK  RCPA43
9751          KM        Route flow from CP A43 to CP A44
9752          RS       4    FLOW     -1
9753          RC   0.050   0.045   0.050    5232  0.0061
9754          KM       Typical Sheet Flow Farmfield
9755          RX       0     500     600     620     720     740     840    1340
9756          RY       5       3       1       0       0       1       3       5
              *
9757          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE244

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

9758          KK     A44
9759          KM        Runoff from A44
9760          BA   0.366
9761          LG    0.11    0.26    4.70    0.26       5
9762          UI       0     512     680     173      33      14       0       0       0       0
              *

9763          KK   CPA44
9764          KM        Combine A43 with A44
9765          HC       2   1.945
              *

9766          KK  A44RIV
9767          KM        Combine A42RIV with A44
9768          KM        Queen Creek Road crossing A44RIV
9769          HC       2 342.810
              *

9770          KK  RCPA44
9771          KM        Route flow in Waterman Wash from CP A44RIV to CP I36RIV (WATERMAN WASH)
9772          KM      URS 2009
9773          RS       2    FLOW     -1
9774          RC   0.050   0.035   0.050    3511  0.0033
9775          RX       0    1277    1383    1391    1412    1433    1452    2209
9776          RY  1017.0  1009.4  1007.5  1008.0  1010.0  1011.1  1012.0  1016.5
              *
9777          KM    URS 2009

9778          KK     I24
9779          KM        Runoff subbasin I24
9780          BA   0.177
9781          LG    0.35    0.35    4.65    0.32      26
9782          UI       0     198     399      77       0       0       0       0       0       0
9783          UI       0       0       0       0       0       0       0       0       0       0
              *
9784          KM    URS 2009

9785          KK  RCPI24
9786          KM        Route flow from CP I24 to CP I26A
9787          RS       4    FLOW     -1
9788          RC   0.050   0.045   0.050    5594  0.0179
9789          KM       Typical Sheet Flow Route
9790          RX       0     500     700     750     800     900    1100    1600
9791          RY       6       4       2       0       0       2       4       6
              *
              *
9792          KM    URS 2009

9793          KK    I26B
9794          KM    Runoff subbasin I6B
9795          BA   0.061
9796          LG    0.35    0.35    4.70    0.30       5
9797          UI       0     142      89       0       0       0       0       0       0       0
9798          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                        HEC-1 INPUT                                                    PAGE245

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

9799          KM    URS 2009

9800          KK  RCI26B
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```
9801          KM        Route flow from CP I26B to CP I26A
9802          RS       6    FLOW      -1
9803          RC   0.050   0.045   0.050    7173  0.0100
9804          KM       Typical Sheet Flow Route
9805          RX       0     500     700     750     800     900    1100    1600
9806          RY       6       4       2       0       0       2       4       6
              *
9807          KM    URS 2009

9808          KK    I26A   BASIN
9809          BA   0.576
9810          LG    0.35    0.35    4.20    0.42       1
9811          UI       0     332    1019     667     167      33       0       0       0       0
9812          UI       0       0       0       0       0       0       0       0       0       0
              *
9813          KM    URS 2009

9814          KK  CPI26A
9815          KM        Combine I24, I26B, with I26A
9816          HC       3
              *
9817          KM    URS 2009

9818          KK  RCI26A
9819          KM        Route flow from CP I26A to CP I28
9820          RS       5    FLOW      -1
9821          RC   0.050   0.045   0.050    5176  0.0093
9822          KM       Typical Sheet Flow Route
9823          RX       0     500     700     750     800     900    1100    1600
9824          RY       6       4       2       0       0       2       4       6
              *
9825          KM    URS 2009

9826          KK     I28
9827          KM        Runoff subbasin I28
9828          BA   0.442
9829          LG    0.35    0.35    4.00    0.46       0
9830          UI       0     503     997     184       0       0       0       0       0       0
9831          UI       0       0       0       0       0       0       0       0       0       0
              *

9832          KK   CPI28
9833          KM        Combine I26 with I28
9834          HC       2   1.256
              *
9835          KM    URS 2009
```



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

9836          KK  RCPI28
9837          KM        Route flow from CP I28 to CP I30
9838          RS       3    FLOW      -1
9839          RC   0.050   0.045   0.050    4592  0.0091
9840          KM       Typical Sheet Flow Route
9841          RX       0     500     700     750     800     900    1100    1600
9842          RY       6       4       2       0       0       2       4       6
              *
9843          KM    URS 2009

9844          KK     I30
9845          KM        Runoff subbasin I30
9846          BA   0.423
9847          LG    0.35    0.35    4.00    0.46       0
9848          UI       0     375     921     289      44       0       0       0       0       0
9849          UI       0       0       0       0       0       0       0       0       0       0
              *

9850          KK   CPI30
9851          KM        Combine I28 with I30
9852          HC       2   1.678
              *
9853          KM    URS 2009

9854          KK  RCPI30
9855          KM        Route flow from CP I30 to CP I32
9856          RS       3    FLOW      -1
9857          RC   0.050   0.045   0.050    5275  0.0076
9858          KM       Typical Sheet Flow Farmfield
9859          RX       0     500     600     620     720     740     840    1340
9860          RY       5       3       1       0       0       1       3       5
              *
9861          KM    URS 2009

9862          KK     I32
9863          KM    Customized XKSAT Values
9864          KM        Runoff subbasin I32
9865          BA   0.506
9866          LG    0.10    0.25    4.00    0.39       5
9867          UI       0     780    1047     118       0       0       0       0       0       0
9868          UI       0       0       0       0       0       0       0       0       0       0
9869          UI       0       0       0       0       0       0       0       0       0       0
              *

9870          KK   CPI32
9871          KM        Combine I30 with I32
9872          HC       2   2.184
              *
9873          KM    URS 2009
```



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

9874          KK  RCPI32
```

```
9875          KM        Route flow from CP I32 to CP I34
9876          RS      4    FLOW      -1
9877          RC   0.050   0.045   0.050    5292  0.0055
9878          KM       Typical Sheet Flow Farmfield
9879          RX       0     500     600     620     720     740     840    1340
9880          RY       5       3       1       0       0       1       3       5
              *
9881          KM    URS 2009

9882          KK     I34
9883          KM        Runoff subbasin I34
9884          BA   0.510
9885          LG    0.30    0.25    4.40    0.44       3
9886          UI       0      70     233     369     550     360     218      90      48      15
9887          UI      15       0       0       0       0       0       0       0       0       0
9888          UI       0       0       0       0       0       0       0       0       0       0
              *

9889          KK   CPI34
9890          KM       Combine I32 with I34
9891          HC       2   2.694
              *
9892          KM    URS 2009

9893          KK  RCPI34
9894          KM        Route flow from CP I34 to CP I36
9895          RS       2    FLOW      -1
9896          RC   0.050   0.045   0.050    3118  0.0064
9897          KM       Typical Sheet Flow Farmfield
9898          RX       0     500     600     620     720     740     840    1340
9899          RY       5       3       1       0       0       1       3       5
              *
9900          KM    URS 2009

9901          KK     I36
9902          KM        Runoff subbasin I36
9903          BA   0.194
9904          LG    0.23    0.30    4.45    0.33       2
9905          UI       0     421     308       0       0       0       0       0       0       0
9906          UI       0       0       0       0       0       0       0       0       0       0
              *

9907          KK   CPI36
9908          KM       Combine I34 with I36
9909          HC       2   2.888
              *

9910          KK  I36RIV
9911          KM       Combine A44RIV with flow from I36
9912          HC       2 345.689
              *
```



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

9913          KK  RCPI36
9914          KM       Route flow from CP I36RIV to CP I37RIV (WATERMAN WASH)
9915          KM    URS 2009
9916          RS       1    FLOW      -1
9917          RC   0.050   0.035   0.050    2267  0.0030
9918          RX       0    1277    1383    1391    1412    1433    1452    2209
9919          RY  1017.0  1009.4  1007.5  1008.0  1010.0  1011.1  1012.0  1016.5
              *
9920          KM    URS 2009

9921          KK     A01
9922          KM        Runoff from A01
9923          KM   Customized XKSAT Values
9924          BA   9.619
9925          LG    0.35    0.35    3.23    0.77       0
9926          UI       0     699    2628    4035    5772    8270    5898    4187    2700    1235
9927          UI     829     386     215     215       0       0       0       0       0       0
              *

9928          KK   DA01A
9929          KM     Divert flow from A01 into A03
9930          KM        Natural divergence of flow due to a braided channel network.
9931          DT  DVA01A
9932          DI       0      47     155     315     528     935    1662    2704    4570    6736
9933          DQ       0      24      77     158     264     466     844    1353    2247    3303
              *

9934          KK   DA01B
9935          KM     Divert flow from A01 into A10
9936          KM        Natural divergence of flow due to a braided channel network.
9937          DT  DVA01B
9938          DI       0      24      83     161     521    1492    2650    4072    5732    7611
9939          DQ       0      12      42      78     241     684    1204    1842    2586    3426
              *
9940          KM    URS 2009

9941          KK  RCPA01
9942          KM        Route remainder flow from CP A01 to CP A11
9943          RS      10    FLOW      -1
9944          RC   0.050   0.045   0.050   15319  0.0077
9945          RX    38.0    51.0   180.0   208.0   363.0   367.0   431.0   473.0
9946          RY  1219.9  1219.6  1217.5  1218.0  1218.0  1218.2  1220.0  1221.0
              *
9947          KM    URS 2009

9948          KK     A11
9949          KM        Runoff from A11
9950          KM        Customized XKSAT Values
9951          BA   1.804
9952          LG    0.35    0.35    3.25    0.76       0
```

```
 9953          UI       0     207     725    1109    1822    1356     892     435     224     102
 9954          UI      49      49       0       0       0       0       0       0       0       0
 9955          UI       0       0       0       0       0       0       0       0       0       0
               *
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 9956          KM    URS 2009

 9957          KK   CPA11
 9958          KM        Combine A01 with A11
 9959          HC       2  4.497
               *

 9960          KK    DA11
 9961          KM      Divert flow from A11 into A15
 9962          KM        Natural divergence of flow due to a braided channel network.
 9963          DT   DVA11
 9964          DI       0      14      62     159     545    1557    2782    4286    6039
 9965          DQ       0       7      31      79     272     779    1391    2143    3020
               *
 9966          KM    URS 2009

 9967          KK  RCPA11
 9968          KM        Route remainder flow from CP A11 to CP A14
 9969          RS       5    FLOW      -1
 9970          RC   0.050   0.045   0.050    6553  0.0082
 9971          RX     0.0   103.0   340.0   351.0   423.0   475.0   557.0   618.0
 9972          RY  1075.2  1074.0  1074.0  1074.1  1074.0  1074.0  1074.8  1075.5
               *
 9973          KM    URS 2009

 9974          KK     A14
 9975          KM        Runoff from A14
 9976          BA   0.856
 9977          LG    0.34    0.34    4.70    0.31       2
 9978          UI       0     166     513     944     856     498     193      85      29      29
 9979          UI       0       0       0       0       0       0       0       0       0       0
 9980          UI       0       0       0       0       0       0       0       0       0       0
               *
 9981          KM    URS 2009

 9982          KK   CPA14
 9983          KM        Combine A11 with A14
 9984          HC       2   3.104
               *
 9985          KM    URS 2009

 9986          KK  RCPA14
 9987          KM        Route flow from CP A14 to CP A37
 9988          RS       8    FLOW      -1
 9989          RC   0.050   0.045   0.050    6553  0.0082
 9990          RX       0     103     340     351     423     475     557     618
 9991          RY  1075.2  1074.0  1074.0  1074.1  1074.0  1074.0  1074.8  1075.5
               *
 9992          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE250

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

 9993          KK     A38
 9994          KM        Runoff from A38
 9995          BA   0.482
 9996          LG    0.10    0.25    4.55    0.29       5
 9997          UI       0     507     918     317      88      16      16       0       0       0
 9998          UI       0       0       0       0       0       0       0       0       0       0
 9999          UI       0       0       0       0       0       0       0       0       0       0
               *
10000          KM    URS 2009

10001          KK  RCPA38
10002          KM        Route flow from CP A38 to CP A37
10003          RS       6    FLOW      -1
10004          RC   0.050   0.045   0.050    9320  0.0069
10005          RX      80     100     104     193     200     220     222     222
10006          RY  1071.1  1068.8  1068.8  1069.2  1069.2  1070.6  1070.6  1070.6
               *
10007          KM    URS 2009

10008          KK     A37
10009          KM        Runoff from A37
10010          BA   1.346
10011          LG    0.34    0.34    4.90    0.28       1
10012          UI       0     201     661    1089    1457     912     501     208      95      41
10013          UI      41       0       0       0       0       0       0       0       0       0
               *
10014          KM    URS 2009

10015          KK   CPA37
10016          KM        Combine A14, A38 with A37
10017          HC       3   4.932
               *
10018          KM    URS 2009

10019          KK  RCPA37
10020          KM        Route flow from CP A37 to CP A45
10021          RS       5    FLOW      -1
10022          RC   0.050   0.045   0.050    7098  0.0048
10023          KM       Typical Sheet Flow Farmfield
10024          RX       0     500     600     620     720     740     840    1340
10025          RY       5       3       1       0       0       1       3       5
               *
10026          KM    URS 2009
```

```
10027          KK     A45
10028          KM        Runoff from A45
10029          BA   0.533
10030          LG    0.20    0.29    4.50    0.31       3
10031          UI       0     274     862     666     197      45       0       0       0       0
               *
10032          KM    URS 2009
```



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

10033          KK   CPA45
10034          KM        Combine A37 with A45
10035          HC       2   5.465
               *
10036          KM    URS 2009

10037          KK     I23
10038          KM        Runoff subbasin I23
10039          BA   0.423
10040          LG    0.34    0.34    4.20    0.44      56
10041          UI       0     485     726     268     100      36      21       0       0       0
               *
10042          KM    URS 2009

10043          KK  RCPI23
10044          KM        Route flow from CP I23 to CP I25
10045          RS       2    FLOW      -1
10046          RC   0.050   0.045   0.050    3837  0.0182
10047          RX      56      87     286     357     380     421     545     550
10048          RY  1278.0  1278.0  1276.5  1276.3  1277.2  1277.7  1278.0  1278.0
               *
10049          KM    URS 2009

10050          KK     I25
10051          KM        Runoff subbasin I25
10052          BA   0.309
10053          LG    0.35    0.35    4.55    0.34       0
10054          UI       0     448     659      79       0       0       0       0       0       0
10055          UI       0       0       0       0       0       0       0       0       0       0
               *

10056          KK   CPI25
10057          KM        Combine I23 with I25
10058          HC       2   0.732
               *
10059          KM    URS 2009

10060          KK  RCPI25
10061          KM        Route flow from CP I25 to CP I27
10062          RS       3    FLOW      -1
10063          RC   0.050   0.045   0.050    5163  0.0120
10064          KM       Typical Sheet Flow Route
10065          RX       0     500     700     750     800     900    1100    1600
10066          RY       6       4       2       0       0       2       4       6
               *
10067          KM    URS 2009

10068          KK     I27
10069          KM        Runoff subbasin I27
10070          BA   0.403
10071          LG    0.35    0.35    4.25    0.41       0
10072          UI       0     334     860     306      48       0       0       0       0       0
10073          UI       0       0       0       0       0       0       0       0       0       0
               *
```



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

10074          KK   CPI27
10075          KM        Combine I25 with I27
10076          HC       2   1.135
               *
10077          KM    URS 2009

10078          KK  RCPI27
10079          KM        Route flow from CP I27 to CP I29
10080          RS       2    FLOW      -1
10081          RC   0.050   0.045   0.050    3888  0.0103
10082          KM       Typical Sheet Flow Route
10083          RX       0     500     700     750     800     900    1100    1600
10084          RY       6       4       2       0       0       2       4       6
               *
10085          KM    URS 2009

10086          KK     I29
10087          KM        Runoff subbasin I29
10088          BA   0.373
10089          LG    0.35    0.35    4.00    0.46       0
10090          UI       0     418     841     162       0       0       0       0       0       0
10091          UI       0       0       0       0       0       0       0       0       0       0
               *

10092          KK   CPI29
10093          KM        Combine I27 with I29
10094          HC       2   1.508
               *
10095          KM    URS 2009

10096          KK  RCPI29
10097          KM        Route flow from CP I29 to CP I31
10098          RS       2    FLOW      -1
10099          RC   0.050   0.045   0.050    3777  0.0095
10100          KM       Typical Sheet Flow Route
```

```
10101          RX       0     500     700     750     800     900    1100    1600
10102          RY       6       4       2       0       0       2       4       6
               *
10103          KM    URS 2009

10104          KK     I31
10105          KM    Customized XKSAT Values
10106          KM        Runoff subbasin I31
10107          BA   0.361
10108          LG    0.35    0.35    3.95    0.47       0
10109          UI       0     432     812     133       0       0       0       0       0       0
10110          UI       0       0       0       0       0       0       0       0       0       0
               *
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


10111          KK   CPI31
10112          KM        Combine I29 with I31
10113          HC       2   1.869
               *
10114          KM    URS 2009

10115          KK  RCPI31
10116          KM        Route flow from CP I31 to CP I33
10117          RS       3    FLOW      -1
10118          RC   0.050   0.045   0.050    5318  0.0083
10119          KM       Typical Sheet Flow Farmfield
10120          RX       0     500     600     620     720     740     840    1340
10121          RY       5       3       1       0       0       1       3       5
               *
10122          KM    URS 2009

10123          KK     I33
10124          KM        Runoff subbasin I33
10125          BA   0.504
10126          LG    0.10    0.25    4.00    0.39       5
10127          UI       0     762    1053     122       0       0       0       0       0       0
10128          UI       0       0       0       0       0       0       0       0       0       0
               *

10129          KK   CPI33
10130          KM        Combine I31 with I33
10131          HC       2   2.373
               *
10132          KM    URS 2009

10133          KK  RCPI33
10134          KM        Route flow from CP I33 to CP I35
10135          RS       5    FLOW      -1
10136          RC   0.050   0.045   0.050    5311  0.0066
10137          RX       0     385     536     557     641     666     711     817
10138          RY  1032.0  1032.0  1031.2  1031.2  1031.3  1031.4  1031.6  1033.0
               *
10139          KM    URS 2009

10140          KK     I35
10141          KM        Runoff subbasin I35
10142          BA   0.507
10143          LG    0.18    0.25    4.70    0.29       4
10144          UI       0     227     714     683     248      63      26       0       0       0
10145          UI       0       0       0       0       0       0       0       0       0       0
               *

10146          KK   CPI35
10147          KM        Combine I33 with I35
10148          HC       2   2.880
               *
10149          KM    URS 2009
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


10150          KK  RCPI35
10151          KM        Route flow from CP I35 to CP I37
10152          RS       3    FLOW      -1
10153          RC   0.050   0.045   0.050    4061  0.0054
10154          KM       Typical Sheet Flow Farmfield
10155          RX       0     500     600     620     720     740     840    1340
10156          RY       5       3       1       0       0       1       3       5
               *
10157          KM    URS 2009

10158          KK     I37
10159          KM        Runoff subbasin I37
10160          BA   0.409
10161          LG    0.14    0.27    5.20    0.21       4
10162          UI       0     726     776      78       0       0       0       0       0       0
10163          UI       0       0       0       0       0       0       0       0       0       0
               *

10164          KK   CPI37
10165          KM        Combine I35 with I37
10166          HC       2   3.289
               *

10167          KK  I37RIV
10168          KM        Combine I36RIV, A45 with I37
10169          HC       3 363.368
               *

10170          KK  RCPI37
10171          KM        Route flow from CP I37RIV to CP A46RIV (WATERMAN WASH)
10172          KM    URS 2009
```

```
10173          RS       1    FLOW      -1
10174          RC   0.050   0.035   0.050    1909  0.0021
10175          RX       0    1277    1383    1391    1412    1433    1452    2409
10176          RY  1017.5  1009.4  1007.5  1008.0  1010.0  1011.1  1012.0  1017.5
               *
10177          KM    URS 2009

10178          KK     A36
10179          KM        Runoff from A36
10180          BA   0.435
10181          LG    0.35    0.35    4.90    0.28       1
10182          UI       0     135     394     632     346     117      37      18       0       0
               *
10183          KM    URS 2009

10184          KK  RCPA36
10185          KM        Route flow from CP A36 to CP A46
10186          RS       6    FLOW      -1
10187          RC   0.050   0.045   0.050    5192  0.0062
10188          RX       0     100     150     200     225     316     552     555
10189          RY  1005.8  1005.2  1004.9  1004.6  1004.7  1005.2  1006.4  1006.5
               *
10190          KM    URS 2009
```



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

10191          KK     A46
10192          KM        Runoff from A46
10193          BA   0.198
10194          LG    0.20    0.29    4.65    0.28       3
10195          UI       0     148     351     181      56      17       6       6       0       0
               *
10196          KM    URS 2009

10197          KK   CPA46
10198          KM        Combine A36 with A46
10199          HC       2   0.633
               *

10200          KK  A46RIV
10201          KM        Combine A45RIV with A46
10202          HC       2 364.001
               *

10203          KK  RCPA46
10204          KM        Route flow in Waterman Wash from CP A46RIV to CP I50RIV (WATERMAN WASH)
10205          KM    URS 2009
10206          RS       1    FLOW      -1
10207          RC   0.050   0.035   0.050    2254  0.0029
10208          RX       0    2337    2410    2545    2583    2590    2594    4597
10209          RY   992.0   985.9   982.0   984.7   986.1   988.0   988.0   992.0
               *
10210          KM    URS 2009

10211          KK     I38
10212          KM        Runoff subbasin I38
10213          BA   0.115
10214          LG    0.26    0.31    4.80    0.36      41
10215          UI       0     299     139       0       0       0       0       0       0       0
10216          UI       0       0       0       0       0       0       0       0       0       0
               *
10217          KM    URS 2009

10218          KK  RCPI38
10219          KM        Route flow from CP I38 to CP I39
10220          RS       3    FLOW      -1
10221          RC   0.050   0.045   0.050    4528  0.0159
10222          KM       Typical Sheet Flow Route
10223          RX       0     500     700     750     800     900    1100    1600
10224          RY       6       4       2       0       0       2       4       6
               *
10225          KM    URS 2009

10226          KK     I39
10227          KM        Runoff subbasin I39
10228          BA   0.217
10229          LG    0.35    0.35    4.25    0.41       0
10230          UI       0     284     481      66       0       0       0       0       0       0
10231          UI       0       0       0       0       0       0       0       0       0       0
               *
```



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

10232          KK   CPI39
10233          KM        Combine I38 with I39
10234          HC       2   0.465
               *
10235          KM    URS 2009

10236          KK  RCPI39
10237          KM        Route flow from CP I39 to CP I40
10238          RS       3    FLOW      -1
10239          RC   0.050   0.045   0.050    5144  0.0115
10240          KM       Typical Sheet Flow Route
10241          RX       0     500     700     750     800     900    1100    1600
10242          RY       6       4       2       0       0       2       4       6
               *
10243          KM    URS 2009

10244          KK     I40
10245          KM        Runoff subbasin I40
10246          BA   0.408
```

```
10247          LG    0.35    0.35    4.20    0.42       0
10248          UI       0     347     878     297      46       0       0       0       0       0
10249          UI       0       0       0       0       0       0       0       0       0       0
               *

10250          KK   CPI40
10251          KM        Combine I39 with I40
10252          HC       2   0.873
               *
10253          KM    URS 2009

10254          KK  RCPI40
10255          KM        Route flow from CP I40 to CP I41
10256          RS       3    FLOW      -1
10257          RC   0.050   0.045   0.050    5156  0.0103
10258          KM       Typical Sheet Flow Route
10259          RX       0     500     700     750     800     900    1100    1600
10260          RY       6       4       2       0       0       2       4       6
               *
10261          KM    URS 2009

10262          KK     I41
10263          KM        Runoff subbasin I41
10264          BA   0.476
10265          LG    0.35    0.35    4.00    0.46       0
10266          UI       0     366     988     400      70       0       0       0       0       0
10267          UI       0       0       0       0       0       0       0       0       0       0
               *

10268          KK   CPI41
10269          KM        Combine I40 with I41
10270          HC       2  1.350
               *
10271          KM    URS 2009
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

10272          KK  RCPI41
10273          KM        Route flow from CP I41 to CP I42
10274          RS       3    FLOW      -1
10275          RC   0.050   0.045   0.050    5249  0.0086
10276          KM       Typical Sheet Flow Route
10277          RX       0     500     700     750     800     900    1100    1600
10278          RY       6       4       2       0       0       2       4       6
               *
10279          KM    URS 2009

10280          KK     I42
10281          KM    Customized XKSAT Values
10282          KM        Runoff subbasin I42
10283          BA   0.422
10284          LG    0.35    0.35    3.95    0.47       5
10285          UI       0     302     848     389      75       0       0       0       0       0
10286          UI       0       0       0       0       0       0       0       0       0       0
               *

10287          KK   CPI42
10288          KM        Combine I41 with I42
10289          HC       2   1.771
               *
10290          KM    URS 2009

10291          KK  RCPI42
10292          KM        Route flow from CP I42 to CP I43
10293          RS       4    FLOW      -1
10294          RC   0.050   0.045   0.050    5329  0.0071
10295          KM       Typical Sheet Flow Route
10296          RX       0    1500    1700    1750    1800    1900    2100    3600
10297          RY       6       4       2       0       0       2       4       6
               *
10298          KM    URS 2009

10299          KK     I43
10300          KM        Runoff subbasin I43
10301          BA   0.432
10302          LG    0.35    0.35    4.50    0.35       0
10303          UI       0     263     793     478     108      26       0       0       0       0
10304          UI       0       0       0       0       0       0       0       0       0       0
               *

10305          KK   CPI43
10306          KM        Combine I42 with I43
10307          HC       2   2.203
               *
10308          KM    URS 2009
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

10309          KK  RCPI43
10310          KM        Route flow from CP I43 to CP I49
10311          RS       2    FLOW      -1
10312          RC   0.050   0.045   0.050    2760  0.0047
10313          KM       Typical Sheet Flow Farmfield
10314          RX       0     500     600     620     720     740     840    1340
10315          RY       5       3       1       0       0       1       3       5
               *

10316          KK    I44B
10317          KM        Runoff subbasin I44B
10318          BA   0.186
10319          LG    0.10    0.25    4.00    0.73      66
10320          UI       0     617       0       0       0       0       0       0       0       0
```

```
10321          UI       0       0       0       0       0       0       0       0       0
               *
10322          KM    URS 2009

10323          KK  RCI44B
10324          KM        Route flow from CP I44B to CP I44A
10325          RS       2    FLOW      -1
10326          RC   0.050   0.045   0.050    3966  0.0232
10327          RX       0      45     241     249     252     285     357     537
10328          RY  1282.9  1282.7  1282.1  1282.1  1282.1  1282.1  1282.6  1283.8
               *
10329          KM    URS 2009

10330          KK    I44A
10331          KM        Runoff subbasin I44A
10332          BA   0.653
10333          LG    0.22    0.30    4.15    0.57       6
10334          UI       0     668    1461     350       0       0       0       0       0       0
10335          UI       0       0       0       0       0       0       0       0       0       0
               *

10336          KK  CPI44A
10337          KM        Combine I44B and I44A
10338          HC       2
               *
10339          KM    URS 2009

10340          KK  RCI44A
10341          KM        Route flow from CP I44A to CP I45
10342          RS       2    FLOW      -1
10343          RC   0.050   0.045   0.050    5183  0.0118
10344          KM       Typical Sheet Flow Route
10345          RX       0     500     700     750     800     900    1100    1600
10346          RY       6       4       2       0       0       2       4       6
               *
               *
10347          KM    URS 2009
```



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

10348          KK     I45
10349          KM        Runoff subbasin I45
10350          BA   0.351
10351          LG    0.32    0.34    4.45    0.39       0
10352          UI       0     307     761     245      38       0       0       0       0       0
10353          UI       0       0       0       0       0       0       0       0       0       0
               *

10354          KK   CPI45
10355          KM        Combine I44A and I44B with I45
10356          HC       2   1.060
               *
10357          KM    URS 2009

10358          KK  RCPI45
10359          KM        Route flow from CP I45 to CP I46
10360          RS       3    FLOW      -1
10361          RC   0.050   0.045   0.050    5386  0.0106
10362          KM       Typical Sheet Flow Route
10363          RX       0     500     700     750     800     900    1100    1600
10364          RY       6       4       2       0       0       2       4       6
               *
10365          KM    URS 2009

10366          KK     I46
10367          KM        Runoff subbasin I46
10368          BA   0.460
10369          LG    0.35    0.35    4.10    0.44       0
10370          UI       0     333     929     417      79       0       0       0       0       0
10371          UI       0       0       0       0       0       0       0       0       0       0
               *

10372          KK   CPI46
10373          KM        Combine I45 with I46
10374          HC       2   1.520
               *
10375          KM    URS 2009

10376          KK  RCPI46
10377          KM        Route flow from CP I46 to CP I47
10378          RS       3    FLOW      -1
10379          RC   0.050   0.045   0.050    5225  0.0088
10380          KM       Typical Sheet Flow Route
10381          RX       0     500     700     750     800     900    1100    1600
10382          RY       6       4       2       0       0       2       4       6
               *
10383          KM    URS 2009

10384          KK     I47
10385          KM        Runoff subbasin I47
10386          BA   0.349
10387          LG    0.35    0.35    4.00    0.46       6
10388          UI       0     233     676     350      73       0       0       0       0       0
10389          UI       0       0       0       0       0       0       0       0       0       0
               *
```



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

10390          KK   CPI47
10391          KM        Combine I46 with I47
10392          HC       2   1.868
               *
```

```
10393          KM    URS 2009

10394          KK  RCPI47
10395          KM        Route flow from CP I47 to CP I48
10396          RS       3    FLOW      -1
10397          RC   0.050   0.045   0.050    5359  0.0071
10398          KM       Typical Sheet Flow Route
10399          RX       0     500     700     750     800     900    1100    1600
10400          RY       6       4       2       0       0       2       4       6
               *
10401          KM    URS 2009

10402          KK     I48
10403          KM        Runoff subbasin I48
10404          BA   0.337
10405          LG    0.35    0.35    4.30    0.40       0
10406          UI       0     225     652     338      70       0       0       0       0       0
10407          UI       0       0       0       0       0       0       0       0       0       0
               *

10408          KK   CPI48
10409          KM        Combine I47 with I48
10410          HC       2   2.206
               *
10411          KM    URS 2009

10412          KK  RCPI48
10413          KM        Route flow from CP I48 to CP I49
10414          RS       2    FLOW      -1
10415          RC   0.050   0.045   0.050    2919  0.0055
10416          KM       Typical Sheet Flow Farmfield
10417          RX       0     500     600     620     720     740     840    1340
10418          RY       5       3       1       0       0       1       3       5
               *
10419          KM    URS 2009

10420          KK     I49
10421          KM        Runoff subbasin I49
10422          BA   0.383
10423          LG    0.17    0.28    4.60    0.28       4
10424          UI       0    1012     449       0       0       0       0       0       0       0
10425          UI       0       0       0       0       0       0       0       0       0       0
               *

10426          KK   CPI49
10427          KM        Combine I43, I48 with I49
10428          HC       3   4.792
               *
10429          KM    URS 2009
```



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

10430          KK  RCPI49
10431          KM        Route flow from CP I49 to CP I50
10432          RS       2    FLOW      -1
10433          RC   0.050   0.045   0.050    4250  0.0052
10434          KM       Typical Sheet Flow Farmfield
10435          RX       0     500     600     620     720     740     840    1340
10436          RY       5       3       1       0       0       1       3       5
               *
10437          KM    URS 2009

10438          KK     I61
10439          KM        Runoff subbasin I61
10440          BA   0.250
10441          LG    0.35    0.35    4.65    0.32       9
10442          UI       0     731     228       0       0       0       0       0       0       0
               *
10443          KM    URS 2009

10444          KK  RCPI61
10445          KM        Route flow from CP I61 to CP I50
10446          RS       3    FLOW      -1
10447          RC   0.050   0.045   0.050    4071  0.0056
10448          KM       Typical Sheet Flow Farmfield
10449          RX       0     500     600     620     720     740     840    1340
10450          RY       5       3       1       0       0       1       3       5
               *
10451          KM    URS 2009

10452          KK     I50
10453          KM        Runoff subbasin I50
10454          BA   0.600
10455          LG    0.10    0.25    4.50    0.30       5
10456          UI       0    1232    1009       0       0       0       0       0       0       0
               *

10457          KK   CPI50
10458          KM        Combine I49, I61 with I50
10459          HC       3   5.642
               *

10460          KK  I50RIV
10461          KM        Combine A46RIV with I50
10462          HC       2 369.644
               *

10463          KK  RCPI50
10464          KM        Route flow from CP I50RIV to CP I62RIV (WATERMAN WASH)
10465          KM    URS 2009
10466          RS       1    FLOW      -1
10467          RC   0.050   0.035   0.050    2920  0.0047
10468          RX       0    1337    1410    1545    1583    1590    1594    2597
10469          RY   991.0   985.9   982.0   984.7   986.1   988.0   988.0   991.0
```

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                    *
10470               KM    URS 2009
1                                          HEC-1 INPUT                                                          PAGE262

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

10471               KK     I62
10472               KM        Runoff subbasin I62
10473               BA   0.422
10474               LG    0.35    0.35    4.60    0.33      20
10475               UI       0     402     934     257      38       0       0       0       0       0
                    *

10476               KK  I62RIV
10477               KM        Combine I50RIV with I62
10478               HC       2 370.066
                    *

10479               KK  RCPI62
10480               KM        Route flow from CP I62RIV to CP A49RIV (WATERMAN WASH)
10481               KM    URS 2009
10482               RS       3    FLOW      -1
10483               RC   0.050   0.035   0.050    5103  0.0032
10484               RX       0    1337    1410    1545    1583    1590    1594    2597
10485               RY   991.0   985.9   982.0   984.7   986.1   988.0   988.0   991.0
                    *

10486               KK   DRA11
10487               KM      Return diverted flow from CP A11 in basin A15
10488               DR   DVA11
                    *
10489               KM    URS 2009

10490               KK   RDA11
10491               KM        Route diverted flow from CP A11 to CP A15
10492               RS      10    FLOW      -1
10493               RC   0.050   0.045   0.050   11551  0.0080
10494               RX       0      66     100     125     159     234     325     530
10495               RY  1120.3  1120.0  1120.0  1120.0  1120.0  1120.0  1119.5  1121.3
                    *
10496               KM    URS 2009

10497               KK     A15
10498               KM        Runoff from A15
10499               BA   0.941
10500               LG    0.35    0.36    5.30    0.24       0
10501               UI       0      80     313     469     749     785     531     354     159      98
10502               UI      46      23      23       0       0       0       0       0       0       0
                    *
10503               KM    URS 2009

10504               KK   CPA15
10505               KM        Combine DRA11 with A15
10506               HC       2   3.189
                    *
10507               KM    URS 2009
1                                          HEC-1 INPUT                                                          PAGE263

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

10508               KK     A16
10509               KM        Runoff from A16
10510               BA   0.333
10511               LG    0.35    0.40    6.00    0.18       0
10512               UI       0      79     238     432     305     148      55      17      12       0
10513               UI       0       0       0       0       0       0       0       0       0       0
                    *
10514               KM    URS 2009

10515               KK   CPA16
10516               KM        Combine A15 with A16
10517               HC       2   3.522
                    *
10518               KM    URS 2009

10519               KK  RCPA16
10520               KM        Route flow from CP A16 to CP A35
10521               RS       4    FLOW      -1
10522               RC   0.050   0.045   0.050    5197  0.0054
10523               RX       0     162     200     250     300     425     470     590
10524               RY  1049.3  1048.0  1048.0  1048.0  1048.0  1048.0  1048.9  1049.1
                    *

10525               KK  DRA01A
10526               KM      Return diverted flow from CP A01A in basin A03
10527               DR  DVA01A
                    *
10528               KM    URS 2009

10529               KK  RDA01A
10530               KM        Route diverted flow from CP A01 to CP A03
10531               RS       5    FLOW      -1
10532               RC   0.050   0.045   0.050    3101  0.0081
10533               KM       Typical Sheet Flow Small Wash
10534               RX       0     600     700     706     711     717     817    1417
10535               RY       6       4       3       0       0       3       4       6
                    *
10536               KM    URS 2009

10537               KK     A03
10538               KM        Runoff from A03
10539               BA   1.064
10540               LG    0.35    0.35    2.88    0.99       0
10541               UI       0     211     650    1199    1053     606     233      97      37       0
```

```
                    *
10542               KM    URS 2009

10543               KK   CPA03
10544               KM        Combine DRA01A with A03
10545               HC       2   5.777
                    *
1                                                HEC-1 INPUT                                                    PAGE264

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


10546               KK  RCPA03
10547               KM        Route flow from CP A03 to CP A65
10548               KM    URS 2009
10549               RS       3    FLOW      -1
10550               RC   0.050   0.045   0.050    3897  0.0077
10551               RX       0     141     230     450     639     656     741    1242
10552               RY  1232.1  1230.7  1230.0  1230.0  1230.0  1230.2  1230.9  1231.9
                    *
10553               KM    URS 2009

10554               KK     A65
10555               KM        Runoff from A65
10556               KM        Customized XKSAT Values
10557               BA   0.547
10558               LG    0.35    0.35    3.48    0.64       0
10559               UI       0     299     931     658     176      39       0       0       0       0
10560               UI       0       0       0       0       0       0       0       0       0       0
                    *
10561               KM    URS 2009

10562               KK   CPA65
10563               KM        Combine A65 with A03
10564               HC       2   6.324
                    *
10565               KM    URS 2009

10566               KK  RCPA65
10567               KM        Route flow from CP A65 to CP A64
10568               RS       3    FLOW      -1
10569               RC   0.050   0.045   0.050    5684  0.0083
10570               RX       0    7093    7645    7666    7809    7837    8351   15456
10571               RY  1201.1  1200.0  1198.4  1198.6  1199.1  1199.6  1200.0  1201.1
                    *
10572               KM    URS 2009

10573               KK     A64
10574               KM        Runoff from A64
10575               BA   0.231
10576               LG    0.35    0.35    4.15    0.43       0
10577               UI       0     147     436     244      53      14       0       0       0       0
                    *
10578               KM    URS 2009

10579               KK   CPA64
10580               KM        Combine flow from CP A65 with A64
10581               HC       2   6.555
                    *
10582               KM    URS 2009
1                                                HEC-1 INPUT                                                    PAGE265

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


10583               KK    DA64
10584               KM      Divert flow from CP A64 into basin A18
10585               KM        Natural divergence of flow due to a braided channel network.
10586               DT   DVA64
10587               DI       0      13     151     609    1664    3103    4876    6949    9300
10588               DQ       0      13     148     498    1261    2279    3520    4965    6597
                    *
10589               KM    URS 2009

10590               KK  RCPA64
10591               KM        Route remainder flow from CP A64 to CP A10
10592               RS       7    FLOW      -1
10593               RC   0.050   0.045   0.050    6819  0.0082
10594               RX       0     573     583     617     700     777     815     832
10595               RY  1155.5  1154.4  1154.4  1154.0  1154.0  1154.7  1155.4  1155.7
                    *

10596               KK  DRA01B
10597               KM      Return Diverted flow from CP A01 in basin A10
10598               DR  DVA01B
                    *
10599               KM    URS 2009

10600               KK  RDA01B
10601               KM        Route diverted flow from CP A01 to CP A10
10602               RS       8    FLOW      -1
10603               RC   0.050   0.045   0.050   18995  0.0083
10604               RX       0     173     293     355     425     463     470     480
10605               RY  1219.8  1217.5  1218.0  1218.0  1219.8  1220.9  1220.9  1221.0
                    *
10606               KM    URS 2009

10607               KK     A10
10608               KM        Runoff from A10
10609               BA   0.928
10610               LG    0.35    0.35    4.80    0.29       0
10611               UI       0      88     329     496     819     743     503     313     137      85
10612               UI      29      24      23       0       0       0       0       0       0       0
10613               UI       0       0       0       0       0       0       0       0       0       0
                    *
10614               KM    URS 2009
```

```
10615          KK   CPA10
10616          KM        Combine A64, DR01B with A10
10617          HC       3   4.648
               *
10618          KM    URS 2009

10619          KK    DA10
10620          KM      Divert flow from CP A10 into A17
10621          KM        Natural divergence of flow due to a braided channel network.
10622          DT   DVA10
10623          DI       0      16      74     175     444    1025    1779    2684    3725
10624          DQ       0       9      42     100     243     542     927    1387    1915
               *
1                                          HEC-1 INPUT                                                    PAGE266

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

10625          KM    URS 2009

10626          KK  RCPA10
10627          KM        Route remainder flow from CP A10 to CP A34
10628          RS       8    FLOW      -1
10629          RC   0.050   0.045   0.050    8770  0.0071
10630          RX       0     135     272     279     342     430     460     615
10631          RY  1070.7    1070  1069.4  1069.4  1069.4  1068.4  1068.3  1069.6
               *
10632          KM    URS 2009

10633          KK     A34
10634          KM        Runoff from A34
10635          BA   0.385
10636          LG    0.35    0.39    5.70    0.20       0
10637          UI       0     140     418     563     258      79      20       0       0       0
               *
10638          KM    URS 2009

10639          KK   CPA34
10640          KM        Combine A10 with A34
10641          HC       2   2.570
               *
10642          KM    URS 2009

10643          KK  RCPA34
10644          KM        Route flow from CP A34 to CP A35
10645          RS       3    FLOW      -1
10646          RC   0.050   0.045   0.050    3134  0.0064
10647          RX       0     132     186     229     248     260     264     488
10648          RY  1031.4  1030.2  1030.2  1029.9  1029.9  1029.9  1029.9  1031.7
               *
10649          KM    URS 2009

10650          KK     A35
10651          KM        Runoff from A35
10652          BA   0.847
10653          LG    0.35    0.36    5.00    0.27       0
10654          UI       0     223     662    1162     738     314     119      33       0       0
               *
10655          KM    URS 2009

10656          KK   CPA35
10657          KM        Combine A16, A34 with A35
10658          HC       3   6.939
               *
10659          KM    URS 2009

10660          KK  RCPA35
10661          KM        Route flow from CP A35 to CP A47
10662          RS       4    FLOW      -1
10663          RC   0.050   0.045   0.050    5202  0.0067
10664          RX       0     200     400     450     500     550     600    1300
10665          RY  1005.3  1004.0  1003.7  1003.7  1003.7  1003.7  1003.7  1005.0
               *
1                                          HEC-1 INPUT                                                    PAGE267

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

10666          KM    URS 2009

10667          KK     A47
10668          KM        Runoff from A47
10669          BA   0.791
10670          LG    0.20    0.28    4.60    0.30       3
10671          UI       0     342    1029     924     444     176      86      17      17      17
10672          UI       0       0       0       0       0       0       0       0       0       0
               *
10673          KM    URS 2009

10674          KK   CPA47
10675          KM        Combine A35 with A47
10676          HC       2    7.73
               *
10677          KM    URS 2009

10678          KK  RCPA47
10679          KM        Route flow from CP A47 to CP A49
10680          RS       6    FLOW      -1
10681          RC   0.050   0.045   0.050    7547  0.0052
10682          RX      52     197     270     292     485     575     712    1147
10683          RY   972.5   972.0   972.0   972.0   971.0   971.3   971.3   972.0
               *
10684          KM    URS 2009

10685          KK     A48
10686          KM        Runoff from A48
10687          BA   1.059
```

```
10688          LG    0.12    0.26    4.65    0.27       7
10689          UI       0     385    1150    1548     710     216      54       0       0       0
               *
10690          KM    URS 2009

10691          KK  RCPA48
10692          KM        Route flow from CP A48 to CP A49
10693          RS       2    FLOW      -1
10694          RC   0.050   0.045   0.050    2255  0.0071
10695          RX       0    1193    1207    1500    1600    1700    1800    2807
10696          RY   968.2   965.8   965.7   966.3   966.5   966.7   967.0   968.0
               *
10697          KM    URS 2009

10698          KK     A49
10699          KM        Runoff from A49
10700          BA   0.751
10701          LG    0.23    0.30    4.45    0.33       3
10702          UI       0     176     534     969     689     338     126      40      28       0
               *
10703          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE268

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


10704          KK   CPA49
10705          KM        Combine A47, A48 with A49
10706          HC       3   9.540
               *

10707          KK  A49RIV
10708          KM        Combine CP I62RIV with CP A49
10709          KM        Tuthill Road crossing at A49RIV
10710          HC       2 377.944
               *

10711          KK  RCPA49
10712          KM        Route flow in Waterman Wash from CP A49RIV TO CP A51RIV (WATERMAN WASH)
10713          KM     URS 2009
10714          RS       1    FLOW      -1
10715          RC   0.050   0.035   0.050    3328  0.0030
10716          RX       0    1291    1387    1429    1559    1657    1796    1919
10717          RY   955.1   952.7   950.6   951.7   955.6   957.5   958.2   960.0
               *
10718          KM    URS 2009

10719          KK     A04
10720          KM        Runoff from A04
10721          KM        Customized XKSAT Values
10722          BA   0.743
10723          LG    0.35    0.35    2.80    1.05       0
10724          UI       0     443    1344     837     198      44       0       0       0       0
10725          UI       0       0       0       0       0       0       0       0       0       0
               *
10726          KM    URS 2009

10727          KK    DA04
10728          KM      Divert flow from CP A04 into basin A06
10729          KM        Natural divergence of flow due to a braided channel network.
10730          DT   DVA04
10731          DI       0      64     221     405    1007    2383    4403    6549    9034   11830
10732          DQ       0      38     129     222     543    1283    2351    3478    4782    6249
               *

10733          KK  RCPA04
10734          KM        Route remainder flow from CP A04 to CP A07
10735          KM    URS 2009
10736          RS       7    FLOW      -1
10737          RC   0.050   0.045   0.050    8731  0.0128
10738          KM        Typical Sheet Flow Small Wash
10739          RX       0     600     700     706     711     717     817    1417
10740          RY       6       4       3       0       0       3       4       6
               *
10741          KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE269

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


10742          KK     A07
10743          KM        Runoff from A07
10744          KM        Customized XKSAT Values
10745          BA   0.523
10746          LG    0.35    0.35    2.86    1.00       0
10747          UI       0     200     606     758     324      98      25       0       0       0
10748          UI       0       0       0       0       0       0       0       0       0       0
               *
10749          KM    URS 2009

10750          KK   CPA07
10751          KM        Combine A04 with A07
10752          HC       2    .857
               *
10753          KM    URS 2009

10754          KK    DA07
10755          KM      Divert flow from CP A07 into basin A22
10756          KM        Natural divergence of flow due to a braided channel network.
10757          DT   DVA07
10758          DI       0     115     792    1951    3485    5346    7503    9932   12613
10759          DQ       0      87     487    1147    2009    3050    4252    5603    7093
               *
10760          KM    URS 2009

10761          KK  RCPA07
```

```
10762          KM        Route remainder flow from CP A07 to CP A21
10763          RS      15    FLOW      -1
10764          RC   0.050   0.045   0.050   11510  0.0097
10765          RX       0      87     116     234     271     300     325     530
10766          RY  1174.4  1174.3  1174.0  1174.0  1173.0  1173.0  1173.3  1173.9
               *
10767          KM    URS 2009

10768          KK     A09
10769          KM        Runoff from A09
10770          KM        Customized XKSAT Values
10771          BA   0.784
10772          LG    0.35    0.35    2.94    0.95       0
10773          UI       0     170     521     960     743     401     141      55      28       0
10774          UI       0       0       0       0       0       0       0       0       0       0
               *
10775          KM    URS 2009

10776          KK    DA09
10777          KM      Divert flow from CP A09 into basin A18
10778          KM        Natural divergence of flow due to a braided channel network.
10779          DT   DVA09
10780          DI       0      49     188     378     950    2131    3696    5581    7757
10781          DQ       0       7      30      69     176     405     701    1056    1464
               *
10782          KM    URS 2009
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


10783          KK  RCPA09
10784          KM        Route remainder flow from CP A09 to CP A08
10785          RS       2    FLOW      -1
10786          RC   0.050   0.045   0.050    4721  0.0068
10787          RX      48     106     151     166     175     209     321     514
10788          RY  1176.6  1174.7  1174.0  1174.9  1175.4  1175.5  1175.5  1175.4
               *
10789          KM    URS 2009

10790          KK     A08
10791          KM        Runoff from A08
10792          KM        Customized XKSAT Values
10793          BA   2.128
10794          LG    0.35    0.35    3.17    0.81       0
10795          UI       0     149     528     832    1149    1763    1346     979     678     323
10796          UI     214     125      46      46      45       0       0       0       0       0
10797          UI       0       0       0       0       0       0       0       0       0       0
               *
10798          KM    URS 2009

10799          KK   CPA08
10800          KM        Combine A09 with A08
10801          HC       2   2.771
               *
10802          KM    URS 2009

10803          KK    DA08
10804          KM      Divert flow from CP A08 into basin A19
10805          KM        Natural divergence of flow due to a braided channel network.
10806          DT   DVA08
10807          DI       0     273    1121    2433    4119    6137    8456   11057   13921
10808          DQ       0     196     705    1448    2386    3499    4772    6194    7756
               *
10809          KM    URS 2009

10810          KK  RCPA08
10811          KM        Route remainder flow from CP A08 to CP A21
10812          RS       9    FLOW      -1
10813          RC   0.050   0.045   0.050    3836  0.0089
10814          RX     0.0   604.0   613.0   633.0   680.0   684.0   685.0   786.0
10815          RY  1143.0  1140.9  1141.0  1141.0  1141.1  1141.1  1141.1  1143.0
               *
10816          KM    URS 2009

10817          KK     A21
10818          KM        Runoff from A21
10819          BA   1.044
10820          LG    0.35    0.35    4.60    0.33       0
10821          UI       0     149     494     794    1135     723     422     170      83      31
10822          UI      31       0       0       0       0       0       0       0       0       0
10823          UI       0       0       0       0       0       0       0       0       0       0
               *
10824          KM    URS 2009
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


10825          KK   CPA21
10826          KM        Combine A08, A07 with A21
10827          HC       3   2.515
               *
10828          KM    URS 2009

10829          KK    DA21
10830          KM      Divert flow from CP A21 into basin A32
10831          KM        Natural divergence of flow due to a braided channel network.
10832          DT   DVA21
10833          DI       0      50     203     450    1373    3396    6132    9472   13359
10834          DQ       0      22      89     198     610    1515    2741    4237    5978
               *
10835          KM    URS 2009

10836          KK  RCPA21
10837          KM        Route remainder flow from CP A21 to CP A20
```

```
10838          RS       6    FLOW      -1
10839          RC   0.050   0.045   0.050    5790  0.0083
10840          RX       0     510     533     598     609     693     770    1290
10841          RY  1110.4    1109  1108.9    1108    1108  1109.1  1109.3  1110.2
               *
10842          KM    URS 2009

10843          KK     A20
10844          KM        Runoff from A20
10845          BA   0.340
10846          LG    0.35    0.36    5.00    0.27       0
10847          UI       0     102     298     490     277      99      32      14       0       0
10848          UI       0       0       0       0       0       0       0       0       0       0
               *
10849          KM    URS 2009

10850          KK   CPA20
10851          KM        Combine A21 with A20
10852          HC       2   1.748
               *
10853          KM    URS 2009

10854          KK    DA20
10855          KM      Divert flow from CP A20 into basin A32
10856          KM        Natural divergence of flow due to a braided channel network.
10857          DT   DVA20
10858          DI       0      39     300     800    1523    2421    3473    4666    5986    7426
10859          DQ       0       2      27     142     358     643     988    1385    1830    2318
               *
10860          KM    URS 2009

10861          KK  RCPA20
10862          KM        Route remainder flow from CP A20 to CP A51
10863          RS      23    FLOW      -1
10864          RC   0.050   0.045   0.050   23127  0.0061
10865          RX     102     168     195     276     283     362     368     534
10866          RY  1064.6  1064.6  1064.6  1064.1  1064.0  1064.0  1064.1  1065.1
               *
```



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

10867          KM    URS 2009

10868          KK     A51
10869          KM        Runoff from A51
10870          BA   1.486
10871          LG    0.34    0.34    4.70    0.31       0
10872          UI       0      91     264     466     608     871    1070     773     581     423
10873          UI     223     153      92      45      28      28      28       0       0       0
               *
10874          KM    URS 2009

10875          KK  CPA51A
10876          KM        Combine A20 with A51
10877          HC       2   3.055
               *

10878          KK   DRA09
10879          KM      Return diverted flow A09
10880          DR   DVA09
               *
10881          KM    URS 2009

10882          KK   RDA09
10883          KM        Route diverted flow from CP A09 to CP A18
10884          RS      60    FLOW      -1
10885          RC   0.050   0.045   0.050   11446  0.0080
10886          RX       0     245     278     298     302     324     368     418
10887          RY  1170.0  1170.0  1168.7  1168.5  1168.5  1168.8  1170.0  1170.0
               *

10888          KK   DRA64
10889          KM      Return diverted flow A64
10890          DR   DVA64
               *
10891          KM    URS 2009

10892          KK   RDA64
10893          KM        Route diverted flow from CP A64 to CP A18
10894          RS       7    FLOW      -1
10895          RC   0.050   0.045   0.050    8406  0.0076
10896          RX       4     578     672     709     739     778     801    1573
10897          RY  1159.0  1158.0  1157.6  1157.2  1157.1  1157.0  1157.1  1158.6
               *
10898          KM    URS 2009

10899          KK     A18
10900          KM        Runoff from A18
10901          BA   0.694
10902          LG    0.35    0.39    5.80    0.19       0
10903          UI       0     114     365     624     745     449     218      97      36      22
10904          UI       0       0       0       0       0       0       0       0       0       0
10905          UI       0       0       0       0       0       0       0       0       0       0
               *
10906          KM    URS 2009
```



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

10907          KK   CPA18
10908          KM        Combine DRA09, DRA64 with A18
10909          HC       3   5.882
               *
10910          KM    URS 2009
```

```
10911          KK    DA18
10912          KM      Divert flow from CP A18 into basin A33
10913          KM        Natural divergence of flow due to a braided channel network.
10914          DT   DVA18
10915          DI       0       6      35     106     249     531    1186    2248    3560    5095
10916          DQ       0       6      35     106     215     304     519     975    1537    2194
               *
10917          KM    URS 2009

10918          KK  RCPA18
10919          KM        Route remainder flow from CP A18 to CPA19
10920          RS       7    FLOW      -1
10921          RC   0.050   0.045   0.050    2176  0.0074
10922          RX      50      79     108     212     230     357     385     386
10923          RY  1094.6  1094.0  1094.0  1092.8  1092.8  1094.0  1094.0  1094.0
               *

10924          KK   DRA08
10925          KM      Return diverted flow from CP A08
10926          DR   DVA08
               *
10927          KM    URS 2009

10928          KK   RDA08
10929          KM        Route diverted flow from CP A08 to CP A19
10930          RS       5    FLOW      -1
10931          RC   0.050   0.045   0.050    9808  0.0080
10932          RX       0     622     666     711     761     798     826    1427
10933          RY  1147.0  1146.0  1145.5  1145.4  1145.6  1145.9  1146.0  1147.0
               *
10934          KM    URS 2009

10935          KK     A19
10936          KM        Runoff from A19
10937          BA   0.464
10938          LG    0.35    0.38    5.40    0.22       0
10939          UI       0     113     341     613     419     195      75      21      18       0
10940          UI       0       0       0       0       0       0       0       0       0       0
               *
10941          KM    URS 2009

10942          KK  CPA19A
10943          KM        Combine DRA08 with A19
10944          HC       2   2.210
               *
10945          KM    URS 2009
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

10946          KK   CPA19
10947          KM        Combine CPA19A with routed flow from A18
10948          HC       2   5.386
               *
10949          KM    URS 2009

10950          KK  RCPA19
10951          KM        ROUTE FLOW FROM A19 TO A63
10952          RS       4    FLOW      -1
10953          RC   0.050   0.045   0.050    6873  0.0081
10954          KM       Typical Sheet Flow Route
10955          RX       0     500     700     750     800     900    1100    1600
10956          RY       6       4       2       0       0       2       4       6
               *
10957          KM    URS 2009

10958          KK     A63
10959          KM       RUNOFF FROM A63
10960          BA   0.607
10961          LG    0.35    0.37    5.30    0.23       0
10962          UI       0     183     536     876     491     173      55      25       0       0
               *
10963          KM    URS 2009

10964          KK  CPA63A
10965          KM        COMBINE A19 WITH A63
10966          HC       2   5.993
               *

10967          KK   DRA10
10968          KM      Return diverted flow from CP A10
10969          DR   DVA10
               *
10970          KM    URS 2009

10971          KK   RDA10
10972          KM        Route diverted flow from CP A10 to CP A17
10973          RS       4    FLOW      -1
10974          RC   0.050   0.045   0.050    9190  0.0070
10975          RX       0      29     171     185     190     243     383     504
10976          RY  1077.7    1078  1074.9  1074.2  1074.2  1076.6    1078    1078
               *
10977          KM    URS 2009

10978          KK     A17
10979          KM        Runoff from A17
10980          BA   0.570
10981          LG    0.35    0.39    5.80    0.19       0
10982          UI       0      76     255     401     611     406     251     105      59      16
10983          UI      16       0       0       0       0       0       0       0       0       0
10984          UI       0       0       0       0       0       0       0       0       0       0
               *
10985          KM    URS 2009
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```

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

10986          KK   CPA17
10987          KM        Combine DRA10 with A17
10988          HC       2   3.033
               *

10989          KK   DRA18
10990          KM      Return diverted flow from CP A18
10991          DR   DVA18
               *
10992          KM    URS 2009

10993          KK   RDA18
10994          KM        Route diverted flow from CP A18 to CP A33
10995          RS       6    FLOW      -1
10996          RC   0.050   0.045   0.050    7361  0.0079
10997          RX       1      32      77     168     207     240     250     289
10998          RY  1093.4  1092.6  1092.0  1092.0  1092.9  1092.9  1092.9  1092.9
               *
10999          KM    URS 2009

11000          KK     A33
11001          KM        Runoff from A33
11002          BA   0.284
11003          LG    0.35    0.40    6.00    0.18       0
11004          UI       0     100     294     418     200      60      17       0       0       0
               *
11005          KM    URS 2009

11006          KK  CPA33A
11007          KM        Combine DRA18 with A33
11008          HC       2   2.990
               *
11009          KM    URS 2009

11010          KK   CPA33
11011          KM        COMBINE A17 WITH A33
11012          HC       2   6.023
               *
11013          KM    URS 2009

11014          KK  RCPA33
11015          KM        Route flow from CP A33 to CP A63
11016          RS       2    FLOW      -1
11017          RC   0.050   0.045   0.050    3039  0.0046
11018          KM      Typical Sheet Flow Route
11019          RX       0     500     700     750     800     900    1100    1600
11020          RY       6       4       2       0       0       2       4       6
               *
11021          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE276
 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

11022          KK   CPA63
11023          KM        COMBINE A33 WITH CPA63A
11024          HC       2  12.016
               *
11025          KM    URS 2009

11026          KK  RCPA63
11027          KM        Route flow from CP A63 to CP A50
11028          RS       6    FLOW      -1
11029          RC   0.050   0.045   0.050   11113  0.0060
11030          KM      Typical Sheet Flow Farmfield
11031          RX       0     500     600     620     720     740     840    1340
11032          RY       5       3       1       0       0       1       3       5
               *
11033          KM    URS 2009

11034          KK     A50
11035          KM        Runoff from A50
11036          BA   1.034
11037          LG    0.49    0.25    4.65    0.49      14
11038          UI       0      36      36     100     151     185     212     250     296     398
11039          UI     448     356     302     261     219     185     152     102      63      59
11040          UI      48      36      30      11      11      11      11      11      11      11
11041          UI       0       0       0       0       0       0       0       0       0       0
               *
11042          KM    URS 2009

11043          KK   CPA50
11044          KM        Combine A63 with A50
11045          HC       2   13.01
               *
11046          KM    URS 2009

11047          KK  RCPA50
11048          KM        Route flow from CP A50 to CP A51
11049          RS      11    FLOW      -1
11050          RC   0.050   0.045   0.050    4259  0.0051
11051          RX       0     696     711     725     728     832     845    1352
11052          RY   956.1   954.2   954.1   954.0   954.0   954.2   955.4   957.0
               *
11053          KM    URS 2009

11054          KK   CPA51
11055          KM        Combine A50 with CPA51A
11056          HC       2  16.065
               *

11057          KK  A51RIV
```

```
11058          KM        Combine A49RIV with A51
11059          HC       2 388.643
               *
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


11060          KK  RCPA51
11061          KM        Route flow in Waterman Wash from CP A51RIV to CP A56RIV (WATERMAN WASH)
11062          KM    URS 2009
11063          RS       1    FLOW      -1
11064          RC   0.050   0.035   0.050     271  0.0057
11065          RX     0.0  1548.0  1591.0  1690.0  1818.0  1876.0  1930.0  2463.0
11066          RY   944.5   939.0   937.4   942.3   944.3   946.0   946.0   949.0
               *
11067          KM    URS 2009

11068          KK     A05
11069          KM        Runoff from A05
11070          KM        Customized XKSAT Values
11071          BA   2.141
11072          LG    0.35    0.35    3.01    0.90       0
11073          UI       0     446    1366    2530    2070    1154     423     170      75       0
11074          UI       0       0       0       0       0       0       0       0       0       0
               *
11075          KM    URS 2009

11076          KK  RCPA05
11077          KM        Route flow from CP A05 to CP A26
11078          RS      10    FLOW      -1
11079          RC   0.050   0.045   0.050    9404  0.0089
11080          RX       0     605     723     929     945     965    1011    1556
11081          RY  1155.3  1154.0  1154.0  1153.8  1153.8  1154.0  1154.0  1155.0
               *
11082          KM    URS 2009

11083          KK     A23
11084          KM        Runoff from A23
11085          KM        Customized XKSAT Values
11086          BA   0.233
11087          LG    0.35    0.35    3.11    0.84       0
11088          UI       0      54     166     301     214     105      39      12       9       0
11089          UI       0       0       0       0       0       0       0       0       0       0
               *
11090          KM    URS 2009

11091          KK  RCPA23
11092          KM        Route flow from CP A23 to CP A26
11093          RS      10    FLOW      -1
11094          RC   0.050   0.045   0.050    9082  0.0087
11095          RX       0      62     205     232     258     347     358     376
11096          RY  1158.7  1157.9  1156.7  1156.5  1156.4  1157.5  1157.7  1158.0
               *
11097          KM    URS 2009

11098          KK     A25
11099          KM        Runoff from A25
11100          KM        Customized XKSAT Values
11101          BA   0.215
11102          LG    0.35    0.35    3.19    0.79       0
11103          UI       0      75     222     317     152      45      13       0       0       0
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

11104          UI       0       0       0       0       0       0       0       0       0       0
               *
11105          KM    URS 2009

11106          KK  RCPA25
11107          KM        Route flow from CP A25 to CP A26
11108          RS       2    FLOW      -1
11109          RC   0.050   0.045   0.050    3353  0.0089
11110          RX      23     131     171     185     336     353     400     420
11111          RY  1103.3  1104.0  1102.2  1102.2  1103.6  1103.6  1103.6  1103.6
               *
11112          KM    URS 2009

11113          KK     A26
11114          KM        Runoff from A26
11115          KM        Customized XKSAT Values
11116          BA   0.499
11117          LG    0.35    0.35    3.74    0.54       0
11118          UI       0     127     379     674     442     196      76      19       0       0
11119          UI       0       0       0       0       0       0       0       0       0       0
               *

11120          KK   CPA26
11121          KM        Combine A05, A23, A25 with A26
11122          HC       4   3.088
               *
11123          KM    URS 2009

11124          KK  RCPA26
11125          KM        Route flow from CP A26 to CP A27
11126          RS       5    FLOW      -1
11127          RC   0.050   0.045   0.050    7992  0.0079
11128          RX       6     189     267     345     376     405     432     512
11129          RY  1050.0  1050.0  1048.9  1048.0  1048.0  1048.6  1048.9  1050.3
               *
11130          KM    URS 2009

11131          KK     A27
11132          KM        Runoff from A27
11133          KM        Customized XKSAT Values
```

```
11134          BA   1.105
11135          LG    0.35    0.35    3.60    0.58       0
11136          UI       0     154     512     817    1196     773     461     191      95      33
11137          UI      33       0       0       0       0       0       0       0       0       0
               *

11138          KK  CPA27A
11139          KM        Combine A26 with A27
11140          HC       2   4.194
               *
11141          KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE279

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

11142          KK     A28
11143          KM        Runoff from A28
11144          KM        Customized XKSAT Values
11145          BA   0.551
11146          LG    0.35    0.35    3.45    0.65       0
11147          UI       0     244     767     746     274      71      28       0       0       0
11148          UI       0       0       0       0       0       0       0       0       0       0
               *
11149          KM    URS 2009

11150          KK  RCPA28
11151          KM        Route flow from CP A28 to CP A27
11152          RS       2    FLOW      -1
11153          RC   0.050   0.045   0.050    2223  0.0074
11154          RX      75     158     280     375     420     462     553     628
11155          RY  1035.0  1032.7  1031.2  1031.4  1031.5  1032.0  1034.0  1034.0
               *

11156          KK   CPA27
11157          KM        Combine A28 with A27
11158          HC       2   4.745
               *
11159          KM    URS 2009

11160          KK  RCPA27
11161          KM        Route flow from CP A27 to CP A29
11162          RS       2    FLOW      -1
11163          RC   0.050   0.045   0.050    4127  0.0041
11164          RX       0     142     288     345     421     538     633     774
11165          RY  1020.1  1016.2  1015.3  1014.4  1014.0  1016.5  1016.8  1018.8
               *
11166          KM    URS 2009

11167          KK     A29
11168          KM        Runoff from A29
11169          KM        Customized XKSAT Values
11170          BA   1.188
11171          LG    0.35    0.35    3.09    0.85       0
11172          UI       0     203     646    1129    1257     751     344     159      52      38
11173          UI       0       0       0       0       0       0       0       0       0       0
11174          UI       0       0       0       0       0       0       0       0       0       0
               *

11175          KK   CPA29
11176          KM        Combine A27 with A29
11177          HC       2   5.933
               *

11178          KK   DRA04
11179          KM      Return diverted flow from CP A04
11180          DR   DVA04
               *
11181          KM    URS 2009
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

11182          KK   RDA04
11183          KM        Route diverted flow from CP A04 to CP A06
11184          RS      12    FLOW      -1
11185          RC   0.050   0.045   0.050   15251  0.0121
11186          RX       2     512     545     593     670     724     728    1241
11187          RY  1251.0  1250.0  1249.4  1249.4  1249.3  1249.7  1249.8  1250.8
               *
11188          KM    URS 2009

11189          KK     A06
11190          KM        Runoff from A06
11191          KM        Customized XKSAT Values
11192          BA   1.108
11193          LG    0.35    0.35    2.91    0.97       0
11194          UI       0     188     599    1043    1176     703     325     149      50      36
11195          UI       0       0       0       0       0       0       0       0       0       0
11196          UI       0       0       0       0       0       0       0       0       0       0
               *
11197          KM    URS 2009

11198          KK   CPA06
11199          KM        Combine DRA04 with A06
11200          HC       2   1.517
               *
11201          KM    URS 2009

11202          KK  RCPA06
11203          KM        Route flow from CP A06 to CP A24
11204          RS       6    FLOW      -1
11205          RC   0.050   0.045   0.050   10764  0.0089
11206          RX       0      75     150     225     300     375     450     525
11207          RY  1118.2  1118.0  1117.5  1115.9  1116.2  1117.5    1118  1118.3
```

```
                 *
11208            KK   DRA07
11209            KM      Return diverted flow from CP A07
11210            DR   DVA07
                 *
11211            KM    URS 2009

11212            KK   RDA07
11213            KM        Route diverted flow from CP A07 to CP A22
11214            RS      25    FLOW     -1
11215            RC   0.050   0.045   0.050   16606  0.0099
11216            RX       0      92     153     247     469     534     603     698
11217            RY  1188.8  1187.5  1187.3  1186.4  1186.5  1186.7  1186.8  1187.2
                 *
11218            KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE281

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

11219            KK     A22
11220            KM        Runoff from A22
11221            KM        Customized XKSAT Values
11222            BA   0.578
11223            LG    0.35    0.35    3.71    0.55       0
11224            UI       0      44     174     262     394     498     342     238     130      71
11225            UI      42      13      13      13       0       0       0       0       0       0
                 *
11226            KM    URS 2009

11227            KK   CPA22
11228            KM        Combine DRA07 with A22
11229            HC       2   0.989
                 *
11230            KM    URS 2009

11231            KK  RCPA22
11232            KM        Route flow from CP A22 to CP A24
11233            RS       1    FLOW     -1
11234            RC   0.050   0.045   0.050    1522  0.0079
11235            RX      99     147     193     208     347     374     383     450
11236            RY  1075.5  1075.3  1074.8  1072.5  1075.3  1076.0  1076.1  1076.7
                 *
11237            KM    URS 2009

11238            KK     A24
11239            KM        Runoff from A24
11240            KM        Customized XKSAT Values
11241            BA   1.355
11242            LG    0.35    0.35    3.17    0.81       0
11243            UI       0     145     518     786    1308    1044     695     379     183      94
11244            UI      36      36       0       0       0       0       0       0       0       0
11245            UI       0       0       0       0       0       0       0       0       0       0
                 *
11246            KM    URS 2009

11247            KK   CPA24
11248            KM        Combine A06, A22 with A24
11249            HC       3   3.861
                 *
11250            KM    URS 2009

11251            KK  RCPA24
11252            KM        Route flow from CP A24 to CP A30
11253            RS       6    FLOW     -1
11254            RC   0.050   0.045   0.050    8429  0.0069
11255            RX       0      84     311     403     459     587     714     821
11256            RY  1045.8  1045.4  1044.9  1042.1  1044.0  1044.0  1045.6  1045.9
                 *
11257            KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE282

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

11258            KK     A30
11259            KM        Runoff from A30
11260            KM        Customized XKSAT Values
11261            BA   0.675
11262            LG    0.35    0.35    3.88    0.49       0
11263            UI       0      67     246     373     620     531     358     214      97      55
11264            UI      17      17       0       0       0       0       0       0       0       0
11265            UI       0       0       0       0       0       0       0       0       0       0
                 *
11266            KM    URS 2009

11267            KK  CPA30A
11268            KM        Combine A24 with A30
11269            HC       2   4.536
                 *
11270            KM    URS 2009

11271            KK   CPA30
11272            KM        Combine A29 with A30
11273            HC       2  10.468
                 *
11274            KM    URS 2009

11275            KK  RCPA30
11276            KM        Route flow from CP A30 to CP A52
11277            RS       2    FLOW     -1
11278            RC   0.050   0.045   0.050    3039  0.0046
11279            RX       0     248     304     443     490     657     757     836
11280            RY  1006.0  1005.8  1004.6  1003.4  1001.4  1004.1  1005.1  1005.9
                 *
```

```
11281          KM    URS 2009

11282          KK     A52
11283          KM        Runoff from A52
11284          BA   0.218
11285          LG    0.35    0.35    4.60    0.33       0
11286          UI       0     117     365     266      73      16       0       0       0       0
11287          UI       0       0       0       0       0       0       0       0       0       0
               *
11288          KM    URS 2009

11289          KK  CPA52A
11290          KM        Combine A30 with A52
11291          HC       2  10.686
               *
11292          KM    URS 2009

11293          KK     A31
11294          KM        Runoff from A31
11295          BA   0.538
11296          LG    0.34    0.37    5.60    0.21       0
11297          UI       0      60     211     322     533     409     270     139      69      34
11298          UI      14      14       0       0       0       0       0       0       0       0
11299          UI       0       0       0       0       0       0       0       0       0       0
               *
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 LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

11300          KM    URS 2009

11301          KK  RCPA31
11302          KM        Route flow from CP A31 to CP A32
11303          RS       8    FLOW      -1
11304          RC   0.050   0.045   0.050    7801  0.0067
11305          RX     124     215     264     436     505     610     670     684
11306          RY  1014.8  1014.8  1014.0  1014.0  1014.8  1016.0  1016.0  1016.0
               *

11307          KK   DRA21
11308          KM      Return diverted flow from CP A21
11309          DR   DVA21
               *
11310          KM    URS 2009

11311          KK   RDA21
11312          KM        Route diverted flow from CP A21 to CP A32
11313          RS      14    FLOW      -1
11314          RC   0.050   0.045   0.050   17399  0.0074
11315          RX       0     602     671     746     781     798     838    1440
11316          RY  1078.7  1078.5  1078.0  1078.0  1078.4  1078.5  1078.4  1078.8
               *

11317          KK   DRA20
11318          KM      Return diverted flow from CP A20
11319          DR   DVA20
               *

11320          KK   RDA20
11321          KM        Route diverted flow from CP A20 to CP A32
11322          RS      17    FLOW      -1
11323          RC   0.050   0.045   0.050   11360   0.007
11324          RX     0.0    11.0    29.0   202.0   231.0   310.0   369.0   412.0
11325          RY  1072.0  1072.0  1071.7  1070.0  1070.9  1071.3  1072.0  1072.0
               *
11326          KM    URS 2009

11327          KK     A32
11328          KM        Runoff from A32
11329          BA   1.207
11330          LG    0.35    0.39    5.70    0.20       0
11331          UI       0     111     420     633    1038     977     663     419     186     114
11332          UI      43      30      30       0       0       0       0       0       0       0
11333          UI       0       0       0       0       0       0       0       0       0       0
               *
11334          KM    URS 2009

11335          KK  CPA32A
11336          KM        Combine DRA21, DRA20 with A32
11337          HC       3   2.533
               *
11338          KM    URS 2009
1                                                HEC-1 INPUT                                                PAGE284

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

11339          KK   CPA32
11340          KM        Combine A31 with A32
11341          HC       2   3.071
               *
11342          KM    URS 2009

11343          KK  RCPA32
11344          KM        Route flow from CP A32 to CP A52
11345          RS       1    FLOW      -1
11346          RC   0.050   0.045   0.050    1533  0.0052
11347          RX       0    1216    1230    1367    1400    1440    1450    2460
11348          RY  1002.6  1000.0  1000.1  1002.0  1002.0  1002.0  1002.0  1003.0
               *

11349          KK   CPA52
11350          KM        Combine A32 with A52
11351          HC       2  13.757
               *
11352          KM    URS 2009
```

```
11353          KK  RCPA52
11354          KM       Route flow from CP A52 to CP A55
11355          RS       2    FLOW      -1
11356          RC   0.050   0.045   0.050    1963  0.0051
11357          RX       0     785     823     862     897     932    1002    2568
11358          RY   996.5   994.5   994.0   992.7   994.0   995.3   995.3   997.2
               *
11359          KM    URS 2009

11360          KK     A53
11361          KM        Runoff from A53
11362          KM        Customized XKSAT Values
11363          BA   1.746
11364          LG    0.35    0.35    3.07    0.86       0
11365          UI       0     294     939    1628    1859    1113     520     237      81      56
11366          UI       0       0       0       0       0       0       0       0       0       0
               *
11367          KM    URS 2009

11368          KK     A54
11369          KM        Runoff from A54
11370          KM        Customized XKSAT Values
11371          BA   0.507
11372          LG    0.35    0.35    3.33    0.71      19
11373          UI       0     184     551     741     340     104      26       0       0       0
               *
11374          KM    URS 2009

11375          KK   CPA54
11376          KM        COMBINE A53 WITH A54
11377          HC       2   2.253
               *
11378          KM    URS 2009
```



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

11379          KK  RCPA54
11380          KM       Route flow from CP A54 to CP A55
11381          RS       3    FLOW      -1
11382          RC   0.050   0.045   0.050    3855  0.0052
11383          RX       0     145     197     234     297     400     450     564
11384          RY  1004.0  1002.0   999.9  1000.6  1001.7  1001.7  1001.7  1001.8
               *
11385          KM    URS 2009

11386          KK     A55
11387          KM        Runoff from A55
11388          KM        Customized XKSAT Values
11389          BA   0.613
11390          LG    0.35    0.35    3.67    0.56       1
11391          UI       0     211     622     903     441     133      39       0       0       0
               *
11392          KM    URS 2009

11393          KK  CPA55A
11394          KM        Combine A54 with A55
11395          HC       2   2.866
               *
11396          KM    URS 2009

11397          KK   CPA55
11398          KM        Combine A52 with A55
11399          HC       2  16.623
               *
11400          KM    URS 2009

11401          KK  RCPA55
11402          KM       Route flow from CP A55 to CP A56
11403          RS       6    FLOW      -1
11404          RC   0.050   0.045   0.050    9154  0.0048
11405          RX       0      56     221     485     500     558     748     760
11406          RY   977.8   976.9   975.9   975.6   975.6   976.0   976.8   976.8
               *
11407          KM    URS 2009

11408          KK     A56
11409          KM        Runoff from A56
11410          BA   1.839
11411          LG    0.35    0.35    4.45    0.37      13
11412          UI       0     292     948    1596    1987    1208     611     266     107      58
11413          UI       0       0       0       0       0       0       0       0       0       0
               *
11414          KM    URS 2009

11415          KK   CPA56
11416          KM        Combine A55 with A56
11417          HC       2  18.462
               *
```



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

11418          KK  A56RIV
11419          KM        Combine A51RIV with A56
11420          HC       2 404.960
               *

11421          KK  RCPA56
11422          KM       Route flow in Waterman Wash from CP A56RIV TO CP I63RIV (WATERMAN WASH)
11423          KM    URS 2009
11424          RS       1    FLOW      -1
11425          RC   0.050   0.035   0.050    1891  0.0046
```

```
11426          RX      48    1592    1688    1815    1876    1929    1940    2448
11427          RY   945.0   939.0   937.4   942.3   944.3   946.0   946.0   948.0
               *
11428          KM    URS 2009

11429          KK     I51
11430          KM        Runoff subbasin I51
11431          BA   0.144
11432          LG    0.25    0.31    4.30    0.50       0
11433          UI       0     172     324      53       0       0       0       0       0
               *
11434          KM    URS 2009

11435          KK  RCPI51
11436          KM        Route flow from CP I51 to CP I53
11437          RS       3    FLOW      -1
11438          RC   0.050   0.045   0.050    4034  0.0134
11439          KM       Typical Sheet Flow Route
11440          RX       0     500     700     750     800     900    1100    1600
11441          RY       6       4       2       0       0       2       4       6
               *
11442          KM    URS 2009

11443          KK     I53
11444          KM        Runoff subbasin I53
11445          BA   0.515
11446          LG    0.15    0.27    4.25    0.61       0
11447          UI       0     433    1104     383      60       0       0       0       0       0
               *

11448          KK   CPI53
11449          KM        Combine I51 with I53
11450          HC       2   0.659
               *
11451          KM    URS 2009

11452          KK  RCPI53
11453          KM        Route flow from CP I53 to CP I55
11454          RS       3    FLOW      -1
11455          RC   0.050   0.045   0.050    5589  0.0107
11456          KM       Typical Sheet Flow Route
11457          RX       0     500     700     750     800     900    1100    1600
11458          RY       6       4       2       0       0       2       4       6
               *
```



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

11459          KM    URS 2009

11460          KK     I55
11461          KM        Runoff subbasin I55
11462          BA   0.249
11463          LG    0.30    0.33    4.10    0.50       0
11464          UI       0     207     532     189      30       0       0       0       0       0
               *

11465          KK   CPI55
11466          KM        Combine I53 with I55
11467          HC       2   0.908
               *
11468          KM    URS 2009

11469          KK  RCPI55
11470          KM        Route flow from CP I55 to CP I57
11471          RS       2    FLOW      -1
11472          RC   0.050   0.045   0.050    3210  0.0093
11473          KM       Typical Sheet Flow Route
11474          RX       0     500     700     750     800     900    1100    1600
11475          RY       6       4       2       0       0       2       4       6
               *
11476          KM    URS 2009

11477          KK     I57
11478          KM        Runoff subbasin I57
11479          BA   0.190
11480          LG    0.35    0.35    4.70    0.30      23
11481          UI       0     287     397      46       0       0       0       0       0       0
               *

11482          KK   CPI57
11483          KM        Combine I55 with I57
11484          HC       2   1.098
               *
11485          KM    URS 2009

11486          KK  RCPI57
11487          KM        Route flow from CP I57 to CP I72
11488          RS       2    FLOW      -1
11489          RC   0.050   0.045   0.050    2914  0.0086
11490          KM       Typical Sheet Flow Route
11491          RX       0     500     700     750     800     900    1100    1600
11492          RY       6       4       2       0       0       2       4       6
               *
11493          KM    URS 2009

11494          KK     I72
11495          KM        Runoff subbasin I72
11496          BA   0.206
11497          LG    0.35    0.35    4.50    0.35      12
11498          UI       0     332     416      45       0       0       0       0       0       0
               *
```



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

```
11499          KK   CPI72
11500          KM        Combine I57 with I72
11501          HC       2   1.304
               *
11502          KM    URS 2009

11503          KK  RCPI72
11504          KM        Route flow from CP I72 to CP I60C
11505          RS       4     FLOW      -1
11506          RC   0.050   0.045   0.050    5793  0.0074
11507          KM       Typical Sheet Flow Route
11508          RX       0     500     700     750     800     900    1100    1600
11509          RY       6       4       2       0       0       2       4       6
               *
11510          KM    URS 2009

11511          KK    I60C
11512          KM        Runoff subbasin I60C
11513          BA   0.270
11514          LG    0.35    0.35    4.30    0.40       0
11515          UI       0     153     470     318      81      17       0       0       0       0
               *

11516          KK  CPI60C
11517          KM        Combine I60C with I72
11518          HC       2
               *
11519          KM    URS 2009

11520          KK    I59
11521          KM        Runoff subbasin I59
11522          BA   0.099
11523          LG    0.35    0.39    5.70    0.20      23
11524          UI       0     242     134       0       0       0       0       0       0       0
               *
11525          KM    URS 2009

11526          KK  RCPI59
11527          KM        Route flow from CP I59 to CP I60A
11528          RS      12     FLOW      -1
11529          RC   0.050   0.045   0.050    9289  0.0058
11530          KM       Typical Sheet Flow Route
11531          RX       0     500     700     750     800     900    1100    1600
11532          RY       6       4       2       0       0       2       4       6
               *
11533          KM    URS 2009

11534          KK    I60B
11535          KM        Runoff subbasin I60B
11536          BA   0.102
11537          LG    0.35    0.37    6.60    0.14      40
11538          UI       0     357       0       0       0       0       0       0       0       0
               *
11539          KM    URS 2009
```



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

11540          KK  RCI60B
11541          KM        Route flow from CP I60B to CP I60A
11542          RS       4     FLOW      -1
11543          RC   0.050   0.045   0.050    9401  0.0074
11544          KM       Typical Sheet Flow Route
11545          RX       0     500     700     750     800     900    1100    1600
11546          RY       6       4       2       0       0       2       4       6
               *
11547          KM    URS 2009

11548          KK    I60A
11549          KM        Runoff subbasin I60A
11550          BA   0.976
11551          LG    0.31    0.32    5.00    0.29      27
11552          UI       0     355    1060    1427     655     199      50       0       0       0
               *

11553          KK  CPI60B
11554          KM        Combine I60A, I59, I60 with I60C
11555          HC       4
               *

11556          KK     I52
11557          KM     URS 2009
11558          KM     Runoff subbasin I52
11559          BA   0.318
11560          LG    0.13    0.26    4.10    0.68       3
11561          UI       0     678     515       0       0       0       0       0       0       0
               *
11562          KM    URS 2009

11563          KK  RCPI52
11564          KM        Route flow from CP I52 to CP I54
11565          RS       3     FLOW      -1
11566          RC   0.050   0.045   0.050    5121  0.0162
11567          KM       Typical Sheet Flow Route
11568          RX       0     500     700     750     800     900    1100    1600
11569          RY       6       4       2       0       0       2       4       6
               *
11570          KM    URS 2009

11571          KK     I54
11572          KM        Runoff subbasin I54
11573          BA   0.352
11574          LG    0.11    0.25    4.00    0.73       0
11575          UI       0     792     537       0       0       0       0       0       0       0
```

```
                    *

11576               KK   CPI54
11577               KM        Combine I52 with I54
11578               HC       2   0.613
                    *
11579               KM    URS 2009
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 LINE               ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


11580               KK  RCPI54
11581               KM        Route flow from CP I54 to CP I56
11582               RS       3    FLOW      -1
11583               RC   0.050   0.045   0.050    5373  0.0114
11584               KM       Typical Sheet Flow Route
11585               RX       0     500     700     750     800     900    1100    1600
11586               RY       6       4       2       0       0       2       4       6
                    *
11587               KM    URS 2009

11588               KK     I56
11589               KM        Runoff subbasin I56
11590               BA   0.432
11591               LG    0.27    0.32    4.10    0.53       0
11592               UI       0     417     958     257      37       0       0       0       0       0
                    *

11593               KK   CPI56
11594               KM        Combine I54 with I56
11595               HC       2   1.045
                    *
11596               KM    URS 2009

11597               KK  RCPI56
11598               KM        Route flow from CP I56 to CP I58B
11599               RS      10    FLOW      -1
11600               RC   0.050   0.045   0.050   11740  0.0080
11601               RX       0     188     231     367     386     484     647     764
11602               RY  1079.6  1076.5  1076.0  1076.0  1076.1  1076.1  1077.1  1077.6
                    *
11603               KM    URS 2009

11604               KK    I58B
11605               KM        Runoff subbasin I58B
11606               BA   0.585
11607               LG    0.35    0.35    4.35    0.39       9
11608               UI       0     211     628     857     397     120      31       0       0       0
                    *

11609               KK  CPI58B
11610               KM        Combine I56 with I58B
11611               HC       2
                    *
11612               KM    URS 2009

11613               KK  RCI58B
11614               KM        Route flow from CP I58B to CP I58A
11615               RS       9    FLOW      -1
11616               RC   0.050   0.045   0.050    3103  0.0071
11617               RX       0      75     125     187     200     210     218     386
11618               RY  1031.3  1031.2  1031.1  1030.0  1030.0  1030.0  1030.2  1033.4
                    *
11619               KM    URS 2009
1                                          HEC-1 INPUT                                                    PAGE291

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


11620               KK    I58A
11621               KM        Runoff subbasin I58A
11622               BA   0.129
11623               LG    0.35    0.39    6.20    0.16      27
11624               UI       0     191     272      32       0       0       0       0       0       0
                    *

11625               KK  CPI58A
11626               KM        Combine I58B with I58A
11627               HC       2   1.790
                    *
11628               KM    URS 2009

11629               KK  RCI58A
11630               KM        Route flow from CP I58A to CP I64
11631               RS       9    FLOW      -1
11632               RC   0.050   0.045   0.050    1040  0.0058
11633               KM       Typical Sheet Flow Small Wash
11634               RX       0     600     700     706     711     717     817    1417
11635               RY       6       4       3       0       0       3       4       6
                    *
11636               KM    URS 2009

11637               KK     I64
11638               KM        Runoff subbasin I64
11639               BA   0.267
11640               LG    0.31    0.30    6.60    0.15      32
11641               UI       0     349     591      81       0       0       0       0       0       0
                    *
11642               KM    URS 2009

11643               KK   CPI64
11644               KM        Combine I58, with I64
11645               HC       2
                    *
11646               KM    URS 2009
```

```
11647          KK  RCPI64
11648          KM        Route flow from CP I64 to CP I65
11649          RS       3    FLOW      -1
11650          RC   0.050   0.045   0.050    3559  0.0062
11651          RX       0     140     253     353     391     441     499     536
11652          RY  1009.4  1009.4  1009.2  1008.5  1008.3  1009.0  1009.6  1010.0
               *
11653          KM    URS 2009

11654          KK     I65
11655          KM        Runoff subbasin I65
11656          BA   0.307
11657          LG    0.34    0.36    5.20    0.25       7
11658          UI       0     217     613     287      56       0       0       0       0       0
               *
1                                          HEC-1 INPUT                                                PAGE292

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

11659          KK   CPI65
11660          KM        Combine I64 with I65
11661          HC       2   2.792
               *

11662          KK  CPI60A
11663          KM        COMBINE I65 WITH I60
11664          HC       2   5.120
               *
11665          KM    URS 2009

11666          KK  RCI60A
11667          KM        Route flow from CP I60A to CP I66
11668          RS       1    FLOW      -1
11669          RC   0.050   0.045   0.050    2269  0.0031
11670          RX       0    1131    1168    1321    1374    1419    1584    2623
11671          RY   995.3   994.0   993.8   992.6   992.0   992.0   994.9   995.5
               *
11672          KM    URS 2009

11673          KK     I66
11674          KM        Runoff subbasin I66
11675          BA   0.907
11676          LG    0.34    0.38    5.70    0.20      25
11677          UI       0     386    1204    1255     480     131      45       0       0       0
               *

11678          KK   CPI66
11679          KM        Combine I60 with I66
11680          HC       2   6.027
               *
11681          KM    URS 2009

11682          KK  RCPI66
11683          KM        Route flow from CP I66 to CP I67
11684          RS       3    FLOW      -1
11685          RC   0.050   0.045   0.050    5800  0.0040
11686          RX       0    2068    2180    2201    2309    2356    2454    4485
11687          RY   980.0   978.0   976.8   976.7   978.0   978.4   978.9   980.1
               *
11688          KM    URS 2009

11689          KK     I67
11690          KM        Runoff subbasin I67
11691          BA   0.970
11692          LG    0.35    0.36    5.10    0.26      14
11693          UI       0     489    1542    1224     376      87       0       0       0       0
               *
11694          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE293

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

11695          KK     I68
11696          KM        Runoff subbasin I68
11697          BA   0.292
11698          LG    0.35    0.35    4.55    0.34      17
11699          UI       0     242     623     222      35       0       0       0       0       0
               *
11700          KM    URS 2009

11701          KK     I69
11702          KM        Runoff subbasin I69
11703          BA   0.173
11704          LG    0.35    0.35    4.40    0.37      17
11705          UI       0     261     362      42       0       0       0       0       0       0
               *

11706          KK   CPI67
11707          KM        COMBINE I69, I68, RCPI66 WITH I67
11708          HC       4   7.461
               *
11709          KM    URS 2009

11710          KK  RCPI67
11711          KM        Route flow from CP I67 to CP I70
11712          RS       3    FLOW      -1
11713          RC   0.050   0.045   0.050    5357  0.0052
11714          RX       0     155     233     255     337     509     518     692
11715          RY   954.4   952.5   952.8   952.9   953.0   955.7   955.9   956.9
               *
11716          KM    URS 2009

11717          KK     I70
```

```
11718          KM        Runoff subbasin I70
11719          BA   0.368
11720          LG    0.35    0.35    4.90    0.28      12
11721          UI       0     203     631     440     116      25       0       0       0       0
               *
11722          KM    URS 2009

11723          KK     I71
11724          KM        Runoff subbasin I71
11725          BA   0.421
11726          LG    0.35    0.35    4.50    0.35      16
11727          UI       0     389     926     269      40       0       0       0       0       0
               *

11728          KK   CPI70
11729          KM        Combine I70, CPI69 with I71
11730          HC       3   8.250
               *
11731          KM    URS 2009
1                                          HEC-1 INPUT                                                PAGE294

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

11732          KK  RCPI71
11733          KM        Route flow from CP I71 to CP I63
11734          RS       1    FLOW      -1
11735          RC   0.050   0.045   0.050    1255  0.0032
11736          RX      99     288     394     465     542     563     590     653
11737          RY   930.8   932.0   926.5   927.0   930.4   932.4   935.1   936.0
               *
11738          KM    URS 2009

11739          KK     I63
11740          KM        Runoff subbasin I63
11741          BA   0.293
11742          LG    0.31    0.29    4.60    0.36       6
11743          UI       0     169     518     339      85      17       0       0       0       0
               *

11744          KK   CPI63
11745          KM        Combine I71 with I63
11746          HC       2   8.543
               *

11747          KK  I63RIV
11748          KM        Combine A56RIV with I63
11749          HC       2 413.504
               *

11750          KK  RCPI63
11751          KM        Route flow in Waterman Wash from CP I63RIV TO CP A57RIV (WATERMAN WASH)
11752          KM    URS 2009
11753          RS       1    FLOW      -1
11754          RC   0.050   0.035   0.050    4641  0.0046
11755          RX       0    1280    1384    1458    1536    1554    1582    2645
11756          RY   932.4   932.0   926.6   927.1   930.5   932.3   935.1   937.0
               *
11757          KM    URS 2009

11758          KK     A57
11759          KM        Runoff from A57
11760          BA   1.469
11761          LG    0.41    0.31    4.50    0.43      33
11762          UI       0     184     628     975    1545    1071     685     297     165      59
11763          UI      41       0       0       0       0       0       0       0       0       0
               *

11764          KK  A57RIV
11765          KM        Combine I63RIV with A57
11766          HC       2 414.972
               *
1                                          HEC-1 INPUT                                                PAGE295

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

11767          KK  RCPA57
11768          KM        Route flow in Waterman Wash from CP A57RIV TO CP A60RIV (WATERMAN WASH)
11769          KM      URS 2009
11770          RS       3    FLOW      -1
11771          RC   0.050   0.035   0.050    7515  0.0019
11772          RX     0.0  1599.0  1617.0  1683.0  2256.0  2294.0  2334.0  3033.0
11773          RY   935.5   932.0   926.6   927.1   930.5   932.3   935.1   939.0
               *
11774          KM    URS 2009

11775          KK     A58
11776          KM        Runoff from A58
11777          BA   2.131
11778          LG    0.35    0.35    4.00    0.46      23
11779          UI       0     218     792    1201    1998    1664    1115     644     300     163
11780          UI      56      56       0       0       0       0       0       0       0       0
               *
11781          KM    URS 2009

11782          KK     A59
11783          KM        Runoff from A59
11784          BA   1.255
11785          LG    0.35    0.35    4.35    0.39      26
11786          UI       0     339    1002    1742    1080     444     164      50       0       0
               *

11787          KK   CPA59
11788          KM        COMBINE A58 WITH A59
11789          HC       2   3.387
```

```
                    *
11790               KM    URS 2009

11791               KK  RCPA59
11792               KM        Route flow from CP A59 to CP A60
11793               RS       2    FLOW      -1
11794               RC   0.050   0.045   0.050    6336  0.0096
11795               RX      73      76      82     212     298     451     485     529
11796               RY   920.1   920.0   919.6   912.9   914.1   916.7   919.5   922.3
                    *
11797               KM    URS 2009

11798               KK     A60
11799               KM        Runoff from A60
11800               BA   1.667
11801               LG    0.34    0.34    4.45    0.37      17
11802               UI       0     425    1267    2251    1476     654     254      64       0       0
                    *

11803               KK   CPA60
11804               KM        Combine A59 with A60
11805               HC       2   5.054
                    *
1                                                HEC-1 INPUT                                                PAGE296

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


11806               KK  A60RIV
11807               KM        Combine A57RIV with A60
11808               KM        Approxmately 2500 feet upstream of Eagle Mt. Rd. and 125th Av. intersect
11809               HC       2 420.026
                    *
11810               KM    URS 2009

11811               KK  RCPA60
11812               KM        Route flow in Waterman Wash from CP A60RIV to CP A62RIV (WATERMAN WASH)
11813               RS       1    FLOW      -1
11814               RC   0.050   0.035   0.050    4604  0.0054
11815               RX       0     126     196     250     321     402     576     577
11816               RY   895.3   891.2   887.0   881.0   880.0   881.6   885.7   885.7
                    *
11817               KM    URS 2009

11818               KK     A61
11819               KM        Runoff from A61
11820               BA   1.964
11821               LG    0.33    0.32    4.45    0.37      10
11822               UI       0     264     888    1401    2112    1393     852     354     193      57
11823               UI      57       0       0       0       0       0       0       0       0       0
                    *
11824               KM    URS 2009

11825               KK     A62
11826               KM        Runoff from A62
11827               BA   0.288
11828               LG    0.31    0.29    4.10    0.45       5
11829               UI       0     124     387     396     150      41      14       0       0       0
                    *

11830               KK  A62RIV
11831               KM        Combine A61, A62 with A60RIV
11832               HC       3 422.194
                    *
11833               ZZ
1
            SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   41          C04
                V
                V
   50       RCPC04
                .
                .
   57           .         C12
                .           .
                .           .
   67        CPC12............
                .
                .
   73           .-------->   DVC12
   70         DC12
                V
                V
   76       RCPC12
                .
                .
   83           .         C13
                .           .
                .           .
   94        CPC13............
                .
                .
  103           .-------->   DVC13
   97         DC13
                V
                V
  106       RCPC13
                .
                .
  113           .         C11
                .           .
```

```
                .           .
126             .           .------->   DVC11
123             .        DC11
                .           V
                .           V
129             .      RCPC11
                .           .
                .           .
138             .           .           .<-------   DVC12
136             .           .       DRC12
                .           .           V
                .           .           V
139             .           .       RDC12
                .           .           .
                .           .           .
146             .           .           .         C31
                .           .           .           .
                .           .           .           .
156        CPC31.................................
                .
                .
166             .------->   DVC31
160         DC31
                V
                V
169       RCPC31
                .
                .
178             .           .<-------   DVC11
176             .       DRC11
                .           V
                .           V
179             .       RDC11
                .           .
                .           .
186             .           .         C14
                .           .           .
                .           .           .
196        CPC14......................
                .
                .
206             .------->   DVC14
200         DC14
                V
                V
209       RCPC14
                .
                .
216             .         C05
                .           V
                .           V
225             .      RCPC05
                .           .
                .           .
232             .           .         C03
                .           .           .
                .           .           .
244             .           .           .------->   DVC03
241             .           .        DC03
                .           .           V
                .           .           V
247             .           .      RCPC03
                .           .           .
                .           .           .
254             .           .           .         C09
                .           .           .           .
                .           .           .           .
264             .           .       CPC09............
                .           .           .
                .           .           .
270             .           .           .------->   DVC09
267             .           .        DC09
                .           .           V
                .           .           V
273             .           .      RCPC09
                .           .           .
                .           .           .
280             .           .           .         C15
                .           .           .           .
                .           .           .           .
289             .           .       CPC15............
                .           .           .
                .           .           .
295             .           .           .------->   DVC15
292             .           .        DC15
                .           .           V
                .           .           V
298             .           .      RCPC15
                .           .           .
                .           .           .
305             .           .           .         C10
                .           .           .           .
                .           .           .           .
315        CPC10.................................
                .
                .
325             .------->   DVC10
319         DC10
                V
                V
328       RCPC10
                .
                .
337             .           .<-------   DVC03
335             .       DRC03
                .           V
```

```
                 .          V
338              .       RDC03
                 .          .
                 .          .
345              .          .         C06
                 .          .          .
                 .          .          .
354              .       CPC06...........
                 .          .
                 .          .
360              .          .-------->   DVC06
357              .        DC06
                 .          V
                 .          V
363              .      RCPC06
                 .          .
                 .          .
372              .          .          .<-------   DVC09
370              .          .       DRC09
                 .          .          V
                 .          .          V
373              .          .       RDC09
                 .          .          .
                 .          .          .
380              .          .          .         C16
                 .          .          .          .
                 .          .          .          .
390              .       CPC16......................
                 .          V
                 .          V
393              .      RCPC16
                 .          .
                 .          .
402              .          .          .<-------   DVC06
400              .          .       DRC06
                 .          .          V
                 .          .          V
403              .          .       RDC06
                 .          .          .
                 .          .          .
410              .          .          .         C18
                 .          .          .          .
                 .          .          .          .
419              .          .       CPC18...........
                 .          .          .
                 .          .          .
425              .          .          .-------->   DVC18
422              .          .        DC18
                 .          .          V
                 .          .          V
428              .          .      RCPC18
                 .          .          .
                 .          .          .
435              .          .          .         C17
                 .          .          .          .
                 .          .          .          .
445              .          .       CPC17...........
                 .          .          .
                 .          .          .
451              .          .          .-------->   DVC17
448              .          .        DC17
                 .          .          V
                 .          .          V
454              .          .      RCPC17
                 .          .          .
                 .          .          .
463              .          .          .          .<-------   DVC15
461              .          .          .       DRC15
                 .          .          .          V
                 .          .          .          V
464              .          .          .       RDC15
                 .          .          .          .
                 .          .          .          .
471              .          .          .          .         C30
                 .          .          .          .          .
                 .          .          .          .          .
480         CPC30.............................................
                 .
                 .
490              .-------->   DVC30
484         DC30
                 V
                 V
493         RCPC30
                 .
                 .
500              .         C02
                 .          V
                 .          V
509              .      RCPC02
                 .          .
                 .          .
516              .          .         C01
                 .          .          V
                 .          .          V
525              .          .      RCPC01
                 .          .          .
                 .          .          .
532              .          .          .         C08
                 .          .          .          V
                 .          .          .          V
541              .          .          .      RCPC08
                 .          .          .          .
                 .          .          .          .
548              .          .          .          .         C07
                 .          .          .          .          .
```

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                .         .         .         .         .
557             .      CPC07.................................
                .         .
                .         .
563             .         .------->   DVC07
560             .       DC07
                .         V
                .         V
566             .     RCPC07
                .         .
                .         .
575             .         .         .<-------   DVC18
573             .         .      DRC18
                .         .         V
                .         .         V
576             .         .      RDC18
                .         .         .
                .         .         .
583             .         .         .         C19
                .         .         .           .
                .         .         .           .
593             .      CPC19......................
                .         .
                .         .
599             .         .------->   DVC19
596             .       DC19
                .         V
                .         V
602             .     RCPC19
                .         .
                .         .
611             .         .         .<-------   DVC17
609             .         .      DRC17
                .         .         V
                .         .         V
612             .         .      RDC17
                .         .         .
                .         .         .
619             .         .         .         C29
                .         .         .           .
                .         .         .           .
629       CPC29.................................
                .
                .
639             .------->   DVC29
633       DC29
                V
                V
642      RCPC29
                .
                .
649             .        C28
                .         .
                .         .
658       CPC28...........
                .
                .
668             .------->   DVC28
662       DC28
                V
                V
671      RCPC28
                .
                .
680             .         .<-------   DVC19
678             .      DRC19
                .         V
                .         V
681             .      RDC19
                .         .
                .         .
688             .         .        C27
                .         .         .
                .         .         .
698       CPC27......................
                .
                .
708             .------->   DVC27
702       DC27
                V
                V
711      RCPC27
                .
                .
720             .         .<-------   DVC07
718             .      DRC07
                .         V
                .         V
721             .      RDC07
                .         .
                .         .
728             .         .        C21
                .         .         .
                .         .         .
741             .         .         .------->   DVC21
738             .         .       DC21
                .         .         V
                .         .         V
744             .         .     RCPC21
                .         .         .
                .         .         .
751             .         .         .         C20
                .         .         .           .
                .         .         .           .
761       CPC20.................................
                .
```

```
                .
771             .------->   DVC20
765          DC20
                V
                V
774         RCPC20
                .
                .
781             .         C26
                .           .
                .           .
791          CPC26............
                .
                .
801             .------->   DVC26
795          DC26
                V
                V
804         RCPC26
                .
                .
813             .           .<-------   DVC21
811             .       DRC21
                .         V
                .         V
814             .       RDC21
                .           .
                .           .
821             .           .         C23
                .           .           V
                .           .           V
831             .           .      RCPC23
                .           .           .
                .           .           .
838             .           .           .         C22
                .           .           .           .
                .           .           .           .
848          CPC22...................................
                .
                .
852             .         C24
                .           .
                .           .
862          CPC24............
                V
                V
866         PNDC01
                .
                .
880             .------->   DVC24
874          DC24
                V
                V
883         RCPC24
                .
                .
891             .         C25
                .           .
                .           .
901          CPC25............
                V
                V
907         PNDC02
                .
                .
921             .------->   DVC25
915          DC25
                V
                V
924         RCPC25
                .
                .
930             .         D02
                .           .
                .           .
943             .           .------->   DVD02
940             .       DD02
                .         V
                .         V
946             .     RCPD02
                .           .
                .           .
953             .           .         D03
                .           .           .
                .           .           .
964             .      CPD03............
                .           .
                .           .
970             .           .------->   DVD03
967             .       DD03
                .         V
                .         V
973             .     RCPD03
                .           .
                .           .
980             .           .         D04
                .           .           .
                .           .           .
991             .      CPD04............
                .           .
                .           .
997             .           .------->   DVD04
994             .       DD04
                .         V
                .         V
1000            .     RCPD04
```

```
                .           .
                .           .
1009            .           .<-------   DVD02
1007            .           .       DRD02
                .           .           V
                .           .           V
1010            .           .       RDD02
                .           .           .
                .           .           .
1019            .           .           .<-------   DVD03
1017            .           .           .       DRD03
                .           .           .           V
                .           .           .           V
1020            .           .           .       RDD03
                .           .           .           .
                .           .           .           .
1027            .           .           .           .         D01
                .           .           .           .           .
                .           .           .           .           .
1038            .       CPD01.................................
                .           .
                .           .
1044            .           .------->   DVD01
1041            .        DD01
                .           V
                .           V
1047            .       RDD01
                .           .
                .           .
1053            .           .         D09
                .           .           .
                .           .           .
1063         CPD09......................
                .
                .
1073            .------->   DVD09
1067         DD09
                V
                V
1076        RCPD09
                .
                .
1083            .         D12
                .           .
                .           .
1092         CPD12............
                .
                .
1102            .------->   DVD12
1096         DD12
                V
                V
1105        RCPD12
                .
                .
1114            .           .<-------   DVD01
1112            .       DRD01
                .           V
                .           V
1115            .      RCPD01
                .           .
                .           .
1124            .           .           .<-------   DVD04
1122            .           .       DRD04
                .           .           V
                .           .           V
1125            .           .       RDD04
                .           .           .
                .           .           .
1132            .           .           .         D05
                .           .           .           .
                .           .           .           .
1143            .       CPD05......................
                .           .
                .           .
1150            .           .------->   DVD05
1146            .        DD05
                .           V
                .           V
1153            .       RDD05
                .           .
                .           .
1159            .           .         D13
                .           .           .
                .           .           .
1168         CPD13......................
                .
                .
1178            .------->   DVD13
1172         DD13
                V
                V
1181        RCPD13
                .
                .
1188            .         D46
                .           .
                .           .
1198         CPD46............
                .
                .
1207            .------->   DVD46
1201         DD46
                V
                V
1210        RCPD46
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                .
                .
1217            .         D06
                .           .
                .           .
1230            .           .-------->   DVD06
1227            .        DD06
                .           V
                .           V
1233            .      RCPD06
                .           .
                .           .
1242            .           .           .<-------   DVD06
1240            .           .      DRD06
                .           .           V
                .           .           V
1243            .           .      RDD06
                .           .           .
                .           .           .
1250            .           .           .         D08
                .           .           .           .
                .           .           .           .
1261            .           .      CPD08............
                .           .           V
                .           .           V
1264            .           .     RCPD08
                .           .           .
                .           .           .
1273            .           .           .           .<-------   DVD05
1271            .           .           .      DRD05
                .           .           .           V
                .           .           .           V
1274            .           .           .     RCPD05
                .           .           .           .
                .           .           .           .
1281            .           .           .           .         D11
                .           .           .           .           .
                .           .           .           .           .
1291            .           .           .      CPD11............
                .           .           .           V
                .           .           .           V
1294            .           .           .     RCPD11
                .           .           .           .
                .           .           .           .
1301            .           .           .           .         D10
                .           .           .           .           .
                .           .           .           .           .
1312        CPD10..............................................
                .
                .
1321            .-------->   DVD10
1315         DD10
                V
                V
1324        RCPD10
                .
                .
1331            .         D47
                .           .
                .           .
1341         CPD47............
                .
                .
1351            .-------->   DVD47
1345         DD47
                V
                V
1354        RCPD47
                .
                .
1361            .         D07
                .           .
                .           .
1374            .           .-------->   DVD07
1371            .        DD07
                .           V
                .           V
1377            .       RDD07
                .           .
                .           .
1384            .           .         D15
                .           .           .
                .           .           .
1393         CPD15........................
                .
                .
1403            .-------->   DVD15
1397         DD15
                V
                V
1406        RCPD15
                .
                .
1415            .           .<-------   DVD07
1413            .       DRD07
                .           V
                .           V
1416            .      RCPD07
                .           .
                .           .
1423            .           .         D17
                .           .           .
                .           .           .
1434         CPD17........................
                .
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1443          .------->   DVD17
1437       DD17
              V
              V
1446      RCPD17
              .
              .
1453          .         D18
              .           .
              .           .
1463       CPD18............
              .
              .
1473          .------->   DVD18
1467       DD18
              V
              V
1476      RCPD18
              .
              .
1483          .         D19
              .           .
              .           .
1493       CPD19............
              .
              .
1503          .------->   DVD19
1497       DD19
              V
              V
1506      RCPD19
              .
              .
1513          .         D20
              .           .
              .           .
1523       CPD20............
              .
              .
1533          .------->   DVD20
1527       DD20
              V
              V
1536      RCPD20
              .
              .
1543          .         D21
              .           .
              .           .
1553       CPD21............
              .
              .
1563          .------->   DVD21
1557       DD21
              V
              V
1566      RCPD21
              .
              .
1573          .         E33
              .           .
              .           .
1584       CPE33............
              .
              .
1593          .------->   DVE33
1587       DE33
              V
              V
1596      RCPE33
              .
              .
1603          .         E17
              .           V
              .           V
1613          .      RCPE17
              .           .
              .           .
1620          .           .         E32
              .           .           .
              .           .           .
1631       CPE32........................
              .
              .
1640          .------->   DVE32
1634       DE32
              V
              V
1643      RCPE32
              .
              .
1650          .         E53
              .           .
              .           .
1661       CPE53............
              .
              .
1670          .------->   DVE53
1664       DE53
              V
              V
1673      RCPE53
              .
              .
1680          .         E18
              .           V
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                 .          V
1690             .      RCPE18
                 .          .
                 .          .
1697             .          .         E31
                 .          .           .
                 .          .           .
1707         CPE31.......................
                 .
                 .
1716             .------->   DVE31
1710          DE31
                 V
                 V
1719        RCPE31
                 .
                 .
1726             .         E01
                 .          V
                 .          V
1735             .      RCPE01
                 .          .
                 .          .
1742             .          .         E02
                 .          .           .
                 .          .           .
1751             .       CPE02............
                 .          V
                 .          V
1754             .      RCPE02
                 .          .
                 .          .
1761             .          .         E03
                 .          .           .
                 .          .           .
1771             .       CPE03............
                 .          V
                 .          V
1774             .      RCPE03
                 .          .
                 .          .
1781             .          .         E16
                 .          .           .
                 .          .           .
1791             .       CPE16............
                 .          .
                 .          .
1797             .          .------->   DVE16
1794             .        DE16
                 .          V
                 .          V
1800             .       RDE16
                 .          .
                 .          .
1807             .          .         E19
                 .          .           .
                 .          .           .
1818             .       CPE19............
                 .          .
                 .          .
1824             .          .------->   DVE19
1821             .        DE19
                 .          V
                 .          V
1827             .       RDE19
                 .          .
                 .          .
1834             .          .         E30
                 .          .           .
                 .          .           .
1842         CPE30.......................
                 .
                 .
1852             .------->   DVE30
1846          DE30
                 V
                 V
1855        RCPE30
                 .
                 .
1862             .         E28
                 .          .
                 .          .
1874             .          .------->   DVE28
1871             .        DE28
                 .          V
                 .          V
1877             .      RCPE28
                 .          .
                 .          .
1884             .          .         E21
                 .          .           .
                 .          .           .
1897             .          .           .------->   DVE21
1894             .          .        DE21
                 .          .           V
                 .          .           V
1900             .          .       RDE21
                 .          .           .
                 .          .           .
1909             .          .           .         .<-------   DVE16
1907             .          .           .      DRE16
                 .          .           .          V
                 .          .           .          V
1910             .          .           .      RCPE16
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1917          .          .          .          .        E20
              .          .          .          .          .
              .          .          .          .          .
1927          .     CPE20.................................
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              .          .
1932          .          .          .<-------   DVE28
1930          .          .     DRE28
              .          .          V
              .          .          V
1933          .          .     RDE28
              .          .          .
              .          .          .
1942          .          .          .          .<-------   DVE19
1940          .          .          .     DRE19
              .          .          .          V
              .          .          .          V
1943          .          .          .    RCPE19
              .          .          .          .
              .          .          .          .
1950          .          .          .          .        E29
              .          .          .          .          .
              .          .          .          .          .
1959          .          .     CPE29A......................
              .          .          .
              .          .          .
1963          .     CPE29............
              .          V
              .          V
1966          .    RCPE29
              .          .
              .          .
1974          .          .       E07
              .          .          V
              .          .          V
1984          .          .    RCPE07
              .          .          .
              .          .          .
1991          .          .          .       E14
              .          .          .          V
              .          .          .          V
2000          .          .          .    RCPE14
              .          .          .          .
              .          .          .          .
2007          .          .          .          .        E15
              .          .          .          .          .
              .          .          .          .          .
2018          .          .     CPE15......................
              .          .          V
              .          .          V
2021          .          .    RCPE15
              .          .          .
              .          .          .
2028          .          .          .       E27
              .          .          .          V
              .          .          .          V
2037          .          .          .    RCPE27
              .          .          .          .
              .          .          .          .
2046          .          .          .          .          .<-------   DVE21
2044          .          .          .          .     DRE21
              .          .          .          .          V
              .          .          .          .          V
2047          .          .          .          .    RCPE21
              .          .          .          .          .
              .          .          .          .          .
2054          .          .          .          .          .        E22
              .          .          .          .          .          .
              .          .          .          .          .          .
2065          .          .     CPE22.................................
              .          .          V
              .          .          V
2068          .          .    RCPE22
              .          .          .
              .          .          .
2075          .          .          .       E37
              .          .          .          .
              .          .          .          .
2085          .          .     CPE37............
              .          .          V
              .          .          V
2088          .          .    RCPE37
              .          .          .
              .          .          .
2095          .          .          .       E04
              .          .          .          V
              .          .          .          V
2105          .          .          .    RCPE04
              .          .          .          .
              .          .          .          .
2112          .          .          .          .        E06
              .          .          .          .          V
              .          .          .          .          V
2122          .          .          .          .    RCPE06
              .          .          .          .          .
              .          .          .          .          .
2129          .          .          .          .          .        E11
              .          .          .          .          .          .
              .          .          .          .          .          .
2141          .          .          .          .          .          .------->   DVE11
2138          .          .          .          .          .       DE11
              .          .          .          .          .          V
              .          .          .          .          .          V
2144          .          .          .          .          .    RCPE11
              .          .          .          .          .          .
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2151                                                  E09
                                                       .
2164                                                   .-------> DVE09
2161                                                  DE09
                                                       V
                                                       V
2167                                                 RCPE09
                                                       .
2174                                                   .         E10
                                                       .          .
2185                                                  CPE10.......
                                                       .
2191                                                   .-------> DVE10
2188                                                  DE10
                                                       V
                                                       V
2194                                                 RCPE10
                                                       .
2201                                                   .         E05
                                                       .          .
2210                                         CPE05.................................
                                                       .
2217                                                   .-------> DVE05
2213                                          DE05
                                                       V
                                                       V
2220                                          RDE05
                                                       .
2229                                                   .<------- DVE09
2227                                                   .
                                              DRE09
                                                       V
                                                       V
2230                                          RDE09
                                                       .
2239                                                   .<------- DVE10
2237                                                   .
                                                  DRE10
                                                       V
                                                       V
2240                                                  RDE10
                                                       .
2247                                                   .         E13
                                                       .          .
2257                                                   .
                                              CPE13.................
                                                       .
2263                                                   .-------> DVE13
2260                                                   .
                                               DE13
                                                       V
                                                       V
2266                                             RCPE13
                                                       .
2273                                                   .         E24
                                                       .          .
2282                                          CPE24.................
                                                       V
                                                       V
2285                                         RCPE24
                                                       .
2292                                                   .         E08
                                                       V
                                                       V
2301                                             RCPE08
                                                       .
2310                                                   .<------- DVE13
2308                                                   .
                                                  DRE13
                                                       V
                                                       V
2311                                                  RDE13
                                                       .
2318                                                   .         E23
                                                       .          .
2328                                          CPE23.............................
                                                       V
                                                       V
2331                                         RCPE23
                                                       .
2338                                                   .         E34
                                                       .
2348                                          CPE34.......
                                                       V
                                                       V
2351                                         RCPE34
                                                       .
2358                                                   .         E38
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                .           .           .           .           .
2367      CPE38.............................................
                .
                .
2376            .------->   DVE38
2370       DE38
                V
                V
2379      RCPE38
                .
                .
2389            .           .<-------   DVE11
2387            .       DRE11
                .           V
                .           V
2390            .       RDE11
                .           .
                .           .
2396            .           .         E12
                .           .           .
                .           .           .
2406            .       CPE12............
                .           V
                .           V
2409            .      RCPE12
                .           .
                .           .
2418            .           .           .<-------   DVE05
2416            .           .      DRE05
                .           .           V
                .           .           V
2419            .           .     RCPE05
                .           .           .
                .           .           .
2426            .           .           .         E25
                .           .           .           .
                .           .           .           .
2436      CPE25...................................
                .
                .
2445            .------->   DVE25
2439       DE25
                V
                V
2448      RCPE25
                .
                .
2455            .         E26
                .           V
                .           V
2463            .      RCPE26
                .           .
                .           .
2470            .           .         E35
                .           .           .
                .           .           .
2478            .       CPE35............
                .           .
                .           .
2484            .           .------->   DVE35
2481            .        DE35
                .           V
                .           V
2487            .      RCPE35
                .           .
                .           .
2494            .           .         E36
                .           .           .
                .           .           .
2503      CPE36........................
                .
                .
2513            .------->   DVE36
2507       DE36
                V
                V
2516      RCPE36
                .
                .
2525            .           .<-------   DVE35
2523            .       DRE35
                .           V
                .           V
2526            .       RDE35
                .           .
                .           .
2533            .           .         E54
                .           .           .
                .           .           .
2542      CPE54........................
                .
                .
2552            .------->   DVE54
2546       DE54
                V
                V
2555      RCPE54
                .
                .
2562            .         F26
                .           .
                .           .
2572      CPF26............
                .
                .
2581            .------->   DVF26
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2575        DF26
              V
              V
2584      RCPF26
              .
              .
2591          .         F14
              .           V
              .           V
2601          .      RCPF14
              .           .
              .           .
2608          .           .         F13
              .           .           .
              .           .           .
2621          .           .           .-------->   DVF13
2618          .           .        DF13
              .           .           V
              .           .           V
2624          .           .       RDF13
              .           .           .
              .           .           .
2632          .           .           .          .<-------   DVF13
2630          .           .           .      DRF13
              .           .           .          V
              .           .           .          V
2633          .           .           .      RCPF13
              .           .           .           .
              .           .           .           .
2640          .           .           .           .         F12
              .           .           .           .           .
              .           .           .           .           .
2651          .           .           .      CPF12............
              .           .           .          V
              .           .           .          V
2654          .           .           .      RCPF12
              .           .           .           .
              .           .           .           .
2661          .           .           .           .         F15
              .           .           .           .           .
              .           .           .           .           .
2671          .       CPF15.................................
              .           V
              .           V
2674          .      RCPF15
              .           .
              .           .
2680          .           .         F11
              .           .           .
              .           .           .
2693          .           .           .-------->   DVF11
2690          .           .        DF11
              .           .           V
              .           .           V
2696          .           .       RCPF11
              .           .           .
              .           .           .
2703          .           .           .         F16
              .           .           .           .
              .           .           .           .
2712          .           .       CPF16............
              .           .           .
              .           .           .
2718          .           .           .-------->   DVF16
2715          .           .        DF16
              .           .           V
              .           .           V
2721          .           .       RDF16
              .           .           .
              .           .           .
2728          .           .           .         F25
              .           .           .           .
              .           .           .           .
2738      CPF25.................................
              .
              .
2743          .           .<-------   DVF11
2741          .       DRF11
              .           V
              .           V
2744          .       RDF11
              .           .
              .           .
2751          .           .         F17
              .           .           .
              .           .           .
2762          .       CPF17............
              .           V
              .           V
2765          .      RCPF17
              .           .
              .           .
2774          .           .           .<-------   DVF16
2772          .           .       DRF16
              .           .           V
              .           .           V
2775          .           .      RCPF16
              .           .           .
              .           .           .
2782          .           .           .         F24
              .           .           .           .
              .           .           .           .
2792          .       CPF24......................
              .           V
              .           V
2795          .      RCPF24
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                .           .
                .           .
2802            .           .        F23
                .           .          V
                .           .          V
2811            .           .      RCPF23
                .           .           .
                .           .           .
2818            .           .           .         F27
                .           .           .           .
                .           .           .           .
2827        CPF27.................................
                V
                V
2831       PNDF01
                .
                .
2846            .------->   DVF27
2839         DF27
                V
                V
2849       RCPF27
                .
                .
2856            .         F10
                .           V
                .           V
2866            .      RCPF10
                .           .
                .           .
2873            .           .         F18
                .           .           .
                .           .           .
2882            .       CPF18............
                .           .
                .           .
2889            .           .------->   DVF18
2886            .        DF18
                .           V
                .           V
2892            .      RCPF18
                .           .
                .           .
2899            .           .         F22
                .           .           .
                .           .           .
2909            .       CPF22............
                .           .
                .           .
2915            .           .------->   DVF22
2912            .        DF22
                .           V
                .           V
2918            .       RDF22
                .           .
                .           .
2924            .           .         F28
                .           .           .
                .           .           .
2934        CPF28......................
                V
                V
2937       PNDF02
                .
                .
2951            .------->  DVF28A
2945        DF28A
                .
                .
2960            .------->  DVF28B
2954        DF28B
                V
                V
2963       RCPF28
                .
                .
2970            .         F36
                .           .
                .           .
2977        CPF36............
                V
                V
2980       PNDF03
                V
                V
2988       RCPF36
                .
                .
2996            .        F02A
                .           V
                .           V
3006            .      RCF02A
                .           .
                .           .
3014            .           .         F02
                .           .           .
                .           .           .
3024            .       CPF02............
                .           .
                .           .
3030            .           .------->   DVF02
3027            .        DF02
                .           V
                .           V
3033            .      RCPF02
                .           .
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3039          .           .        F01A
              .           .          V
              .           .          V
3049          .           .      RCF01A
              .           .           .
              .           .           .
3057          .           .           .         F01
              .           .           .           .
              .           .           .           .
3067          .           .       CPF01............
              .           .          V
              .           .          V
3070          .           .      RCPF01
              .           .           .
              .           .           .
3076          .           .           .         F04
              .           .           .           .
              .           .           .           .
3087          .       CPF04........................
              .           V
              .           V
3090          .      RCPF04
              .           .
              .           .
3097          .           .        F03
              .           .          V
              .           .          V
3107          .           .      RCPF03
              .           .           .
              .           .           .
3114          .           .           .         F06
              .           .           .           .
              .           .           .           .
3124          .           .       CPF06............
              .           .          V
              .           .          V
3127          .           .      RCPF06
              .           .           .
              .           .           .
3136          .           .           .           .<-------   DVF02
3134          .           .           .       DRF02
              .           .           .           V
              .           .           .           V
3137          .           .           .       RDF02
              .           .           .           .
              .           .           .           .
3144          .           .           .           .         F05
              .           .           .           .           .
              .           .           .           .           .
3155          .       CPF05....................................
              .           V
              .           V
3158          .      RCPF05
              .           .
              .           .
3165          .           .        F07
              .           .          V
              .           .          V
3175          .           .      RCPF07
              .           .           .
              .           .           .
3182          .           .           .         F08
              .           .           .           .
              .           .           .           .
3193          .       CPF08........................
              .           V
              .           V
3196          .      RCPF08
              .           .
              .           .
3203          .           .        F09
              .           .           .
              .           .           .
3214          .       CPF09............
              .           V
              .           V
3217          .      RCPF09
              .           .
              .           .
3224          .           .        F19
              .           .           .
              .           .           .
3234          .       CPF19............
              .           .
              .           .
3240          .           .------->   DVF19
3237          .        DF19
              .           V
              .           V
3243          .       RDF19
              .           .
              .           .
3252          .           .           .<-------   DVF18
3250          .           .       DRF18
              .           .          V
              .           .          V
3253          .           .       RDF18
              .           .           .
              .           .           .
3260          .           .           .         F21
              .           .           .           .
              .           .           .           .
3270          .       CPF21........................
              .           V
              .           V
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3273          .      RCPF21
              .          .
              .          .
3282          .          .          .<-------   DVF22
3280          .          .      DRF22
              .          .          V
              .          .          V
3283          .          .     RCPF22
              .          .          .
              .          .          .
3290          .          .          .         F29
              .          .          .           .
              .          .          .           .
3300          .      CPF29.......................
              .          V
              .          V
3303          .      PNDF04
              .          .
              .          .
3317          .          .------->   DVF29
3311          .       DF29
              .          V
              .          V
3320          .      RCPF29
              .          .
              .          .
3330          .          .          .<-------   DVF19
3328          .          .      DRF19
              .          .          V
              .          .          V
3331          .          .     RCPF19
              .          .          .
              .          .          .
3338          .          .          .         F20
              .          .          .           .
              .          .          .           .
3347          .      CPF20.......................
              .          V
              .          V
3350          .      PNDF05
              .          V
              .          V
3360          .      RCPF20
              .          .
              .          .
3368          .          .        F31
              .          .          .
              .          .          .
3377          .          .          .         G21
              .          .          .           .
              .          .          .           .
3385          .          .          .           .         G20
              .          .          .           .           .
              .          .          .           .           .
3399          .          .          .           .         .------->   DVG20
3394          .          .          .           .       DG20
              .          .          .           .          V
              .          .          .           .          V
3402          .          .          .           .     RCPG20
              .          .          .           .           .
              .          .          .           .           .
3411          .      CPF31.....................................
              .          V
              .          V
3414          .      RCPF31
              .          .
              .          .
3423          .          .          .<-------   DVF29
3421          .          .      DRF29
              .          .          V
              .          .          V
3424          .          .     RDF29
              .          .          .
              .          .          .
3432          .          .          .         F32
              .          .          .           .
              .          .          .           .
3441          .      CPF32.......................
              .          .
              .          .
3446          .          .          .<-------   DVG20
3444          .          .      DRG20
              .          .          V
              .          .          V
3447          .          .      RDG20
              .          .          .
              .          .          .
3456          .          .          .         G19
              .          .          .           V
              .          .          .           V
3465          .          .          .     RCPG19
              .          .          .           .
              .          .          .           .
3473          .          .          .           .         G22
              .          .          .           .           .
              .          .          .           .           .
3483          .          .      CPG22.......................
              .          .          .
              .          .          .
3486     F32RIV.......................
              V
              V
3490     RCPF32
              .
              .
3500          .          .<-------  DVF28B
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3497          .      DRF28B
              .          V
              .          V
3501          .      RDF28B
              .          .
              .          .
3509          .          .         F33
              .          .          .
              .          .          .
3518          .       CPF33............
              .          .
              .          .
3521     F33RIV............
              V
              V
3525     RCPF33
              .
              .
3535          .          .<-------  DVF28A
3532          .      DRF28A
              .          V
              .          V
3536          .      RDF28A
              .          .
              .          .
3547          .          .          .<-------   DVF27
3544          .          .      DRF27
              .          .          .
              .          .          .
3552          .          .          .------->   DVF25
3548          .          .       DF25
              .          .          V
              .          .          V
3555          .          .      RDF27
              .          .          .
              .          .          .
3565          .          .          .           .<-------   DVF25
3563          .          .          .      DRF25
              .          .          .          V
              .          .          .          V
3566          .          .          .      RDF25
              .          .          .          .
              .          .          .          .
3574          .          .          .          .         F34
              .          .          .          .          .
              .          .          .          .          .
3584          .       CPF34...................................
              .          .
              .          .
3587          .          .         G23
              .          .          .
              .          .          .
3597     F34RIV........................
              V
              V
3600     RCPF34
              .
              .
3609          .          .<-------   DVF26
3607          .       DRF26
              .          V
              .          V
3610          .       RDF26
              .          .
              .          .
3618          .          .         F35
              .          .          .
              .          .          .
3628          .       CPF35............
              .          .
              .          .
3631          .          .         G24
              .          .          V
              .          .          V
3640          .          .      RCPG24
              .          .          .
              .          .          .
3647          .          .          .         G25
              .          .          .          .
              .          .          .          .
3656     F35RIV...................................
              V
              V
3659     RCPF35
              .
              .
3669          .          .<-------   DVE54
3667          .       DRE54
              .          V
              .          V
3670          .       RDE54
              .          .
              .          .
3678          .          .         E46
              .          .          .
              .          .          .
3685          .       CPE46............
              .          V
              .          V
3688          .      RCPE46
              .          .
              .          .
3698          .          .          .<-------   DVE25
3695          .          .      DRE25
              .          .          V
              .          .          V
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3699          .           .       RDE25
              .           .           .
              .           .           .
3710          .           .           .           .<-------   DVE36
3707          .           .           .       DRE36
              .           .           .           V
              .           .           .           V
3711          .           .           .       RDE36
              .           .           .           .
              .           .           .           .
3719          .           .           .           .         E45
              .           .           .           .           .
              .           .           .           .           .
3725          .           .       CPE45.......................
              .           .           V
              .           .           V
3728          .           .      RCPE45
              .           .           .
              .           .           .
3735          .           .           .         E47
              .           .           .           .
              .           .           .           .
3745          .       CPE47.......................
              .           V
              .           V
3748          .      RCPE47
              .           .
              .           .
3755          .           .         E48
              .           .           .
              .           .           .
3764          .       CPE48............
              .           .
              .           .
3767          .           .        G26A
              .           .           .
              .           .           .
3775          .           .           .        G26B
              .           .           .           V
              .           .           .           V
3784          .           .           .      RCG26B
              .           .           .           .
              .           .           .           .
3792      E48RIV...................................
              V
              V
3795      RCPE48
              .
              .
3805          .           .<-------   DVE38
3802          .       DRE38
              .           V
              .           V
3806          .       RDE38
              .           .
              .           .
3817          .           .           .<-------   DVE30
3814          .           .       DRE30
              .           .           V
              .           .           V
3818          .           .       RDE30
              .           .           .
              .           .           .
3826          .           .           .         E44
              .           .           .           .
              .           .           .           .
3836          .       CPE44.......................
              .           V
              .           V
3839          .      RCPE44
              .           .
              .           .
3849          .           .           .<-------   DVE31
3846          .           .       DRE31
              .           .           V
              .           .           V
3850          .           .       RDE31
              .           .           .
              .           .           .
3858          .           .           .         E43
              .           .           .           .
              .           .           .           .
3867          .           .       CPE43............
              .           .           V
              .           .           V
3870          .           .      RCPE43
              .           .           .
              .           .           .
3877          .           .           .         E50
              .           .           .           .
              .           .           .           .
3886          .       CPE50.......................
              .           V
              .           V
3889          .      RCPE50
              .           .
              .           .
3896          .           .         E52
              .           .           V
              .           .           V
3904          .           .      RCPE52
              .           .           .
              .           .           .
3912          .           .           .         E49
              .           .           .           .
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3922          .       CPE49.......................
              .          .
              .          .
3925      E49RIV............
              V
              V
3928      RCPE49
              .
              .
3935          .         G18
              .          .
              .          .
3947          .          .-------->   DVG18
3944          .        DG18
              .          V
              .          V
3950          .      RCPG18
              .          .
              .          .
3958          .          .         G27
              .          .           .
              .          .           .
3966          .       CPG27............
              .          .
              .          .
3969      G27RIV............
              V
              V
3972      RCPG27
              .
              .
3979          .         G28
              .          .
              .          .
3988      G28RIV............
              V
              V
3991      RCPG28
              .
              .
3998          .         E51
              .          .
              .          .
4007      E51RIV............
              V
              V
4010      RCPE51
              .
              .
4019          .          .<-------   DVG18
4017          .       DRG18
              .          V
              .          V
4021          .       RDG18
              .          .
              .          .
4027          .          .         G17
              .          .           .
              .          .           .
4037      G17RIV........................
              V
              V
4040      RCPG17
              .
              .
4048          .          .<-------   DVE53
4046          .       DRE53
              .          V
              .          V
4049          .       RDE53
              .          .
              .          .
4060          .          .           .<-------   DVE32
4057          .          .       DRE32
              .          .         V
              .          .         V
4061          .          .       RDE32
              .          .           .
              .          .           .
4072          .          .           .           .<-------   DVE33
4069          .          .           .       DRE33
              .          .           .           V
              .          .           .           V
4073          .          .           .       RDE33
              .          .           .           .
              .          .           .           .
4081          .          .           .           .         E42
              .          .           .           .           .
              .          .           .           .           .
4091          .       CPE42.................................
              .          V
              .          V
4094          .      RCPE42
              .          .
              .          .
4101          .          .         E41
              .          .           .
              .          .           .
4107          .       CPE41............
              .          .
              .          .
4111          .          .         G16
              .          .           .
              .          .           .
4121          .          .           .         G29
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4127      E41RIV.................................
               V
               V
4130      RCPE41
                .
                .
4141            .------->   DVE41
4137        DE41
                .
                .
4144            .         G44
                .          V
                .          V
4152            .      RCPG44
                .          .
                .          .
4159            .          .         G06
                .          .          .
                .          .          .
4169            .       CPG06...........
                .          .
                .          .
4175            .          .------->   DVG06
4172            .        DG06
                .          V
                .          V
4178            .      RCPG06
                .          .
                .          .
4186            .          .         G07
                .          .          .
                .          .          .
4196            .       CPG07...........
                .          .
                .          .
4203            .          .------->  DVG07E
4199            .       DG07E
                .          .
                .          .
4210            .          .------->  DVG07W
4206            .       DG07W
                .          V
                .          V
4213            .      RCPG07
                .          .
                .          .
4221            .          .         G08
                .          .          .
                .          .          .
4235            .          .          .------->   DVG08
4231            .          .        DG08
                .          .          V
                .          .          V
4238            .          .      RCPG08
                .          .          .
                .          .          .
4245            .          .          .         G05
                .          .          .          V
                .          .          .          V
4253            .          .          .      RCPG05
                .          .          .          .
                .          .          .          .
4260            .          .          .          .         G46
                .          .          .          .          .
                .          .          .          .          .
4269            .          .          .       CPG46...........
                .          .          .          .
                .          .          .          .
4272            .          .          .          .         G04
                .          .          .          .          .
                .          .          .          .          .
4283            .          .          .       CPG04...........
                .          .          .          V
                .          .          .          V
4286            .          .          .      RCPG04
                .          .          .          .
                .          .          .          .
4295            .          .          .          .           .<-------   DVG06
4293            .          .          .          .       DRG06
                .          .          .          .          V
                .          .          .          .          V
4296            .          .          .          .       RDG06
                .          .          .          .          .
                .          .          .          .          .
4303            .          .          .          .          .         G45
                .          .          .          .          .          .
                .          .          .          .          .          .
4310            .          .       CPG45..................................
                .          .          V
                .          .          V
4313            .          .      RCPG45
                .          .          .
                .          .          .
4320            .          .          .         G31
                .          .          .          .
                .          .          .          .
4328            .          .       CPG31...........
                .          .          .
                .          .          .
4335            .          .          .------->  DVG31E
4331            .          .      DG31E
                .          .          .
                .          .          .
4342            .          .          .------->  DVG31W
4338            .          .      DG31W
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                 .          .          V
                 .          .          V
4345             .          .     RCPG31
                 .          .          .
                 .          .          .
4358             .          .          .-------> DVG47E
4353             .          .     DG47E
                 .          .          .
                 .          .          .
4363             .          .          .          .<-------  DVG07W
4361             .          .          .     DRG07W
                 .          .          .          .
                 .          .          .          .
4364             .          .          .          .         G47
                 .          .          .          .           .
                 .          .          .          .           .
4374             .          .      CPG47.......................
                 .          .          .
                 .          .          .
4381             .          .          .-------> DVG47
4377             .          .     DG47
                 .          .          V
                 .          .          V
4384             .          .     RCPG47
                 .          .          .
                 .          .          .
4393             .          .          .          .<-------  DVG31E
4391             .          .          .     DRG31E
                 .          .          .          V
                 .          .          .          V
4394             .          .          .     RDG31E
                 .          .          .          .
                 .          .          .          .
4402             .          .          .          .         G43
                 .          .          .          .           .
                 .          .          .          .           .
4409             .      CPG43...................................
                 .          .
                 .          .
4414             .          .          .<-------  DVG07E
4412             .          .     DRG07E
                 .          .          V
                 .          .          V
4415             .          .     RDG07E
                 .          .          .
                 .          .          .
4423             .          .          .        G30
                 .          .          .          .
                 .          .          .          .
4433             .          .          .          .          .<-------   DVE41
4431             .          .          .          .       DRE41
                 .          .          .          .          .
                 .          .          .          .          .
4434             .          .     G30RIV......................
                 .          .          V
                 .          .          V
4437             .          .     RCPG30
                 .          .          .
                 .          .          .
4446             .          .          .          .<-------   DVD17
4444             .          .          .      DRD17
                 .          .          .          V
                 .          .          .          V
4447             .          .          .      RDD17
                 .          .          .          .
                 .          .          .          .
4457             .          .          .          .          .<-------   DVD18
4455             .          .          .          .       DRD18
                 .          .          .          .          V
                 .          .          .          .          V
4458             .          .          .          .       RDD18
                 .          .          .          .          .
                 .          .          .          .          .
4466             .          .          .          .          .         D23
                 .          .          .          .          .           .
                 .          .          .          .          .           .
4476             .          .          .      CPD23......................
                 .          .          .          .
                 .          .          .          .
4481             .          .          .          .          .<-------   DVD19
4479             .          .          .          .       DRD19
                 .          .          .          .          V
                 .          .          .          .          V
4482             .          .          .          .       RDD19
                 .          .          .          .          .
                 .          .          .          .          .
4490             .          .          .          .          .         D24
                 .          .          .          .          .           .
                 .          .          .          .          .           .
4501             .          .          .          .      CPD24A............
                 .          .          .          .          .
                 .          .          .          .          .
4505             .          .          .      CPD24............
                 .          .          .          V
                 .          .          .          V
4508             .          .          .     RCPD24
                 .          .          .          .
                 .          .          .          .
4517             .          .          .          .          .<-------   DVD20
4515             .          .          .          .       DRD20
                 .          .          .          .          V
                 .          .          .          .          V
4518             .          .          .          .      RDD20
                 .          .          .          .          .
                 .          .          .          .          .
4527             .          .          .          .          .           .<-------   DVD21
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4525          .           .           .           .           .       DRD21
              .           .           .           .           .           V
              .           .           .           .           .           V
4528          .           .           .           .           .      RDD21
              .           .           .           .           .           .
              .           .           .           .           .           .
4536          .           .           .           .           .           .         D25
              .           .           .           .           .           .           .
              .           .           .           .           .           .           .
4547          .           .           .       CPD25.......................................
              .           .           .           V
              .           .           .           V
4550          .           .           .      RCPD25
              .           .           .           .
              .           .           .           .
4557          .           .           .           .         D26
              .           .           .           .           .
              .           .           .           .           .
4567          .           .           .       CPD26............
              .           .           .           V
              .           .           .           V
4570          .           .           .      RCPD26
              .           .           .           .
              .           .           .           .
4577          .           .           .           .         D27
              .           .           .           .           .
              .           .           .           .           .
4587          .           .           .       CPD27............
              .           .           .           .
              .           .           .           .
4590     D27RIV.................................
              V
              V
4594     RCPD27
              .
              .
4601          .         D28
              .           .
              .           .
4610     D28RIV............
              V
              V
4613     RCPD28
              .
              .
4620          .         D29
              .           .
              .           .
4630     D29RIV............
              V
              V
4633     RCPD29
              .
              .
4640          .         D30
              .           .
              .           .
4652          .           .           .<-------  DVG47
4650          .           .      DRG47
              .           .           V
              .           .           V
4653          .           .      RDG47
              .           .           .
              .           .           .
4661          .           .           .         G32
              .           .           .           .
              .           .           .           .
4669          .           .       CPG32............
              .           .           .
              .           .           .
4672     D30RIV........................
              V
              V
4675     RCPD30
              .
              .
4682          .         D31
              .           .
              .           .
4692     D31RIV............
              V
              V
4695     RCPD31
              .
              .
4703          .         G33
              .           .
              .           .
4708     G33RIV............
              V
              V
4711     RCPG33
              .
              .
4717          .         D32
              .           .
              .           .
4728          .           .           .<-------  DVG47E
4726          .           .      DRG47E
              .           .           .
              .           .           .
4734          .           .           .------->   DVG13
4729          .           .        DG13
              .           .           V
              .           .           V
4737          .           .      RDG47E
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                 .          .          .
                 .          .          .
4745             .          .          .        G14
                 .          .          .          .
                 .          .          .          .
4754             .          .     CPG14 ...........
                 .          .         V
                 .          .         V
4757             .          .     RCPG14
                 .          .          .
                 .          .          .
4764             .          .          .        G34
                 .          .          .          .
                 .          .          .          .
4773             .          .     CPG34A...........
                 .          .          .
                 .          .          .
4779             .          .          .          .<-------  DVG31W
4777             .          .          .     DRG31W
                 .          .          .          V
                 .          .          .          V
4780             .          .          .     RDG31W
                 .          .          .          .
                 .          .          .          .
4788             .          .          .          .        G13
                 .          .          .          .          .
                 .          .          .          .          .
4799             .          .          .          .          .          .<-------   DVG13
4797             .          .          .          .          .      DRG13
                 .          .          .          .          .          .
                 .          .          .          .          .          .
4800             .          .          .      CPG13.......................
                 .          .          .          .
                 .          .          .          .
4804             .          .      CPG34...........
                 .          .         V
                 .          .         V
4808             .          .     RCPG34
                 .          .          .
                 .          .          .
4815             .          .          .        G35
                 .          .          .          .
                 .          .          .          .
4823             .          .      CPG35...........
                 .          .          .
                 .          .          .
4827       D32RIV........................
                V
                V
4830       RCPD32
                .
                .
4839            .          .<-------   DVD13
4837            .      DRD13
                .          V
                .          V
4840            .      RDD13
                .          .
                .          .
4850            .          .          .<-------   DVD46
4848            .          .      DRD46
                .          .         V
                .          .         V
4851            .          .      RDD46
                .          .          .
                .          .          .
4861            .          .          .          .<-------   DVD10
4859            .          .          .      DRD10
                .          .          .          V
                .          .          .          V
4862            .          .          .      RDD10
                .          .          .          .
                .          .          .          .
4872            .          .          .          .          .<-------   DVD47
4870            .          .          .          .      DRD47
                .          .          .          .          V
                .          .          .          .          V
4873            .          .          .          .      RDD47
                .          .          .          .          .
                .          .          .          .          .
4883            .          .          .          .          .          .<-------   DVD15
4881            .          .          .          .          .      DRD15
                .          .          .          .          .          V
                .          .          .          .          .          V
4884            .          .          .          .          .      RDD15
                .          .          .          .          .          .
                .          .          .          .          .          .
4892            .          .          .          .          .          .        D22
                .          .          .          .          .          .          .
                .          .          .          .          .          .          .
4901            .      CPD22.............................................................
                .          V
                .          V
4904            .     RCPD22
                .          .
                .          .
4911            .          .        D33
                .          .          .
                .          .          .
4921            .      CPD33...........
                .          .
                .          .
4924       D33RIV............
                V
                V
4927       RCPD33
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                .
4934            .         D45
                .           .
                .           .
4940            .           .         G36
                .           .           .
                .           .           .
4948       G36RIV.......................
                V
                V
4951       RCPG36
                .
                .
4958            .         D44
                .           .
                .           .
4967            .           .         G37
                .           .           .
                .           .           .
4975       G37RIV.......................
                V
                V
4978       RCPG37
                .
                .
4985            .         D43
                .           .
                .           .
4994            .           .         G38
                .           .           .
                .           .           .
5001       G38RIV.......................
                V
                V
5004       RCPG38
                .
                .
5011            .         G12
                .           V
                .           V
5020            .      RCPG12
                .           .
                .           .
5027            .           .         G39
                .           .           .
                .           .           .
5036            .       CPG39............
                .           .
                .           .
5039            .           .         D34
                .           .           V
                .           .           V
5048            .           .      RCPD34
                .           .           .
                .           .           .
5055            .           .           .         D42
                .           .           .           .
                .           .           .           .
5064            .           .       CPD42............
                .           .           .
                .           .           .
5067       D42RIV.......................
                V
                V
5070       RCPD42
                .
                .
5077            .         D41
                .           .
                .           .
5086       D41RIV............
                V
                V
5089       RCPD41
                .
                .
5096            .         G02
                .           .
                .           .
5105            .           .         G03
                .           .           .
                .           .           .
5115            .       CPG03............
                .           V
                .           V
5118            .      RCPG03
                .           .
                .           .
5127            .           .           .<-------   DVG08
5125            .           .       DRG08
                .           .           V
                .           .           V
5128            .           .       RDG08
                .           .           .
                .           .           .
5135            .           .           .         G09
                .           .           .           .
                .           .           .           .
5146            .       CPG09........................
                .           V
                .           V
5149            .      RCPG09
                .           .
                .           .
5156            .           .         G48
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                 .           .           V
                 .           .           V
5164             .           .      RCPG48
                 .           .           .
                 .           .           .
5171             .           .           .         G01
                 .           .           .           .
                 .           .           .           .
5181             .           .       CPG01............
                 .           .           .
                 .           .           .
5184             .           .           .         G10
                 .           .           .           .
                 .           .           .           .
5193             .           .       CPG10............
                 .           .           V
                 .           .           V
5196             .           .      RCPG10
                 .           .           .
                 .           .           .
5203             .           .           .         G11
                 .           .           .           .
                 .           .           .           .
5213             .       CPG11........................
                 .           .
                 .           .
5220             .           .-------->   DVG11
5216             .        DG11
                 .           V
                 .           V
5223             .      RCPG11
                 .           .
                 .           .
5230             .           .         G40
                 .           .           .
                 .           .           .
5239             .       CPG40............
                 .           .
                 .           .
5242      G40RIV............
               V
               V
5245      RCPG40
                 .
                 .
5252             .         D40
                 .           .
                 .           .
5261             .           .         G41
                 .           .           .
                 .           .           .
5269      D40RIV........................
               V
               V
5272      RCPD40
                 .
                 .
5279             .         D36
                 .           .
                 .           .
5288             .           .         D35
                 .           .           .
                 .           .           .
5298             .       CPD35............
                 .           V
                 .           V
5301             .      RCPD35
                 .           .
                 .           .
5309             .           .         D37
                 .           .           .
                 .           .           .
5318             .       CPD37............
                 .           .
                 .           .
5321             .           .         D38
                 .           .           .
                 .           .           .
5330             .       CPD38............
                 .           V
                 .           V
5333             .      RCPD38
                 .           .
                 .           .
5340             .           .         D39
                 .           .           .
                 .           .           .
5349             .       CPD39............
                 .           .
                 .           .
5352      D39RIV............
               V
               V
5355      RCPD39
                 .
                 .
5364             .           .<-------   DVG11
5362             .       DRG11
                 .           V
                 .           V
5365             .       RDG11
                 .           .
                 .           .
5372             .           .         G42
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5381          .       CPG42...........
              .           .
              .           .
5384      G42RIV...........
              V
              V
5387      RCPG42
              .
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5394          .         C51
              .           .
              .           .
5402          .           .         C52
              .           .           .
              .           .           .
5410          .       CPC52...........
              .           V
              .           V
5413          .      RCPC52
              .           .
              .           .
5421          .           .         C53
              .           .           V
              .           .           V
5429          .           .      RCPC53
              .           .           .
              .           .           .
5437          .           .           .         B07
              .           .           .           .
              .           .           .           .
5445          .       CPB07........................
              .           V
              .           V
5448          .      RCPB07
              .           .
              .           .
5456          .           .         B08
              .           .           .
              .           .           .
5464          .       CPB08...........
              .           .
              .           .
5467      B08RIV...........
              V
              V
5470      RCPB08
              .
              .
5479          .           .<-------   DVC13
5477          .       DRC13
              .           V
              .           V
5480          .       RDC13
              .           .
              .           .
5490          .           .           .<-------   DVC31
5488          .           .       DRC31
              .           .           V
              .           .           V
5491          .           .       RDC31
              .           .           .
              .           .           .
5501          .           .           .           .<-------   DVC14
5499          .           .           .       DRC14
              .           .           .           V
              .           .           .           V
5502          .           .           .       RDC14
              .           .           .           .
              .           .           .           .
5512          .           .           .           .           .<-------   DVC10
5510          .           .           .           .       DRC10
              .           .           .           .           V
              .           .           .           .           V
5513          .           .           .           .       RDC10
              .           .           .           .           .
              .           .           .           .           .
5523          .           .           .           .           .           .<-------   DVC30
5521          .           .           .           .           .       DRC30
              .           .           .           .           .           V
              .           .           .           .           .           V
5524          .           .           .           .           .       RDC30
              .           .           .           .           .           .
              .           .           .           .           .           .
5532          .      CPC33A...............................................
              .           V
              .           V
5537          .       RC33A
              .           .
              .           .
5546          .           .           .<-------   DVC29
5544          .           .       DRC29
              .           .           V
              .           .           V
5547          .           .       RDC29
              .           .           .
              .           .           .
5557          .           .           .           .<-------   DVC28
5555          .           .           .       DRC28
              .           .           .           V
              .           .           .           V
5558          .           .           .       RDC28
              .           .           .           .
              .           .           .           .
5568          .           .           .           .           .<-------   DVC27
5566          .           .           .           .       DRC27
              .           .           .           .           V
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                                                  V
5569                                         RDC27
                                                  .
                                                  .
5579                                              .<-------   DVC20
5577                                         DRC20
                                                  V
                                                  V
5580                                         RDC20
                                                  .
                                                  .
5588                    CPC33B..................................
                            V
                            V
5592                    RC33B
                            .
                            .
5601                        .<-------   DVC24
5599                    DRC24
                            V
                            V
5602                    RDC24
                            .
                            .
5612                        .<-------   DVC25
5610                                         DRC25
                                                  V
                                                  V
5613                                         RDC25
                                                  .
                                                  .
5623                                              .<-------   DVC26
5621                                         DRC26
                                                  V
                                                  V
5624                                         RDC26
                                                  .
                                                  .
5634                                              .           .<-------   DVD09
5632                                                      DRD09
                                                              V
                                                              V
5635                                                      RDD09
                                                              .
                                                              .
5643                    CPC33C..................................
                            V
                            V
5648                    RC33C
                            .
                            .
5655                    CPC33D............
                            V
                            V
5660                    RC33D
                            .
                            .
5667                CPC33E............
                        V
                        V
5672                RC33E
                        .
                        .
5681                        .<-------   DVD12
5679                    DRD12
                            V
                            V
5682                    RDD12
                            .
                            .
5690                CPC33F............
                        V
                        V
5695                RC33F
                        .
                        .
5702                    .       C33
                            .
                            .
5710                 CPC33............
                        V
                        V
5714                RCPC33
                        .
                        .
5721                    .       C34
                            .
                            .
5732                CPC34A............
                        .
                        .
5735                    .       C35
                            V
                            V
5745                    .    RCPC35
                            .
                            .
5753                 CPC34............
                        V
                        V
5756                RCPC34
                        .
                        .
5763                    .       C36
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5774          .      CPC36...........
              .          V
              .          V
5777          .     RCPC36
              .          .
              .          .
5784          .          .        C49
              .          .          .
              .          .          .
5794          .      CPC49...........
              .          V
              .          V
5797          .     RCPC49
              .          .
              .          .
5804          .          .        C40
              .          .          .
              .          .          .
5817          .          .          .-------->   DVC40
5814          .          .       DC40
              .          .          V
              .          .          V
5820          .          .     RCPC40
              .          .          .
              .          .          .
5827          .          .          .         C41
              .          .          .           .
              .          .          .           .
5840          .          .          .           .-------->   DVC41
5837          .          .          .        DC41
              .          .          .           V
              .          .          .           V
5843          .          .          .      RCPC41
              .          .          .           .
              .          .          .           .
5850          .          .          .           .         C42
              .          .          .           .           .
              .          .          .           .           .
5861          .          .      CPC42.......................
              .          .          .
              .          .          .
5867          .          .          .-------->  DVC42A
5864          .          .      DC42A
              .          .          .
              .          .          .
5873          .          .          .-------->  DVC42B
5870          .          .      DC42B
              .          .          V
              .          .          V
5876          .          .     RCPC42
              .          .          .
              .          .          .
5885          .          .          .           .<-------   DVC41
5883          .          .          .       DRC41
              .          .          .           V
              .          .          .           V
5886          .          .          .       RDC41
              .          .          .           .
              .          .          .           .
5893          .          .          .           .         C46
              .          .          .           .           .
              .          .          .           .           .
5903          .          .      CPC46.......................
              .          .          .
              .          .          .
5909          .          .          .-------->   DVC46
5906          .          .       DC46
              .          .          V
              .          .          V
5912          .          .     RCPC46
              .          .          .
              .          .          .
5919          .          .          .         C37
              .          .          .           .
              .          .          .           .
5929          .          .      CPC37...........
              .          .          V
              .          .          V
5932          .          .     RCPC37
              .          .          .
              .          .          .
5939          .          .          .         C48
              .          .          .           .
              .          .          .           .
5949          .          .     CPC48A...........
              .          .          .
              .          .          .
5952          .      CPC48...........
              .          V
              .          V
5956          .     RCPC48
              .          .
              .          .
5963          .          .        C39
              .          .          .
              .          .          .
5976          .          .          .-------->   DVC39
5973          .          .       DC39
              .          .          V
              .          .          V
5979          .          .     RCPC39
              .          .          .
              .          .          .
5988          .          .          .           .<-------   DVC40
5986          .          .          .       DRC40
              .          .          .           V
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                                                  V
5989                                         RDC40
                                                  .
5996                                                .          C43
                                                  .            .
                                                  .            .
6007                                   CPC43......................
                                                  .
6013                                              .-------> DVC43
6010                                     DC43
                                                 V
                                                 V
6016                                   RCPC43
                                                  .
6025                                              .<-------  DVC42A
6023                                         DRC42A
                                                  V
                                                  V
6026                                         RDC42A
                                                  .
6033                                              .          C45
                                                  .            .
                                                  .            .
6043                                          CPC45............
                                                  .
6049                                              .-------> DVC45
6046                                          DC45
                                                  V
                                                  V
6052                                         RCPC45
                                                  .
6059                                              .          C44
                                                  .            .
                                                  .            .
6069                                   CPC44......................
                                                 V
                                                 V
6072                                   RCPC44
                                                  .
6081                                              .<-------  DVC39
6079                                          DRC39
                                                  V
                                                  V
6082                                          RDC39
                                                  .
6091                                              .          .<-------  DVC43
6089                                              .       DRC43
                                                  .           V
                                                  .           V
6092                                              .       RDC43
                                                  .           .
                                                  .           .
6099                                              .           .        C38
                                                  .           .          .
                                                  .           .          .
6110                                          CPC38......................
                                                  V
                                                  V
6113                                         RCPC38
                                                  .
6122                                              .          .<-------  DVC42B
6120                                              .       DRC42B
                                                  .           V
                                                  .           V
6123                                              .       RDC42B
                                                  .           .
6132                                              .           .          .<-------  DVC45
6130                                              .           .       DRC45
                                                  .           .           V
                                                  .           .           V
6133                                              .           .       RDC45
                                                  .           .          .
6142                                              .           .          .          .<-------  DVC46
6140                                              .           .          .       DRC46
                                                  .           .          .          V
                                                  .           .          .          V
6143                                              .           .          .       RDC46
                                                  .           .          .          .
6150                                              .           .          .          .          C47
                                                  .           .          .          .            .
                                                  .           .          .          .            .
6160                                   CPC47A.......................................................
                                                  .
                                                  .
6164                                CPC47............
                                         V
                                         V
6167                                RCPC47
                                                  .
                                                  .
6174                                         B09
                                                  .
                                                  .
6184                                CPB09............
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                 .          V
                 .          V
6188             .     RCPB09
                 .          .
                 .          .
6195             .          .        B01
                 .          .         V
                 .          .         V
6202             .          .     RCPB01
                 .          .          .
                 .          .          .
6209             .          .          .        B02
                 .          .          .         V
                 .          .          .         V
6216             .          .          .     RCPB02
                 .          .          .          .
                 .          .          .          .
6223             .          .          .          .         B03
                 .          .          .          .           .
                 .          .          .          .           .
6230             .          .      CPB03.......................
                 .          .          .
                 .          .          .
6237             .          .          .-------> DVB03N
6233             .          .      DB03N
                 .          .          V
                 .          .          V
6240             .          .     RCPB03
                 .          .          .
                 .          .          .
6249             .          .          .          .<-------  DVB03N
6247             .          .          .     DRB03N
                 .          .          .          .
                 .          .          .          .
6255             .          .          .          .-------> DVB16
6251             .          .          .     DB16
                 .          .          .          .
                 .          .          .          .
6263             .          .          .          .-------> DVB18
6259             .          .          .     DB18
                 .          .          .          .
                 .          .          .          .
6266             .          .          .          .         B13
                 .          .          .          .           .
                 .          .          .          .           .
6276             .          .      CPB13.......................
                 .          .          .
                 .          .          .
6283             .          .          .-------> DVB13
6279             .          .      DB13
                 .          .          V
                 .          .          V
6286             .          .     RCPB13
                 .          .          .
                 .          .          .
6293             .          .          .        B04
                 .          .          .         V
                 .          .          .         V
6299             .          .          .     RCPB04
                 .          .          .          .
                 .          .          .          .
6306             .          .          .          .         B05
                 .          .          .          .           .
                 .          .          .          .           .
6311             .          .      CPB05.......................
                 .          .          V
                 .          .          V
6315             .          .     RCPB05
                 .          .          .
                 .          .          .
6322             .          .          .        B06
                 .          .          .         V
                 .          .          .         V
6331             .          .          .     RCPB06
                 .          .          .          .
                 .          .          .          .
6338             .          .          .          .         B10
                 .          .          .          .           .
                 .          .          .          .           .
6347             .          .      CPB10.......................
                 .          .          .
                 .          .          .
6351             .          .          .        B11
                 .          .          .          .
                 .          .          .          .
6359             .          .      CPB11............
                 .          .          V
                 .          .          V
6363             .          .     RCPB11
                 .          .          .
                 .          .          .
6370             .          .          .        B12
                 .          .          .          .
                 .          .          .          .
6379             .          .     CPB12A............
                 .          .          .
                 .          .          .
6382             .     CPB12............
                 .          .
                 .          .
6386             .          .        H02
                 .          .          V
                 .          .          V
6396             .          .     RCPH02
                 .          .          .
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6403          .           .           .         H01
              .           .           .           .
              .           .           .           .
6413          .           .      CPH01............
              .           .           .
              .           .           .
6419          .           .           .------->   DVH01
6416          .           .       DH01
              .           .           V
              .           .           V
6422          .           .     RCPH01
              .           .           .
              .           .           .
6429          .           .           .         H24
              .           .           .           .
              .           .           .           .
6440          .           .      CPH24............
              .           .           V
              .           .           V
6443          .           .     RCPH24
              .           .           .
              .           .           .
6450          .           .           .         H55
              .           .           .           .
              .           .           .           .
6461          .           .      CPH55............
              .           .           V
              .           .           V
6464          .           .     RCPH55
              .           .           .
              .           .           .
6471          .           .           .         H56
              .           .           .           .
              .           .           .           .
6481          .           .      CPH56............
              .           .           V
              .           .           V
6484          .           .     RCPH56
              .           .           .
              .           .           .
6491          .           .           .         H57
              .           .           .           .
              .           .           .           .
6500          .           .      CPH57............
              .           .           V
              .           .           V
6503          .           .     RCPH57
              .           .           .
              .           .           .
6510          .           .           .         H68
              .           .           .           .
              .           .           .           .
6521          .           .      CPH68............
              .           .           .
              .           .           .
6524     B12RIV........................
              V
              V
6527     RCPB12
              .
              .
6536          .          .<-------   DVH01
6534          .      DRH01
              .          V
              .          V
6537          .      RDH01
              .          .
              .          .
6546          .          .        H25
              .          .          .
              .          .          .
6554          .      CPH25............
              .          V
              .          V
6557          .     RCPH25
              .          .
              .          .
6565          .          .        H58
              .          .          .
              .          .          .
6574          .      CPH58............
              .          V
              .          V
6578          .     RCPH58
              .          .
              .          .
6584          .          .        H26
              .          .          V
              .          .          V
6592          .          .     RCPH26
              .          .          .
              .          .          .
6600          .          .          .         H59
              .          .          .           .
              .          .          .           .
6609          .      CPH59........................
              .          .
              .          .
6616          .          .------->   DVH59
6613          .       DH59
              .          V
              .          V
6619          .     RCPH59
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6627          .          .        H60
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6636            .      CPH60...........
                .          V
                .          V
6639            .     RCPH60
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6648            .          .          .<-------   DVH59
6646            .          .      DRH59
                .          .          V
                .          .          V
6649            .          .      RDH59
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6656            .          .          .         H61
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6664            .          .      CPH61...........
                .          .          V
                .          .          V
6667            .          .     RCPH61
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6675            .          .          .         H69
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6684            .      CPH69......................
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6687       H69RIV...........
                V
                V
6690       RCPH69
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6697            .        H65
                .          V
                .          V
6705            .     RCPH65
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6713            .          .         H67
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6720            .      CPH67...........
                .          V
                .          V
6723            .     RCPH67
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6731            .          .         H70
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6739            .      CPH70...........
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6742            .          .         B15
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6748       B15RIV......................
                V
                V
6752       RCPB15
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6761            .          .<-------   DVB13
6759            .      DRB13
                .          V
                .          V
6762            .      RDB13
                .          .
                .          .
6769            .          .         B14
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6777            .          .          .           .<-------  DVB18
6775            .          .          .      DRB18
                .          .          .           .
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6783            .          .          .           .------->   DVB14
6779            .          .          .        DB14
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6791            .          .          .           .------->   DVB19
6787            .          .          .        DB19
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6794            .      CPB14......................
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6797            .          .         B21
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6803            .      CPB21...........
                .          V
                .          V
6806            .     RCPB21
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6813            .          .         B20
                .          .          V
                .          .          V
6819            .          .     RCPB20
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6826          .           .           .         B44
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6833          .           .       CPB44............
              .           .           V
              .           .           V
6836          .           .      RCPB44
              .           .           .
              .           .           .
6843          .           .           .         B45
              .           .           .           .
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6851          .       CPB45........................
              .           .
              .           .
6854      B45RIV............
              V
              V
6857      RCPB45
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6864          .         H22
              .           V
              .           V
6872          .      RCPH22
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6880          .           .         H03
              .           .           V
              .           .           V
6888          .           .      RCPH03
              .           .           .
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6896          .           .           .         H23
              .           .           .           .
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6904          .       CPH23........................
              .           V
              .           V
6907          .      RCPH23
              .           .
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6914          .           .         H27
              .           .           V
              .           .           V
6922          .           .      RCPH27
              .           .           .
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6930          .           .           .         H62
              .           .           .           .
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6938          .       CPH62........................
              .           V
              .           V
6941          .      RCPH62
              .           .
              .           .
6948          .           .         H20
              .           .           V
              .           .           V
6956          .           .      RCPH20
              .           .           .
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6964          .           .           .         H28
              .           .           .           .
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6972          .           .       CPH28............
              .           .           V
              .           .           V
6975          .           .      RCPH28
              .           .           .
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6982          .           .           .         H63
              .           .           .           .
              .           .           .           .
6989          .       CPH63........................
              .           .
              .           .
6996          .           .-------->   DVH63
6993          .        DH63
              .           V
              .           V
6999          .      RCPH63
              .           .
              .           .
7007          .           .         H66
              .           .           .
              .           .           .
7016          .       CPH66............
              .           V
              .           V
7019          .      RCPH66
              .           .
              .           .
7027          .           .         H71
              .           .           .
              .           .           .
7035          .       CPH71............
              .           V
              .           V
7038          .      RCPH71
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7046          .           .         H72
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7054          .       CPH72............
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              .           .
7057     H72RIV............
              V
              V
7060     RCPH72
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7067          .         B42
              .           V
              .           V
7074          .      RCPB42
              .           .
              .           .
7081          .           .         B43
              .           .           .
              .           .           .
7088          .       CPB43............
              .           .
              .           .
7091          .           .         B41
              .           .           .
              .           .           .
7099          .       CPB41............
              .           V
              .           V
7102          .      RCPB41
              .           .
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7109          .           .         B46
              .           .           .
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7117          .       CPB46............
              .           .
              .           .
7120     B46RIV............
              V
              V
7123     RCPB46
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7132          .           .<-------   DVH63
7130          .       DRH63
              .           V
              .           V
7133          .       RDH63
              .           .
              .           .
7141          .           .         H53
              .           .           .
              .           .           .
7149          .       CPH53............
              .           .
              .           .
7152          .           .         H18
              .           .           V
              .           .           V
7160          .           .      RCPH18
              .           .           .
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7168          .           .           .         H29
              .           .           .           .
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7176          .           .       CPH29............
              .           .           .
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7179          .           .           .         H04
              .           .           .           V
              .           .           .           V
7187          .           .           .      RCPH04
              .           .           .           .
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7194          .           .           .           .         H17
              .           .           .           .           .
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7202          .           .           .       CPH17............
              .           .           .           .
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7210          .           .           .           .-------->   DVH17
7205          .           .           .        DH17
              .           .           .           .
              .           .           .           .
7218          .           .           .           .-------->  DVH30A
7213          .           .           .      DH30A
              .           .           .           V
              .           .           .           V
7221          .           .           .      RCPH17
              .           .           .           .
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7229          .           .           .           .         H30
              .           .           .           .           .
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7237          .           .           .       CPH30............
              .           .           .           V
              .           .           .           V
7240          .           .           .      RCPH30
              .           .           .           .
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7248          .           .           .           .         H51
              .           .           .           .           .
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7256          .           .           .       CPH51............
              .           .           .           V
              .           .           .           V
7259          .           .           .      RCPH51
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7267                                                              .         H52
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7275                                                      CPH52A...........
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7279                                          CPH52B......................
                                                  V
                                                  V
7282                                          RCPH52
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7289                                                  H54
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7297                                           CPH54...........
                                                  V
                                                  V
7300                                          RCPH54
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7308                                                  H05
                                                      V
                                                      V
7315                                                RCPH05
                                                      .
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7328                                                  .------->   DVH05
7323                                                DH05
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                                                      .
7333                                                  .           .<-------   DVH17
7331                                                  .       DRH17
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7340                                                  .           .------->  DVH31A
7335                                                  .      DH31A
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7343                                                  .           .         H31
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7352                                                CPH31......................
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7356                                                  .       H15B
                                                      .          V
                                                      .          V
7363                                                  .      RCH15B
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7370                                                  .           .        H15A
                                                      .           .           .
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7378                                                  .      CPH15A...........
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7383                                                  .           .           .<-------   DVH05
7381                                                  .           .       DRH05
                                                      .           .           .
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7385                                                  .      CPH15 ...........
                                                      .           .
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7393                                                  .           .------->  DVH15A
7388                                                  .      DH15A
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7397                                                CPH31A...........
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7406                                                  .------->   DVH31
7401                                                DH31
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7415                                                  .------->  DVH33A
7410                                                DH33A
                                                      .
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7420                                                  .           .<-------   DVH31
7418                                                  .       DRH31
                                                      .           .
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7422                                                CPH32B...........
                                                      V
                                                      V
7425                                                RCPH31
                                                      .
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7434                                                  .           .<-------  DVH31A
7432                                                  .      DRH31A
                                                      .          V
                                                      .          V
7435                                                  .      RDH31A
                                                      .           .
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7445                                                  .           .           .<-------  DVH30A
7443                                                  .           .      DRH30A
                                                      .           .           .
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7447                                                  .      CPH32A...........
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7451                                                  .           .         H32
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7460            .         .      CPH32.......................
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7466            .         .         .------->   DVH32
7463            .         .      DH32
                .         .         V
                .         .         V
7470            .         .     RCPH32
                .         .         .
                .         .         .
7478            .         .         .         .<-------   DVH32
7476            .         .         .      DRH32
                .         .         .         V
                .         .         .         V
7479            .         .         .      RDH32
                .         .         .         .
                .         .         .         .
7487            .         .         .         .         H48
                .         .         .         .           .
                .         .         .         .           .
7495            .         .         .      CPH48............
                .         .         .         .
                .         .         .         .
7501            .         .         .         .------->   DVH48
7498            .         .         .      DH48
                .         .         .         V
                .         .         .         V
7504            .         .         .     RCPH48
                .         .         .         .
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7512            .         .         .         .         H50
                .         .         .         .           .
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7521            .         .      CPH50.......................
                .         .         V
                .         .         V
7524            .         .     RCPH50
                .         .         .
                .         .         .
7534            .         .         .         .<-------   DVH48
7532            .         .         .      DRH48
                .         .         .         V
                .         .         .         V
7535            .         .         .      RDH48
                .         .         .         .
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7543            .         .         .         .         H49
                .         .         .         .           .
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7551            .         .         .      CPH49............
                .         .         .         V
                .         .         .         V
7555            .         .         .     RCPH49
                .         .         .         .
                .         .         .         .
7561            .         .         .         .         H73
                .         .         .         .           .
                .         .         .         .           .
7570            .      CPH73...................................
                .         V
                .         V
7573            .     RCPH73
                .         .
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7581            .         .        H74
                .         .         .
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7589            .      CPH74............
                .         .
                .         .
7592      H74RIV............
               V
               V
7595      RCPH74
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                .
7604            .         .<-------  DVH15A
7602            .     DRH15A
                .         V
                .         V
7606            .     RCH15A
                .         .
                .         .
7614            .         .         .<-------  DVH33A
7612            .         .     DRH33A
                .         .         V
                .         .         V
7616            .         .      RDH33
                .         .         .
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7624            .     CPH33B............
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                .         .
7627            .         .        H33
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7637            .      CPH33............
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                .         .
7644            .         .------->   DVH33
7641            .       DH33
                .         V
                .         V
7647            .     RCPH33
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7655            .           .        H47
                .           .          .
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7663            .      CPH47.............
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                .          V
7666            .     RCPH47
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7674            .           .        H75
                .           .          .
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7684            .      CPH75.............
                .          V
                .          V
7687            .     RCPH75
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                .           .
7695            .           .        H76
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7703            .      CPH76.............
                .          V
                .          V
7706            .     RCPH76
                .           .
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7714            .           .        H77
                .           .          .
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7722            .      CPH77.............
                .           .
                .           .
7725       H77RIV............
                V
                V
7729       RCPH77
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                .
7736            .        B40
                .          V
                .          V
7744            .     RCPB40
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7751            .           .        B49
                .           .          V
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7759            .           .    RCPB49
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7765            .           .           .        B50
                .           .           .          .
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7772            .      CPB50........................
                .          V
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7775            .     RCPB50
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7783            .           .        B19
                .           .          .
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7791            .           .          .          .<-------   DVB19
7789            .           .          .      DRB19
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7792            .           .      CPB19............
                .           .          V
                .           .          V
7795            .           .    RCPB19
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7802            .           .           .        B48
                .           .           .          .
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7808            .      CPB48........................
                .          V
                .          V
7811            .     RCPB48
                .           .
                .           .
7819            .           .        B47
                .           .          .
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7827            .      CPB47.............
                .          V
                .          V
7830            .     RCPB47
                .           .
                .           .
7837            .           .        B61
                .           .          .
                .           .          .
7844            .      CPB61.............
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                .           .
7847       B61RIV............
                V
                V
7850       RCPB61
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7857            .        B22
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                 .          V
                 .          V
7865             .     RCPB22
                 .          .
                 .          .
7872             .          .        B23
                 .          .          .
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7884             .          .          .-------->   DVB23
7881             .          .       DB23
                 .          .          V
                 .          .          V
7887             .          .     RCPB23
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                 .          .          .
7894             .          .          .         B36
                 .          .          .           .
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7902             .          .      CPB36............
                 .          .          .
                 .          .          .
7907             .          .          .           .<-------   DVB23
7905             .          .          .      DRB23
                 .          .          .          V
                 .          .          .          V
7908             .          .          .      RDB23
                 .          .          .          .
                 .          .          .          .
7915             .          .          .          .         B24
                 .          .          .          .           .
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7924             .          .          .     CPB24A............
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7928             .          .      CPB24............
                 .          .          V
                 .          .          V
7931             .          .     RCPB24
                 .          .          .
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7938             .          .          .         B37
                 .          .          .           .
                 .          .          .           .
7946             .     CPB37........................
                 .          .
                 .          .
7949             .          .        B25
                 .          .          .
                 .          .          .
7958             .     CPB25............
                 .          V
                 .          V
7961             .     RCPB25
                 .          .
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7968             .          .        B26
                 .          .          .
                 .          .          .
7977             .     CPB26............
                 .          .
                 .          .
7984             .          .-------->   DVB26
7981             .       DB26
                 .          V
                 .          V
7987             .     RCPB26
                 .          .
                 .          .
7996             .          .          .<-------   DVB14
7994             .          .      DRB14
                 .          .          .
                 .          .          .
8002             .          .          .-------->  DVB18B
7998             .          .      DB18B
                 .          .          V
                 .          .          V
8006             .          .     RDB18
                 .          .          .
                 .          .          .
8012             .          .          .         B17
                 .          .          .           .
                 .          .          .           .
8023             .          .          .           .-------->   DVB17
8020             .          .          .       DB17
                 .          .          .          V
                 .          .          .          V
8026             .          .          .     RCPB17
                 .          .          .          .
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8033             .          .          .          .         B18
                 .          .          .          .           .
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8042             .          .      CPB18........................
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8047             .          .          .           .<-------  DVB16
8045             .          .          .     DRB16
                 .          .          .          V
                 .          .          .          V
8048             .          .          .     RDB16
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8057             .          .          .          .           .<-------   DVB17
8055             .          .          .          .       DRB17
                 .          .          .          .          V
                 .          .          .          .          V
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8058                                    RDB17
                                          .
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8067                                      .<-------  DVB18B
8065                                      .     DRB18B
                                          .        .
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8068                                      .        .        B16
                                          .        .         .
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8076                                CPB16.................................
                                      V
                                      V
8079                                RCPB16
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8086                                      .        B39
                                          .         .
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8095                                CPB39A............
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8099                          CPB39............
                                  V
                                  V
8102                          RCPB39
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8109                                  .        B54
                                      .         .
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8117                          CPB54............
                                  V
                                  V
8120                          RCPB54
                                  .
                                  .
8127                                  .        B38
                                      .         .
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8136                          CPB38............
                                  V
                                  V
8139                          RCPB38
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                                  .
8147                                  .        B27
                                      .         V
                                      .         V
8155                                  .    RCPB27
                                      .         .
                                      .         .
8162                                  .         .        B35
                                      .         .         .
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8171                                  .    CPB35A............
                                      .         .
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8176                                  .         .         .<-------   DVB26
8174                                  .         .      DRB26
                                      .         .         .
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8178                                  .    CPB35............
                                      .         V
                                      .         V
8181                                  .    RCPB35
                                      .         .
                                      .         .
8188                                  .         .        B28
                                      .         .         .
                                      .         .         .
8196                                  .         .         .        B34
                                      .         .         .         .
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8205                                  .         .      CPB34............
                                      .         .         V
                                      .         .         V
8208                                  .         .     RCPB34
                                      .         .         .
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8215                                  .         .         .        B33
                                      .         .         .         .
                                      .         .         .         .
8224                                  .         .     CPB33A............
                                      .         .         .
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8228                                  .    CPB33............
                                      .         V
                                      .         V
8231                                  .    RCPB33
                                      .         .
                                      .         .
8238                                  .         .        B65
                                      .         .         .
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8245                      CPB65.................................
                              V
                              V
8249                      RCPB65
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                              .
8257                          .        B55
                              .         V
                              .         V
8265                          .    RCPB55
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8273          .           .           .        B31
              .           .           .         V
              .           .           .         V
8281          .           .           .     RCPB31
              .           .           .          .
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8288          .           .           .          .        B32
              .           .           .          .         V
              .           .           .          .         V
8296          .           .           .          .     RCPB32
              .           .           .          .          .
              .           .           .          .          .
8303          .           .           .          .          .        B30
              .           .           .          .          .          .
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8314          .           .           .          .          .          .-------> DVB30
8311          .           .           .          .          .       DB30
              .           .           .          .          .         V
              .           .           .          .          .         V
8317          .           .           .          .          .     RCPB30
              .           .           .          .          .          .
              .           .           .          .          .          .
8324          .           .           .          .          .          .        B29
              .           .           .          .          .          .          .
              .           .           .          .          .          .          .
8333          .           .           .     CPB29.....................................
              .           .           .         V
              .           .           .         V
8336          .           .           .     RCPB29
              .           .           .          .
              .           .           .          .
8346          .           .           .          .          .<-------  DVB30
8344          .           .           .          .      DRB30
              .           .           .          .         V
              .           .           .          .         V
8347          .           .           .          .      RDB30
              .           .           .          .          .
              .           .           .          .          .
8354          .           .           .          .          .        B57
              .           .           .          .          .          .
              .           .           .          .          .          .
8362          .           .           .          .      CPB57............
              .           .           .          .         V
              .           .           .          .         V
8365          .           .           .          .     RCPB57
              .           .           .          .          .
              .           .           .          .          .
8372          .           .           .          .          .        B56
              .           .           .          .          .          .
              .           .           .          .          .          .
8380          .           .           .          .      CPB56............
              .           .           .          .         V
              .           .           .          .         V
8383          .           .           .          .     RCPB56
              .           .           .          .          .
              .           .           .          .          .
8390          .           .           .          .          .        B58
              .           .           .          .          .          .
              .           .           .          .          .          .
8399          .           .           .          .      CPB58............
              .           .           .          .         V
              .           .           .          .         V
8402          .           .           .          .     RCPB58
              .           .           .          .          .
              .           .           .          .          .
8410          .           .           .          .          .        B59
              .           .           .          .          .          .
              .           .           .          .          .          .
8420          .       CPB59..............................................
              .           V
              .           V
8423          .      RCPB59
              .           .
              .           .
8431          .           .        B52
              .           .         V
              .           .         V
8439          .           .     RCPB52
              .           .          .
              .           .          .
8447          .           .           .        B53
              .           .           .         V
              .           .           .         V
8453          .           .           .     RCPB53
              .           .           .          .
              .           .           .          .
8461          .           .           .          .        B60
              .           .           .          .          .
              .           .           .          .          .
8474          .       CPB60.....................................
              .           V
              .           V
8477          .      RCPB60
              .           .
              .           .
8487          .           .           .<-------  DVH33
8485          .           .      DRH33
              .           .         V
              .           .         V
8488          .           .      RDH33
              .           .          .
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8496          .           .           .        H46
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8504                CPH46............
                      V
                      V
8507                RCPH46
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8515                  .        H06
                      .         .
                      .         .-------->   DVH06
8526                  .
8523                  .        DH06
                      .         V
                      .         V
8529                  .      RCPH06
                      .         .
                      .         .
8537                  .         .        H16
                      .         .         V
                      .         .         V
8545                  .         .      RCPH16
                      .         .         .
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8553                  .         .         .         H14
                      .         .         .          .
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8563                  .      CPH14.......................
                      .         V
                      .         V
8566                  .      RCPH14
                      .         .
                      .         .
8575                  .         .         .<-------   DVH06
8573                  .         .      DRH06
                      .         .         V
                      .         .         V
8577                  .         .      RDH06
                      .         .         .
                      .         .         .
8583                  .         .         .         H13
                      .         .         .          .
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8592                  .      CPH13.......................
                      .         V
                      .         V
8595                  .      RCPH13
                      .         .
                      .         .
8603                  .         .        H12
                      .         .         V
                      .         .         V
8611                  .         .      RCPH12
                      .         .         .
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8618                  .         .         .         H07
                      .         .         .          .
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8626                  .         .         .          .         H35
                      .         .         .          .          .
                      .         .         .          .          .-------->   DVH35
8637                  .         .         .          .
8634                  .         .         .          .        DH35
                      .         .         .          .         V
                      .         .         .          .         V
8641                  .         .         .          .      RCH35A
                      .         .         .          .          .
                      .         .         .          .          .
8649                  .         .      CPH07.......................
                      .         .         .
                      .         .         .
8656                  .         .         .-------->   DVH07
8653                  .         .      DH07
                      .         .         V
                      .         .         V
8659                  .         .      RCPH07
                      .         .         .
                      .         .         .
8667                  .         .         .         H34
                      .         .         .          .
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8675                  .      CPH34.......................
                      .         V
                      .         V
8678                  .      RCPH34
                      .         .
                      .         .
8686                  .         .        H45
                      .         .         .
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8694                  .      CPH45............
                      .         V
                      .         V
8697                  .      RCPH45
                      .         .
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8707                  .         .         .<-------   DVH07
8705                  .         .      DRH07
                      .         .         V
                      .         .         V
8708                  .         .      RDH07
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8716                  .         .         .         H36
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8724                  .         .      CPH36............
                      .         .         V
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8727          .           .           .           .      RCPH36
              .           .           .           .           .
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8735          .           .           .           .           .         H44
              .           .           .           .           .           .
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8743          .           .           .           .       CPH44............
              .           .           .           .           V
              .           .           .           .           V
8746          .           .           .           .      RCPH44
              .           .           .           .           .
              .           .           .           .           .
8754          .           .           .           .           .         H78
              .           .           .           .           .           .
              .           .           .           .           .           .
8763          .           .       CPH78.................................
              .           .           V
              .           .           V
8766          .           .      RCPH78
              .           .           .
              .           .           .
8774          .           .           .         H79
              .           .           .           .
              .           .           .           .
8782          .           .       CPH79............
              .           .           V
              .           .           V
8785          .           .      RCPH79
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8793          .           .           .         H80
              .           .           .           .
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8802          .           .       CPH80............
              .           .           .
              .           .           .
8805      H80RIV......................
              V
              V
8808      RCPH80
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8815          .         H43
              .           V
              .           V
8822          .      RCPH43
              .           .
              .           .
8830          .           .         H81
              .           .           .
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8837          .      CPH81 ............
              .           V
              .           V
8840          .      RCPH81
              .           .
              .           .
8848          .           .         H08
              .           .           V
              .           .           V
8856          .           .      RCPH08
              .           .           .
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8864          .           .           .         H11
              .           .           .           .
              .           .           .           .
8875          .           .           .           .-------->   DVH11
8872          .           .           .        DH11
              .           .           .           V
              .           .           .           V
8878          .           .           .      RCPH11
              .           .           .           .
              .           .           .           .
8887          .           .           .           .           .<-------   DVH35
8885          .           .           .           .       DRH35
              .           .           .           .           .
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8889          .           .       CPH35........................
              .           .           V
              .           .           V
8892          .           .      RCPH35
              .           .           .
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8899          .           .           .         H37
              .           .           .           .
              .           .           .           .
8907          .           .       CPH37............
              .           .           V
              .           .           V
8910          .           .      RCPH37
              .           .           .
              .           .           .
8917          .           .           .         H42
              .           .           .           .
              .           .           .           .
8924          .           .       CPH42............
              .           .           V
              .           .           V
8927          .           .      RCPH42
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8935          .           .           .         H82
              .           .           .           .
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8943          .       CPH82........................
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                 .           V
                 .           V
8946             .      RCPH82
                 .           .
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8954             .           .        H83
                 .           .          .
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8963             .           .          .        B62
                 .           .          .          .
                 .           .          .          .
8971       B62RIV.................................
                V
                V
8974       RCPB62
                .
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8981             .         B63
                 .           .
                 .           .
8989       B63RIV............
                V
                V
8993       RCPB63
                .
                .
9000             .         B64
                 .           .
                 .           .
9008       B64RIV............
                V
                V
9011       RCPB64
                .
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9018             .         H09
                 .           V
                 .           V
9026             .      RCPH09
                 .           .
                 .           .
9034             .           .        H10
                 .           .          .
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9041             .       CPH10............
                 .           V
                 .           V
9044             .      RCPH10
                 .           .
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9054             .           .          .<-------   DVH11
9052             .           .      DRH11
                 .           .          V
                 .           .          V
9055             .           .      RDH11
                 .           .          .
                 .           .          .
9062             .           .          .        H38
                 .           .          .          .
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9071             .       CPH38........................
                 .           V
                 .           V
9074             .      RCPH38
                 .           .
                 .           .
9082             .           .        H39
                 .           .          .
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9089             .       CPH39............
                 .           .
                 .           .
9096             .           .------->   DVH39
9093             .        DH39
                 .           V
                 .           V
9099             .      RCPH39
                 .           .
                 .           .
9107             .           .        H41
                 .           .          .
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9114             .       CPH41............
                 .           V
                 .           V
9117             .      RCPH41
                 .           .
                 .           .
9127             .           .          .<-------   DVH39
9125             .           .      DRH39
                 .           .          V
                 .           .          V
9128             .           .      RDH39
                 .           .          .
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9136             .           .          .        H40
                 .           .          .          .
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9144             .           .      CPH40............
                 .           .          V
                 .           .          V
9147             .           .     RCPH40
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9155             .           .          .        H84
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9164            .      CPH84.......................
                .          V
                .          V
9167            .     RCPH84
                .          .
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9175            .          .        H85
                .          .          .
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9185            .      CPH85............
                .          V
                .          V
9188            .     RCPH85
                .          .
                .          .
9196            .          .        H86
                .          .          .
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9206            .      CPH86............
                .          .
                .          .
9209      H86RIV............
               V
               V
9212      RCPH86
                .
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9219            .        I03
                .          .
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9230            .          .------->   DVI03
9227            .       DI03
                .          V
                .          V
9233            .     RCPI03
                .          .
                .          .
9240            .          .        I04
                .          .          .
                .          .          .
9248            .      CPI04............
                .          V
                .          V
9251            .     RCPI04
                .          .
                .          .
9258            .          .        I06
                .          .          .
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9266            .      CPI06............
                .          V
                .          V
9269            .     RCPI06
                .          .
                .          .
9276            .          .        I08
                .          .          .
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9283            .      CPI08............
                .          V
                .          V
9286            .     RCPI08
                .          .
                .          .
9294            .          .        I10
                .          .          .
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9302            .      CPI10............
                .          V
                .          V
9305            .     RCPI10
                .          .
                .          .
9315            .          .          .<-------   DVI03
9313            .          .     DRI03
                .          .         V
                .          .         V
9316            .          .     RDI03
                .          .          .
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9324            .          .          .        I05
                .          .          .          .
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9333            .          .     CPI05............
                .          .         V
                .          .         V
9337            .          .    RCPI05
                .          .          .
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9343            .          .          .        I07
                .          .          .          .
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9350            .          .     CPI07............
                .          .         V
                .          .         V
9353            .          .    RCPI07
                .          .          .
                .          .          .
9361            .          .          .        I09
                .          .          .          .
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9368            .          .     CPI09............
                .          .         V
                .          .         V
9371            .          .    RCPI09
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9379            .          .          .        I11
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9387            .          .      CPI11...........
                .          .          V
                .          .          V
9390            .          .     RCPI11
                .          .          .
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9398            .          .          .        I12
                .          .          .          .
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9407            .      CPI12......................
                .          V
                .          V
9410            .     RCPI12
                .          .
                .          .
9418            .          .        I13
                .          .          .
                .          .          .
9427            .      CPI13...........
                .          V
                .          V
9430            .     RCPI13
                .          .
                .          .
9438            .          .        I14
                .          .          .
                .          .          .
9447            .      CPI14...........
                .          .
                .          .
9451            .          .        A12
                .          .          V
                .          .          V
9459            .          .     RCPA12
                .          .          .
                .          .          .
9467            .          .          .        A41
                .          .          .          .
                .          .          .          .
9473            .          .      CPA41...........
                .          .          .
                .          .          .
9476      A41RIV......................
                V
                V
9480      RCPA41
                .
                .
9488            .       I15B
                .          V
                .          V
9496            .     RCI15B
                .          .
                .          .
9504            .          .       I15A
                .          .          .
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9511            .     CPI15A...........
                .          V
                .          V
9515            .     RCI15A
                .          .
                .          .
9522            .          .        I16
                .          .          V
                .          .          V
9530            .          .     RCPI16
                .          .          .
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9538            .          .          .        I18
                .          .          .          .
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9546            .          .          .          .       I17C
                .          .          .          .          V
                .          .          .          .          V
9553            .          .          .          .     RCI17C
                .          .          .          .          .
                .          .          .          .          .
9561            .          .          .          .          .       I17B
                .          .          .          .          .          V
                .          .          .          .          .          V
9567            .          .          .          .          .     RCI17B
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9575            .          .          .          .          .          .        I17A
                .          .          .          .          .          .          .
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9581            .          .          .          .     CPI17A......................
                .          .          .          .          V
                .          .          .          .          V
9585            .          .          .          .     RCI17A
                .          .          .          .          .
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9593            .      CPI18...................................
                .          V
                .          V
9597            .     RCPI18
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9605            .          .        I19
                .          .          .
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9611            .      CPI19...........
                .         V
                .         V
9615            .     RCPI19
                .         .
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9622            .         .        I20
                .         .         .
                .         .         .
9628            .      CPI20...........
                .         V
                .         V
9632            .     RCPI20
                .         .
                .         .
9640            .         .        I21
                .         .         .
                .         .         .
9648            .      CPI21...........
                .         V
                .         V
9652            .     RCPI21
                .         .
                .         .
9659            .         .        I22
                .         .         .
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9667            .      CPI22...........
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                .         .
9671            .         .        A40
                .         .         V
                .         .         V
9677            .         .     RCPA40
                .         .         .
                .         .         .
9685            .         .         .         A42
                .         .         .          .
                .         .         .          .
9691            .         .      CPA42...........
                .         .         .
                .         .         .
9694      A42RIV......................
                V
                V
9697      RCPA42
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9705            .        A13
                .         V
                .         V
9713            .     RCPA13
                .         .
                .         .
9721            .         .        A39
                .         .         .
                .         .         .
9729            .      CPA39...........
                .         V
                .         V
9733            .     RCPA39
                .         .
                .         .
9741            .         .        A43
                .         .         .
                .         .         .
9746            .      CPA43...........
                .         V
                .         V
9750            .     RCPA43
                .         .
                .         .
9758            .         .        A44
                .         .         .
                .         .         .
9763            .      CPA44...........
                .         .
                .         .
9766      A44RIV...........
                V
                V
9770      RCPA44
                .
                .
9778            .        I24
                .         V
                .         V
9785            .     RCPI24
                .         .
                .         .
9793            .         .       I26B
                .         .         V
                .         .         V
9800            .         .     RCI26B
                .         .         .
                .         .         .
9808            .         .         .        I26A
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9814            .     CPI26A......................
                .         V
                .         V
9818            .     RCI26A
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 9826          .           .         I28
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 9832          .       CPI28...........
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               .           V
 9836          .      RCPI28
               .           .
               .           .
 9844          .           .         I30
               .           .           .
               .           .           .
 9850          .       CPI30...........
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               .           V
 9854          .      RCPI30
               .           .
               .           .
 9862          .           .         I32
               .           .           .
               .           .           .
 9870          .       CPI32...........
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               .           V
 9874          .      RCPI32
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               .           .
 9882          .           .         I34
               .           .           .
               .           .           .
 9889          .       CPI34...........
               .           V
               .           V
 9893          .      RCPI34
               .           .
               .           .
 9901          .           .         I36
               .           .           .
               .           .           .
 9907          .       CPI36...........
               .           .
               .           .
 9910     I36RIV...........
               V
               V
 9913     RCPI36
               .
               .
 9921          .         A01
               .           .
               .           .
 9931          .           .-------> DVA01A
 9928          .       DA01A
               .           .
               .           .
 9937          .           .-------> DVA01B
 9934          .       DA01B
               .           V
               .           V
 9941          .      RCPA01
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               .           .
 9948          .           .         A11
               .           .           .
               .           .           .
 9957          .       CPA11...........
               .           .
               .           .
 9963          .           .------->  DVA11
 9960          .        DA11
               .           V
               .           V
 9967          .      RCPA11
               .           .
               .           .
 9974          .           .         A14
               .           .           .
               .           .           .
 9982          .       CPA14...........
               .           V
               .           V
 9986          .      RCPA14
               .           .
               .           .
 9993          .           .         A38
               .           .           V
               .           .           V
10001          .           .      RCPA38
               .           .           .
               .           .           .
10008          .           .           .         A37
               .           .           .           .
               .           .           .           .
10015          .       CPA37........................
               .           V
               .           V
10019          .      RCPA37
               .           .
               .           .
10027          .           .         A45
               .           .           .
               .           .           .
10033          .       CPA45...........
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               .           .
10037          .           .         I23
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                 .           .           V
                 .           .           V
10043            .           .      RCPI23
                 .           .           .
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10050            .           .           .         I25
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                 .           .           .           .
10056            .           .      CPI25............
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                 .           .           V
10060            .           .      RCPI25
                 .           .           .
                 .           .           .
10068            .           .           .         I27
                 .           .           .           .
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10074            .           .      CPI27............
                 .           .           V
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10078            .           .      RCPI27
                 .           .           .
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10086            .           .           .         I29
                 .           .           .           .
                 .           .           .           .
10092            .           .      CPI29............
                 .           .           V
                 .           .           V
10096            .           .      RCPI29
                 .           .           .
                 .           .           .
10104            .           .           .         I31
                 .           .           .           .
                 .           .           .           .
10111            .           .      CPI31............
                 .           .           V
                 .           .           V
10115            .           .      RCPI31
                 .           .           .
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10123            .           .           .         I33
                 .           .           .           .
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10129            .           .      CPI33............
                 .           .           V
                 .           .           V
10133            .           .      RCPI33
                 .           .           .
                 .           .           .
10140            .           .           .         I35
                 .           .           .           .
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10146            .           .      CPI35............
                 .           .           V
                 .           .           V
10150            .           .      RCPI35
                 .           .           .
                 .           .           .
10158            .           .           .         I37
                 .           .           .           .
                 .           .           .           .
10164            .           .      CPI37............
                 .           .           .
                 .           .           .
10167       I37RIV........................
                 V
                 V
10170       RCPI37
                 .
                 .
10178            .        A36
                 .          V
                 .          V
10184            .      RCPA36
                 .           .
                 .           .
10191            .           .        A46
                 .           .          .
                 .           .          .
10197            .      CPA46............
                 .           .
                 .           .
10200       A46RIV............
                 V
                 V
10203       RCPA46
                 .
                 .
10211            .        I38
                 .          V
                 .          V
10218            .      RCPI38
                 .           .
                 .           .
10226            .           .        I39
                 .           .          .
                 .           .          .
10232            .      CPI39............
                 .          V
                 .          V
10236            .      RCPI39
                 .           .
                 .           .
10244            .           .        I40
                 .           .          .
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10250          .       CPI40............
               .           V
               .           V
10254          .      RCPI40
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10262          .           .         I41
               .           .           .
               .           .           .
10268          .       CPI41............
               .           V
               .           V
10272          .      RCPI41
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               .
10280          .           .         I42
               .           .           .
               .           .           .
10287          .       CPI42............
               .           V
               .           V
10291          .      RCPI42
               .
               .
10299          .           .         I43
               .           .           .
               .           .           .
10305          .       CPI43............
               .           V
               .           V
10309          .      RCPI43
               .
               .
10316          .           .        I44B
               .           .           V
               .           .           V
10323          .           .      RCI44B
               .           .
               .           .
10330          .           .           .        I44A
               .           .           .          .
               .           .           .          .
10336          .           .      CPI44A............
               .           .           V
               .           .           V
10340          .           .      RCI44A
               .           .
               .           .
10348          .           .           .         I45
               .           .           .          .
               .           .           .          .
10354          .           .       CPI45............
               .           .           V
               .           .           V
10358          .           .      RCPI45
               .           .
               .           .
10366          .           .           .         I46
               .           .           .          .
               .           .           .          .
10372          .           .       CPI46............
               .           .           V
               .           .           V
10376          .           .      RCPI46
               .           .
               .           .
10384          .           .           .         I47
               .           .           .          .
               .           .           .          .
10390          .           .       CPI47............
               .           .           V
               .           .           V
10394          .           .      RCPI47
               .           .
               .           .
10402          .           .           .         I48
               .           .           .          .
               .           .           .          .
10408          .           .       CPI48............
               .           .           V
               .           .           V
10412          .           .      RCPI48
               .           .
               .           .
10420          .           .           .         I49
               .           .           .          .
               .           .           .          .
10426          .       CPI49........................
               .           V
               .           V
10430          .      RCPI49
               .
               .
10438          .           .         I61
               .           .           V
               .           .           V
10444          .           .      RCPI61
               .           .
               .           .
10452          .           .           .         I50
               .           .           .          .
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10457          .       CPI50........................
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10460      I50RIV............
                V
                V
10463      RCPI50
                .
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10471           .         I62
                .           .
                .           .
10476      I62RIV............
                V
                V
10479      RCPI62
                .
                .
10488           .           .<-------   DVA11
10486           .       DRA11
                .           V
                .           V
10490           .       RDA11
                .           .
                .           .
10497           .           .         A15
                .           .           .
                .           .           .
10504           .       CPA15............
                .           .
                .           .
10508           .           .         A16
                .           .           .
                .           .           .
10515           .       CPA16............
                .           V
                .           V
10519           .      RCPA16
                .           .
                .           .
10527           .           .           .<-------  DVA01A
10525           .           .      DRA01A
                .           .           V
                .           .           V
10529           .           .      RDA01A
                .           .           .
                .           .           .
10537           .           .           .         A03
                .           .           .           .
                .           .           .           .
10543           .           .       CPA03............
                .           .           V
                .           .           V
10546           .           .      RCPA03
                .           .           .
                .           .           .
10554           .           .           .         A65
                .           .           .           .
                .           .           .           .
10562           .           .       CPA65............
                .           .           V
                .           .           V
10566           .           .      RCPA65
                .           .           .
                .           .           .
10573           .           .           .         A64
                .           .           .           .
                .           .           .           .
10579           .           .       CPA64............
                .           .           .
                .           .           .
10586           .           .           .------->   DVA64
10583           .           .        DA64
                .           .           V
                .           .           V
10590           .           .      RCPA64
                .           .           .
                .           .           .
10598           .           .           .           .<-------  DVA01B
10596           .           .           .      DRA01B
                .           .           .           V
                .           .           .           V
10600           .           .           .      RDA01B
                .           .           .           .
                .           .           .           .
10607           .           .           .           .         A10
                .           .           .           .           .
                .           .           .           .           .
10615           .           .       CPA10........................
                .           .           .
                .           .           .
10622           .           .           .------->   DVA10
10619           .           .        DA10
                .           .           V
                .           .           V
10626           .           .      RCPA10
                .           .           .
                .           .           .
10633           .           .           .         A34
                .           .           .           .
                .           .           .           .
10639           .           .       CPA34............
                .           .           V
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10643           .           .      RCPA34
                .           .           .
                .           .           .
10650           .           .           .         A35
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10656          .       CPA35.......................
               .          V
               .          V
10660          .      RCPA35
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10667          .           .         A47
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               .           .           .
10674          .       CPA47............
               .          V
               .          V
10678          .      RCPA47
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               .
10685          .           .         A48
               .           .           V
               .           .           V
10691          .           .      RCPA48
               .           .
               .           .           .
10698          .           .           .         A49
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               .           .           .           .
10704          .       CPA49.......................
               .           .
               .           .
10707     A49RIV............
               V
               V
10711     RCPA49
               .
               .
10719          .         A04
               .           .
               .           .
10730          .           .-------->   DVA04
10727          .        DA04
               .          V
               .          V
10733          .      RCPA04
               .           .
               .           .
10742          .           .         A07
               .           .           .
               .           .           .
10750          .       CPA07............
               .           .
               .           .
10757          .           .-------->   DVA07
10754          .        DA07
               .          V
               .          V
10761          .      RCPA07
               .           .
               .           .
10768          .           .         A09
               .           .           .
               .           .           .
10779          .           .           .-------->   DVA09
10776          .           .        DA09
               .           .          V
               .           .          V
10783          .           .      RCPA09
               .           .           .
               .           .           .
10790          .           .           .         A08
               .           .           .           .
               .           .           .           .
10799          .           .       CPA08............
               .           .           .
               .           .           .
10806          .           .           .-------->   DVA08
10803          .           .        DA08
               .           .          V
               .           .          V
10810          .           .      RCPA08
               .           .           .
               .           .           .
10817          .           .           .         A21
               .           .           .           .
               .           .           .           .
10825          .       CPA21.......................
               .           .
               .           .
10832          .           .-------->   DVA21
10829          .        DA21
               .          V
               .          V
10836          .      RCPA21
               .           .
               .           .
10843          .           .         A20
               .           .           .
               .           .           .
10850          .       CPA20............
               .           .
               .           .
10857          .           .-------->   DVA20
10854          .        DA20
               .          V
               .          V
10861          .      RCPA20
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10868          .          .        A51
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               .          .          .
10875          .     CPA51A...........
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               .          .
10880          .          .      .<-------   DVA09
10878          .          .    DRA09
               .          .        V
               .          .        V
10882          .          .    RDA09
               .          .          .
               .          .          .
10890          .          .          .      .<-------   DVA64
10888          .          .          .    DRA64
               .          .          .        V
               .          .          .        V
10892          .          .          .    RDA64
               .          .          .          .
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10899          .          .          .          .        A18
               .          .          .          .          .
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10907          .          .    CPA18.......................
               .          .          .
               .          .          .
10914          .          .          .-------->   DVA18
10911          .          .     DA18
               .          .        V
               .          .        V
10918          .          .   RCPA18
               .          .          .
               .          .          .
10926          .          .          .      .<-------   DVA08
10924          .          .          .    DRA08
               .          .          .        V
               .          .          .        V
10928          .          .          .    RDA08
               .          .          .          .
               .          .          .          .
10935          .          .          .          .        A19
               .          .          .          .          .
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10942          .          .          .     CPA19A...........
               .          .          .          .
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10946          .          .    CPA19...........
               .          .        V
               .          .        V
10950          .          .   RCPA19
               .          .          .
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10958          .          .          .        A63
               .          .          .          .
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10964          .          .   CPA63A...........
               .          .          .
               .          .          .
10969          .          .          .      .<-------   DVA10
10967          .          .          .    DRA10
               .          .          .        V
               .          .          .        V
10971          .          .          .    RDA10
               .          .          .          .
               .          .          .          .
10978          .          .          .          .        A17
               .          .          .          .          .
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10986          .          .          .    CPA17...........
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10991          .          .          .          .          .<-------   DVA18
10989          .          .          .          .       DRA18
               .          .          .          .          V
               .          .          .          .          V
10993          .          .          .          .       RDA18
               .          .          .          .          .
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11000          .          .          .          .          .         A33
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11006          .          .          .          .     CPA33A...........
               .          .          .          .          .
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11010          .          .          .    CPA33...........
               .          .          .        V
               .          .          .        V
11014          .          .          .   RCPA33
               .          .          .          .
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11022          .          .    CPA63...........
               .          .        V
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11026          .          .   RCPA63
               .          .          .
               .          .          .
11034          .          .          .        A50
               .          .          .          .
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11043          .          .    CPA50...........
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11047          .          .   RCPA50
               .          .          .
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11054          .     CPA51...........
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11057     A51RIV............
                V
                V
11060     RCPA51
                .
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11068           .        A05
                .          V
                .          V
11076           .     RCPA05
                .          .
                .          .
11083           .          .        A23
                .          .          V
                .          .          V
11091           .          .     RCPA23
                .          .          .
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11098           .          .          .        A25
                .          .          .          V
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11106           .          .          .     RCPA25
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                .          .          .          .
11113           .          .          .          .        A26
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11120           .     CPA26.................................
                .          V
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11124           .     RCPA26
                .          .
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11131           .          .        A27
                .          .          .
                .          .          .
11138           .     CPA27A............
                .          .
                .          .
11142           .          .        A28
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11150           .          .     RCPA28
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                .          .          .
11156           .     CPA27............
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                .          V
11160           .     RCPA27
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                .          .
11167           .          .        A29
                .          .          .
                .          .          .
11175           .     CPA29............
                .          .
                .          .
11180           .          .          .<-------   DVA04
11178           .          .     DRA04
                .          .          V
                .          .          V
11182           .          .     RDA04
                .          .          .
                .          .          .
11189           .          .          .        A06
                .          .          .          .
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11198           .          .     CPA06............
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11202           .          .     RCPA06
                .          .          .
                .          .          .
11210           .          .          .          .<-------   DVA07
11208           .          .          .     DRA07
                .          .          .          V
                .          .          .          V
11212           .          .          .     RDA07
                .          .          .          .
                .          .          .          .
11219           .          .          .          .        A22
                .          .          .          .          .
                .          .          .          .          .
11227           .          .          .     CPA22............
                .          .          .          V
                .          .          .          V
11231           .          .          .     RCPA22
                .          .          .          .
                .          .          .          .
11238           .          .          .          .        A24
                .          .          .          .          .
                .          .          .          .          .
11247           .          .     CPA24........................
                .          .          V
                .          .          V
11251           .          .     RCPA24
                .          .          .
                .          .          .
11258           .          .          .        A30
                .          .          .          .
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11267           .          .     CPA30A............
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11271          .      CPA30...........
               .          V
               .          V
11275          .     RCPA30
               .          .
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11282          .          .        A52
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               .          .          .
11289          .     CPA52A..........
               .          .
               .          .
11293          .          .        A31
               .          .          V
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11301          .          .     RCPA31
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               .          .          .
11309          .          .          .<-------   DVA21
11307          .          .      DRA21
               .          .          V
               .          .          V
11311          .          .      RDA21
               .          .          .
               .          .          .
11319          .          .          .           .<-------   DVA20
11317          .          .          .      DRA20
               .          .          .          V
               .          .          .          V
11320          .          .          .      RDA20
               .          .          .          .
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11327          .          .          .          .        A32
               .          .          .          .          .
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11335          .          .     CPA32A......................
               .          .          .
               .          .          .
11339          .      CPA32...........
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11343          .     RCPA32
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11349          .      CPA52...........
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11353          .     RCPA52
               .          .
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11360          .          .        A53
               .          .          .
               .          .          .
11368          .          .          .        A54
               .          .          .          .
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11375          .          .      CPA54...........
               .          .          V
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11379          .          .     RCPA54
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11386          .          .          .        A55
               .          .          .          .
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11393          .          .     CPA55A..........
               .          .          .
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11397          .      CPA55...........
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               .          V
11401          .     RCPA55
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               .          .
11408          .          .        A56
               .          .          .
               .          .          .
11415          .      CPA56...........
               .          .
               .          .
11418     A56RIV...........
               V
               V
11421     RCPA56
               .
               .
11429          .        I51
               .          V
               .          V
11435          .     RCPI51
               .          .
               .          .
11443          .          .        I53
               .          .          .
               .          .          .
11448          .      CPI53...........
               .          V
               .          V
11452          .     RCPI53
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               .          .
11460          .          .        I55
               .          .          .
               .          .          .
11465          .      CPI55...........
               .          V
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11469                                                        RCPI55
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                                                                  .
11477                                                             .         I57
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11482                                                         CPI57............
                                                                  V
                                                                  V
11486                                                        RCPI57
                                                                  .
                                                                  .
11494                                                             .         I72
                                                                  .           .
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11499                                                         CPI72............
                                                                  V
                                                                  V
11503                                                        RCPI72
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11511                                                             .        I60C
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11516                                                        CPI60C............
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11520                                                             .        I59
                                                                  .          V
                                                                  .          V
11526                                                             .      RCPI59
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11534                                                             .           .       I60B
                                                                  .           .          V
                                                                  .           .          V
11540                                                             .           .      RCI60B
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11548                                                             .           .           .        I60A
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11553                                                        CPI60B...................................
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11556                                                             .         I52
                                                                  .          V
                                                                  .          V
11563                                                             .      RCPI52
                                                                  .           .
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11571                                                             .           .         I54
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11576                                                             .       CPI54............
                                                                  .          V
                                                                  .          V
11580                                                             .      RCPI54
                                                                  .           .
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11588                                                             .           .         I56
                                                                  .           .           .
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11593                                                             .       CPI56............
                                                                  .          V
                                                                  .          V
11597                                                             .      RCPI56
                                                                  .           .
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11604                                                             .           .        I58B
                                                                  .           .           .
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11609                                                             .      CPI58B............
                                                                  .          V
                                                                  .          V
11613                                                             .      RCI58B
                                                                  .           .
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11620                                                             .           .        I58A
                                                                  .           .           .
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11625                                                             .      CPI58A............
                                                                  .          V
                                                                  .          V
11629                                                             .      RCI58A
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11637                                                             .           .         I64
                                                                  .           .           .
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11643                                                             .       CPI64............
                                                                  .          V
                                                                  .          V
11647                                                             .      RCPI64
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11654                                                             .           .         I65
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11659                                                             .       CPI65............
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11662                                                        CPI60A............
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                                                                  V
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11666          .      RCI60A
               .          .
               .          .
11673          .          .        I66
               .          .          .
               .          .          .
11678          .      CPI66...........
               .          V
               .          V
11682          .      RCPI66
               .          .
               .          .
11689          .          .        I67
               .          .          .
               .          .          .
11695          .          .          .        I68
               .          .          .          .
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11701          .          .          .          .        I69
               .          .          .          .          .
               .          .          .          .          .
11706          .      CPI67..................................
               .          V
               .          V
11710          .      RCPI67
               .          .
               .          .
11717          .          .        I70
               .          .          .
               .          .          .
11723          .          .          .        I71
               .          .          .          .
               .          .          .          .
11728          .      CPI70........................
               .          V
               .          V
11732          .      RCPI71
               .          .
               .          .
11739          .          .        I63
               .          .          .
               .          .          .
11744          .      CPI63...........
               .          .
               .          .
11747      I63RIV...........
               V
               V
11750      RCPI63
               .
               .
11758          .        A57
               .          .
               .          .
11764      A57RIV...........
               V
               V
11767      RCPA57
               .
               .
11775          .        A58
               .          .
               .          .
11782          .          .        A59
               .          .          .
               .          .          .
11787          .      CPA59...........
               .          V
               .          V
11791          .      RCPA59
               .          .
               .          .
11798          .          .        A60
               .          .          .
               .          .          .
11803          .      CPA60...........
               .          .
               .          .
11806      A60RIV...........
               V
               V
11811      RCPA60
               .
               .
11818          .        A61
               .          .
               .          .
11825          .          .        A62
               .          .          .
               .          .          .
11830      A62RIV........................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             JUN   1998               *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   05OCT12  TIME  13:46:03  *
*                                      *
****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
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                    FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
                    WATERMAN WASH - Contract # FCD 2006C029

                    Prepared by:
                    URS Corporation
                    7720 N. 16th Street, Suite 100
                    Phoenix, Arizona   85020

                    01/09/09  Filename:  With Railroad.IH1
                                Last Revised: 06/01/11

                    1. The following model is modeled with the Union Pacific railroad
                       embankment located adjacent to SR-238.
                    2. The storm used was 100-year, 24-hour.
                    3. S-graph was the unit hydrograph.
                    4. Time step of 10 minutes.
                    5. A point rainfall of 3.4 inches from NOAA 14 with Maricopa County Areal
                       reduction.
                    6. Green-Ampt loss methods were used. Normal depth Channel routing.
                    7. The sub-basin parameters were generated using FCDMC's DDMSW software.
                    8. The contributing area was calculated by estimating the amount of flow
                       in each routing reach.

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

   IT        HYDROGRAPH TIME DATA
                   NMIN         10  MINUTES IN COMPUTATION INTERVAL
                  IDATE      1    0  STARTING DATE
                  ITIME       0000  STARTING TIME
                     NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                 NDDATE      3    0  ENDING DATE
                 NDTIME       0150  ENDING TIME
                  ICENT         19  CENTURY MARK

            COMPUTATION INTERVAL    0.17 HOURS
                 TOTAL TIME BASE   49.83 HOURS

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

26 JD        INDEX STORM NO. 1
                  STRM       3.44  PRECIPITATION DEPTH
                  TRDA       0.00  TRANSPOSITION DRAINAGE AREA

27 PI          PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                 0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00

37 JD        INDEX STORM NO. 2
                  STRM       3.27  PRECIPITATION DEPTH
                  TRDA      10.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                 0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00

38 JD        INDEX STORM NO. 3
                  STRM       3.09  PRECIPITATION DEPTH
                  TRDA      30.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                 0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

 39 JD        INDEX STORM NO. 4
                STRM        2.99  PRECIPITATION DEPTH
                TRDA       60.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

 40 JD        INDEX STORM NO. 5
                STRM        2.93  PRECIPITATION DEPTH
                TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00
        WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
1
                                                RUNOFF SUMMARY
                                        FLOW IN CUBIC FEET PER SECOND
                                      TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK   TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION          FLOW    PEAK                                          AREA      STAGE     MAX STAGE
+                                                            6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                           C04           183.   12.17        10.          3.          1.       0.23

        ROUTED TO
+                         RCPC04          101.   12.50        10.          3.          1.       0.23

        HYDROGRAPH AT
+                           C12           161.   12.33        10.          2.          1.       0.20

        2 COMBINED AT
+                          CPC12          204.   12.33        20.          5.          2.       0.44

        DIVERSION TO
+                          DVC12          104.   12.33        10.          3.          1.       0.44

        HYDROGRAPH AT
+                           DC12          100.   12.33        10.          2.          1.       0.44

        ROUTED TO
+                         RCPC12           66.   12.67        10.          2.          1.       0.44

        HYDROGRAPH AT
+                           C13           328.   12.50        28.          7.          3.       0.52

        2 COMBINED AT
+                          CPC13          369.   12.50        37.          9.          4.       0.73

        DIVERSION TO
+                          DVC13          313.   12.50        35.          9.          4.       0.73

        HYDROGRAPH AT
+                           DC13           55.   12.50         2.          1.          0.       0.73

        ROUTED TO
+                         RCPC13           36.   12.50         2.          1.          0.       0.73

        HYDROGRAPH AT
+                           C11           171.   12.33        15.          4.          2.       0.29

        DIVERSION TO
+                          DVC11           76.   12.33         6.          2.          1.       0.29

        HYDROGRAPH AT
+                           DC11           94.   12.33         8.          2.          1.       0.29

        ROUTED TO
+                         RCPC11           69.   12.83         8.          2.          1.       0.29
```

+	HYDROGRAPH AT	DRC12	104.	12.33	10.	3.	1.	0.44
+	ROUTED TO	RDC12	68.	12.83	10.	3.	1.	0.44
+	HYDROGRAPH AT	C31	86.	12.33	5.	1.	1.	0.10
+	4 COMBINED AT	CPC31	158.	12.67	26.	6.	3.	0.65
+	DIVERSION TO	DVC31	67.	12.67	14.	4.	2.	0.65
+	HYDROGRAPH AT	DC31	92.	12.67	12.	3.	1.	0.65
+	ROUTED TO	RCPC31	86.	12.83	12.	3.	1.	0.65
+	HYDROGRAPH AT	DRC11	76.	12.33	6.	2.	1.	0.29
+	ROUTED TO	RDC11	53.	12.83	6.	2.	1.	0.29
+	HYDROGRAPH AT	C14	157.	12.33	11.	3.	1.	0.22
+	3 COMBINED AT	CPC14	181.	12.33	29.	7.	4.	0.77
+	DIVERSION TO	DVC14	157.	12.33	27.	7.	3.	0.77
+	HYDROGRAPH AT	DC14	23.	12.33	2.	1.	0.	0.77
+	ROUTED TO	RCPC14	14.	12.67	2.	1.	0.	0.77
+	HYDROGRAPH AT	C05	185.	12.17	11.	3.	1.	0.23
+	ROUTED TO	RCPC05	59.	13.00	11.	3.	1.	0.23
+	HYDROGRAPH AT	C03	229.	12.33	13.	3.	2.	0.29
+	DIVERSION TO	DVC03	126.	12.33	7.	2.	1.	0.29
+	HYDROGRAPH AT	DC03	103.	12.33	6.	1.	1.	0.29
+	ROUTED TO	RCPC03	46.	12.67	6.	1.	1.	0.29
+	HYDROGRAPH AT	C09	107.	12.33	7.	2.	1.	0.14
+	2 COMBINED AT	CPC09	124.	12.33	13.	3.	2.	0.43
+	DIVERSION TO	DVC09	58.	12.33	6.	2.	1.	0.43
+	HYDROGRAPH AT	DC09	66.	12.33	7.	2.	1.	0.43
+	ROUTED TO	RCPC09	47.	12.67	7.	2.	1.	0.43
+	HYDROGRAPH AT	C15	109.	12.33	7.	2.	1.	0.09
+	2 COMBINED AT	CPC15	118.	12.33	14.	3.	2.	0.24
+	DIVERSION TO	DVC15	115.	12.33	14.	3.	2.	0.24
+	HYDROGRAPH AT	DC15	3.	12.33	0.	0.	0.	0.24
+	ROUTED TO	RCPC15	1.	13.17	0.	0.	0.	0.24
+	HYDROGRAPH AT	C10	308.	12.50	29.	7.	3.	0.55
+	4 COMBINED AT	CPC10	319.	12.50	41.	10.	5.	1.00
+	DIVERSION TO	DVC10	53.	12.50	15.	4.	2.	1.00
+	HYDROGRAPH AT	DC10	266.	12.50	26.	7.	3.	1.00
+	ROUTED TO	RCPC10	197.	12.83	26.	7.	3.	1.00
	HYDROGRAPH AT							

+		DRC03	126.	12.33	7.	2.	1.	0.29
+	ROUTED TO	RDC03	61.	12.67	7.	2.	1.	0.29
+	HYDROGRAPH AT	C06	248.	12.33	18.	5.	2.	0.35
+	2 COMBINED AT	CPC06	255.	12.33	26.	6.	3.	0.51
+	DIVERSION TO	DVC06	127.	12.33	13.	3.	2.	0.51
+	HYDROGRAPH AT	DC06	128.	12.33	13.	3.	2.	0.51
+	ROUTED TO	RCPC06	118.	12.50	13.	3.	2.	0.51
+	HYDROGRAPH AT	DRC09	58.	12.33	6.	2.	1.	0.43
+	ROUTED TO	RDC09	44.	12.50	6.	2.	1.	0.43
+	HYDROGRAPH AT	C16	106.	12.33	7.	2.	1.	0.13
+	3 COMBINED AT	CPC16	217.	12.50	26.	6.	3.	0.51
+	ROUTED TO	RCPC16	189.	12.83	26.	6.	3.	0.51
+	HYDROGRAPH AT	DRC06	127.	12.33	13.	3.	2.	0.51
+	ROUTED TO	RDC06	101.	12.50	13.	3.	2.	0.51
+	HYDROGRAPH AT	C18	103.	12.17	6.	1.	1.	0.08
+	2 COMBINED AT	CPC18	115.	12.17	18.	5.	2.	0.33
+	DIVERSION TO	DVC18	8.	12.17	1.	0.	0.	0.33
+	HYDROGRAPH AT	DC18	107.	12.17	18.	4.	2.	0.33
+	ROUTED TO	RCPC18	99.	12.50	17.	4.	2.	0.33
+	HYDROGRAPH AT	C17	116.	12.33	7.	2.	1.	0.12
+	2 COMBINED AT	CPC17	205.	12.33	25.	6.	3.	0.42
+	DIVERSION TO	DVC17	194.	12.33	24.	6.	3.	0.42
+	HYDROGRAPH AT	DC17	11.	12.33	1.	0.	0.	0.42
+	ROUTED TO	RCPC17	3.	12.67	1.	0.	0.	0.42
+	HYDROGRAPH AT	DRC15	115.	12.33	14.	3.	2.	0.24
+	ROUTED TO	RDC15	74.	12.67	14.	3.	2.	0.24
+	HYDROGRAPH AT	C30	265.	12.33	17.	4.	2.	0.23
+	5 COMBINED AT	CPC30	445.	12.83	82.	21.	10.	1.99
+	DIVERSION TO	DVC30	324.	12.83	70.	18.	8.	1.99
+	HYDROGRAPH AT	DC30	120.	12.83	12.	3.	1.	1.99
+	ROUTED TO	RCPC30	81.	13.00	12.	3.	1.	1.99
+	HYDROGRAPH AT	C02	117.	12.17	6.	1.	1.	0.13
+	ROUTED TO	RCPC02	32.	13.00	6.	1.	1.	0.13
+	HYDROGRAPH AT	C01	328.	12.17	19.	5.	2.	0.45
+	ROUTED TO	RCPC01	146.	12.83	19.	5.	2.	0.45
+	HYDROGRAPH AT	C08	518.	12.50	44.	11.	5.	0.87

+	ROUTED TO	RCPC08	397.	12.67	44.	11.	5.	0.87
+	HYDROGRAPH AT	C07	684.	12.50	57.	14.	7.	1.18
+	4 COMBINED AT	CPC07	1095.	12.50	124.	31.	15.	2.41
+	DIVERSION TO	DVC07	339.	12.50	35.	9.	4.	2.41
+	HYDROGRAPH AT	DC07	757.	12.50	89.	22.	11.	2.41
+	ROUTED TO	RCPC07	601.	12.67	89.	22.	11.	2.41
+	HYDROGRAPH AT	DRC18	8.	12.17	1.	0.	0.	0.33
+	ROUTED TO	RDC18	5.	12.83	1.	0.	0.	0.33
+	HYDROGRAPH AT	C19	262.	12.33	17.	4.	2.	0.26
+	3 COMBINED AT	CPC19	618.	12.67	106.	26.	13.	2.08
+	DIVERSION TO	DVC19	361.	12.67	65.	16.	8.	2.08
+	HYDROGRAPH AT	DC19	257.	12.67	41.	10.	5.	2.08
+	ROUTED TO	RCPC19	220.	13.00	41.	10.	5.	2.08
+	HYDROGRAPH AT	DRC17	194.	12.33	24.	6.	3.	0.42
+	ROUTED TO	RDC17	146.	12.67	24.	6.	3.	0.42
+	HYDROGRAPH AT	C29	358.	12.33	23.	6.	3.	0.34
+	4 COMBINED AT	CPC29	455.	12.33	99.	25.	12.	3.95
+	DIVERSION TO	DVC29	148.	12.33	38.	9.	5.	3.95
+	HYDROGRAPH AT	DC29	307.	12.33	61.	15.	7.	3.95
+	ROUTED TO	RCPC29	318.	12.50	61.	15.	7.	3.95
+	HYDROGRAPH AT	C28	85.	12.17	4.	1.	1.	0.05
+	2 COMBINED AT	CPC28	319.	12.50	66.	16.	8.	2.78
+	DIVERSION TO	DVC28	168.	12.50	41.	10.	5.	2.78
+	HYDROGRAPH AT	DC28	151.	12.50	25.	6.	3.	2.78
+	ROUTED TO	RCPC28	118.	12.67	25.	6.	3.	2.78
+	HYDROGRAPH AT	DRC19	361.	12.67	65.	16.	8.	2.08
+	ROUTED TO	RDC19	323.	12.83	64.	16.	8.	2.08
+	HYDROGRAPH AT	C27	219.	12.33	14.	3.	2.	0.21
+	3 COMBINED AT	CPC27	439.	12.83	102.	26.	12.	2.82
+	DIVERSION TO	DVC27	214.	12.83	62.	16.	8.	2.82
+	HYDROGRAPH AT	DC27	224.	12.83	40.	10.	5.	2.82
+	ROUTED TO	RCPC27	215.	13.00	40.	10.	5.	2.82
+	HYDROGRAPH AT	DRC07	339.	12.50	35.	9.	4.	2.41
+	ROUTED TO	RDC07	178.	13.00	35.	9.	4.	2.41
+	HYDROGRAPH AT	C21	395.	12.17	24.	6.	3.	0.56

+	DIVERSION TO	DVC21	277.	12.17	18.	4.	2.	0.56
+	HYDROGRAPH AT	DC21	119.	12.17	6.	2.	1.	0.56
+	ROUTED TO	RCPC21	49.	12.50	6.	2.	1.	0.56
+	HYDROGRAPH AT	C20	294.	12.50	25.	6.	3.	0.46
+	4 COMBINED AT	CPC20	455.	12.50	105.	26.	13.	3.26
+	DIVERSION TO	DVC20	378.	12.50	94.	24.	11.	3.26
+	HYDROGRAPH AT	DC20	77.	12.50	11.	3.	1.	3.26
+	ROUTED TO	RCPC20	60.	13.17	11.	3.	1.	3.26
+	HYDROGRAPH AT	C26	88.	12.33	5.	1.	1.	0.10
+	2 COMBINED AT	CPC26	90.	12.33	17.	4.	2.	0.79
+	DIVERSION TO	DVC26	90.	12.33	17.	4.	2.	0.79
+	HYDROGRAPH AT	DC26	0.	0.00	0.	0.	0.	0.79
+	ROUTED TO	RCPC26	0.	0.00	0.	0.	0.	0.79
+	HYDROGRAPH AT	DRC21	277.	12.17	18.	4.	2.	0.56
+	ROUTED TO	RDC21	128.	12.67	18.	4.	2.	0.56
+	HYDROGRAPH AT	C23	387.	12.17	24.	6.	3.	0.50
+	ROUTED TO	RCPC23	308.	12.33	24.	6.	3.	0.50
+	HYDROGRAPH AT	C22	627.	12.33	40.	10.	5.	0.80
+	4 COMBINED AT	CPC22	935.	12.33	81.	20.	10.	1.69
+	HYDROGRAPH AT	C24	142.	12.33	9.	2.	1.	0.16
+	2 COMBINED AT	CPC24	1073.	12.33	89.	22.	11.	1.85
+	ROUTED TO	PNDC01	820.	12.50	89.	22.	11.	1.85
+	DIVERSION TO	DVC24	820.	12.50	89.	22.	11.	1.85
+	HYDROGRAPH AT	DC24	0.	0.00	0.	0.	0.	1.85
+	ROUTED TO	RCPC24	0.	0.00	0.	0.	0.	1.85
+	HYDROGRAPH AT	C25	90.	12.17	4.	1.	0.	0.08
+	2 COMBINED AT	CPC25	90.	12.17	4.	1.	0.	0.08
+	ROUTED TO	PNDC02	53.	12.33	4.	1.	1.	0.08
+	DIVERSION TO	DVC25	53.	12.33	4.	1.	1.	0.08
+	HYDROGRAPH AT	DC25	0.	0.00	0.	0.	0.	0.08
+	ROUTED TO	RCPC25	0.	0.00	0.	0.	0.	0.08
+	HYDROGRAPH AT	D02	422.	12.33	25.	6.	3.	0.50
+	DIVERSION TO	DVD02	58.	12.33	2.	1.	0.	0.50
+	HYDROGRAPH AT	DD02	364.	12.33	23.	6.	3.	0.50
+	ROUTED TO	RCPD02	289.	12.33	23.	6.	3.	0.50
	HYDROGRAPH AT							

+		D03	232.	12.33	16.	4.	2.	0.34
+	2 COMBINED AT	CPD03	517.	12.33	39.	10.	5.	0.77
+	DIVERSION TO	DVD03	304.	12.33	23.	6.	3.	0.77
+	HYDROGRAPH AT	DD03	213.	12.33	16.	4.	2.	0.77
+	ROUTED TO	RCPD03	142.	12.50	16.	4.	2.	0.77
+	HYDROGRAPH AT	D04	122.	12.33	8.	2.	1.	0.20
+	2 COMBINED AT	CPD04	223.	12.50	24.	6.	3.	0.51
+	DIVERSION TO	DVD04	126.	12.50	14.	3.	2.	0.51
+	HYDROGRAPH AT	DD04	97.	12.50	10.	3.	1.	0.51
+	ROUTED TO	RCPD04	59.	13.00	10.	3.	1.	0.51
+	HYDROGRAPH AT	DRD02	58.	12.33	2.	1.	0.	0.50
+	ROUTED TO	RDD02	8.	14.00	2.	1.	0.	0.50
+	HYDROGRAPH AT	DRD03	304.	12.33	23.	6.	3.	0.77
+	ROUTED TO	RDD03	150.	13.00	22.	6.	3.	0.77
+	HYDROGRAPH AT	D01	1101.	12.50	119.	30.	14.	2.43
+	4 COMBINED AT	CPD01	1107.	12.67	153.	38.	18.	3.17
+	DIVERSION TO	DVD01	763.	12.67	119.	30.	14.	3.17
+	HYDROGRAPH AT	DD01	343.	12.67	34.	9.	4.	3.17
+	ROUTED TO	RDD01	169.	13.33	34.	9.	4.	3.17
+	HYDROGRAPH AT	D09	372.	12.50	32.	8.	4.	0.54
+	3 COMBINED AT	CPD09	368.	12.50	66.	17.	8.	1.75
+	DIVERSION TO	DVD09	368.	12.50	66.	17.	8.	1.75
+	HYDROGRAPH AT	DD09	0.	0.00	0.	0.	0.	1.75
+	ROUTED TO	RCPD09	0.	0.00	0.	0.	0.	1.75
+	HYDROGRAPH AT	D12	111.	12.33	7.	2.	1.	0.13
+	2 COMBINED AT	CPD12	111.	12.33	7.	2.	1.	0.14
+	DIVERSION TO	DVD12	111.	12.33	7.	2.	1.	0.14
+	HYDROGRAPH AT	DD12	0.	0.00	0.	0.	0.	0.14
+	ROUTED TO	RCPD12	0.	0.00	0.	0.	0.	0.14
+	HYDROGRAPH AT	DRD01	763.	12.67	119.	30.	14.	3.17
+	ROUTED TO	RCPD01	653.	13.17	118.	30.	14.	3.17
+	HYDROGRAPH AT	DRD04	126.	12.50	14.	3.	2.	0.51
+	ROUTED TO	RDD04	61.	14.17	14.	3.	2.	0.51
+	HYDROGRAPH AT	D05	724.	12.83	98.	24.	12.	1.93
+	3 COMBINED AT	CPD05	996.	13.17	227.	57.	28.	4.18
+	DIVERSION TO	DVD05	38.	13.17	7.	2.	1.	4.18

+	HYDROGRAPH AT	DD05	958.	13.17	220.	55.	27.	4.18
+	ROUTED TO	RDD05	805.	13.50	219.	55.	27.	4.18
+	HYDROGRAPH AT	D13	594.	12.33	44.	11.	5.	0.56
+	3 COMBINED AT	CPD13	805.	13.50	261.	66.	32.	4.58
+	DIVERSION TO	DVD13	790.	13.50	259.	66.	32.	4.58
+	HYDROGRAPH AT	DD13	14.	13.50	1.	0.	0.	4.58
+	ROUTED TO	RCPD13	6.	14.33	1.	0.	0.	4.58
+	HYDROGRAPH AT	D46	81.	12.17	5.	1.	1.	0.05
+	2 COMBINED AT	CPD46	81.	12.17	7.	2.	1.	0.15
+	DIVERSION TO	DVD46	81.	12.17	7.	2.	1.	0.15
+	HYDROGRAPH AT	DD46	0.	0.00	0.	0.	0.	0.15
+	ROUTED TO	RCPD46	0.	0.00	0.	0.	0.	0.15
+	HYDROGRAPH AT	D06	456.	12.67	48.	12.	6.	1.22
+	DIVERSION TO	DVD06	295.	12.67	32.	8.	4.	1.22
+	HYDROGRAPH AT	DD06	162.	12.67	17.	4.	2.	1.22
+	ROUTED TO	RCPD06	63.	14.00	16.	4.	2.	1.22
+	HYDROGRAPH AT	DRD06	295.	12.67	32.	8.	4.	1.22
+	ROUTED TO	RDD06	237.	12.83	32.	8.	4.	1.22
+	HYDROGRAPH AT	D08	192.	12.33	14.	4.	2.	0.28
+	2 COMBINED AT	CPD08	249.	12.83	46.	12.	6.	0.73
+	ROUTED TO	RCPD08	203.	13.50	45.	12.	6.	0.73
+	HYDROGRAPH AT	DRD05	38.	13.17	7.	2.	1.	4.18
+	ROUTED TO	RCPD05	34.	13.50	7.	2.	1.	4.18
+	HYDROGRAPH AT	D11	296.	12.50	26.	6.	3.	0.40
+	2 COMBINED AT	CPD11	295.	12.50	33.	8.	4.	0.56
+	ROUTED TO	RCPD11	199.	12.83	33.	8.	4.	0.56
+	HYDROGRAPH AT	D10	468.	12.67	57.	14.	7.	0.84
+	5 COMBINED AT	CPD10	631.	12.67	148.	38.	18.	2.95
+	DIVERSION TO	DVD10	619.	12.67	148.	37.	18.	2.95
+	HYDROGRAPH AT	DD10	11.	12.67	0.	0.	0.	2.95
+	ROUTED TO	RCPD10	5.	12.83	0.	0.	0.	2.95
+	HYDROGRAPH AT	D47	44.	12.17	2.	1.	0.	0.04
+	2 COMBINED AT	CPD47	43.	12.17	3.	1.	0.	0.16
+	DIVERSION TO	DVD47	43.	12.17	3.	1.	0.	0.16
+	HYDROGRAPH AT	DD47	0.	0.00	0.	0.	0.	0.16

+	ROUTED TO	RCPD47	0.	0.00	0.	0.	0.	0.16
+	HYDROGRAPH AT	D07	497.	12.67	57.	14.	7.	1.05
+	DIVERSION TO	DVD07	378.	12.67	48.	12.	6.	1.05
+	HYDROGRAPH AT	DD07	120.	12.67	9.	2.	1.	1.05
+	ROUTED TO	RDD07	44.	13.67	9.	2.	1.	1.05
+	HYDROGRAPH AT	D15	489.	12.50	51.	13.	6.	0.65
+	3 COMBINED AT	CPD15	487.	12.50	60.	15.	7.	0.95
+	DIVERSION TO	DVD15	487.	12.50	60.	15.	7.	0.95
+	HYDROGRAPH AT	DD15	0.	0.00	0.	0.	0.	0.95
+	ROUTED TO	RCPD15	0.	0.00	0.	0.	0.	0.95
+	HYDROGRAPH AT	DRD07	378.	12.67	48.	12.	6.	1.05
+	ROUTED TO	RCPD07	217.	13.50	47.	12.	6.	1.05
+	HYDROGRAPH AT	D17	425.	12.67	47.	12.	6.	0.78
+	3 COMBINED AT	CPD17	423.	12.67	94.	24.	11.	1.53
+	DIVERSION TO	DVD17	417.	12.67	94.	24.	11.	1.53
+	HYDROGRAPH AT	DD17	6.	12.67	0.	0.	0.	1.53
+	ROUTED TO	RCPD17	2.	13.00	0.	0.	0.	1.53
+	HYDROGRAPH AT	D18	257.	12.50	23.	6.	3.	0.43
+	2 COMBINED AT	CPD18	254.	12.50	23.	6.	3.	1.20
+	DIVERSION TO	DVD18	224.	12.50	22.	5.	3.	1.20
+	HYDROGRAPH AT	DD18	30.	12.50	1.	0.	0.	1.20
+	ROUTED TO	RCPD18	12.	12.67	1.	0.	0.	1.20
+	HYDROGRAPH AT	D19	186.	12.33	13.	3.	2.	0.25
+	2 COMBINED AT	CPD19	186.	12.33	14.	4.	2.	0.52
+	DIVERSION TO	DVD19	6.	12.33	0.	0.	0.	0.52
+	HYDROGRAPH AT	DD19	180.	12.33	14.	4.	2.	0.52
+	ROUTED TO	RCPD19	125.	12.67	14.	4.	2.	0.52
+	HYDROGRAPH AT	D20	98.	12.33	6.	1.	1.	0.11
+	2 COMBINED AT	CPD20	158.	12.33	20.	5.	2.	0.59
+	DIVERSION TO	DVD20	158.	12.33	20.	5.	2.	0.59
+	HYDROGRAPH AT	DD20	0.	0.00	0.	0.	0.	0.59
+	ROUTED TO	RCPD20	0.	0.00	0.	0.	0.	0.59
+	HYDROGRAPH AT	D21	70.	12.17	4.	1.	1.	0.08
+	2 COMBINED AT	CPD21	69.	12.17	4.	1.	1.	0.09
+	DIVERSION TO	DVD21	55.	12.17	4.	1.	0.	0.09
	HYDROGRAPH AT							

+		DD21	14.	12.17	1.	0.	0.	0.09
+	ROUTED TO	RCPD21	11.	12.67	1.	0.	0.	0.09
+	HYDROGRAPH AT	E33	49.	12.17	3.	1.	0.	0.05
+	2 COMBINED AT	CPE33	49.	12.17	3.	1.	0.	0.07
+	DIVERSION TO	DVE33	49.	12.17	3.	1.	0.	0.07
+	HYDROGRAPH AT	DE33	0.	0.00	**********		0.	0.07
+	ROUTED TO	RCPE33	0.	0.00	**********		0.	0.07
+	HYDROGRAPH AT	E17	570.	12.67	77.	19.	9.	1.48
+	ROUTED TO	RCPE17	418.	13.33	77.	19.	9.	1.48
+	HYDROGRAPH AT	E32	245.	12.33	18.	4.	2.	0.28
+	3 COMBINED AT	CPE32	418.	13.33	95.	24.	11.	1.76
+	DIVERSION TO	DVE32	368.	13.33	92.	23.	11.	1.76
+	HYDROGRAPH AT	DE32	49.	13.33	3.	1.	0.	1.76
+	ROUTED TO	RCPE32	29.	13.50	3.	1.	0.	1.76
+	HYDROGRAPH AT	E53	97.	12.33	6.	1.	1.	0.11
+	2 COMBINED AT	CPE53	95.	12.33	9.	2.	1.	0.71
+	DIVERSION TO	DVE53	89.	12.33	9.	2.	1.	0.71
+	HYDROGRAPH AT	DE53	7.	12.33	0.	0.	0.	0.71
+	ROUTED TO	RCPE53	1.	13.33	0.	0.	0.	0.71
+	HYDROGRAPH AT	E18	445.	12.50	42.	10.	5.	0.73
+	ROUTED TO	RCPE18	173.	14.00	41.	10.	5.	0.73
+	HYDROGRAPH AT	E31	281.	12.50	28.	7.	3.	0.38
+	3 COMBINED AT	CPE31	278.	12.50	68.	17.	8.	1.28
+	DIVERSION TO	DVE31	182.	12.50	58.	15.	7.	1.28
+	HYDROGRAPH AT	DE31	96.	12.50	10.	2.	1.	1.28
+	ROUTED TO	RCPE31	54.	12.83	10.	2.	1.	1.28
+	HYDROGRAPH AT	E01	1779.	12.50	257.	64.	31.	4.54
+	ROUTED TO	RCPE01	1241.	13.17	256.	64.	31.	4.54
+	HYDROGRAPH AT	E02	2379.	12.67	261.	65.	31.	6.36
+	2 COMBINED AT	CPE02	2677.	12.67	506.	127.	61.	10.91
+	ROUTED TO	RCPE02	1978.	13.33	503.	127.	61.	10.91
+	HYDROGRAPH AT	E03	1020.	12.50	89.	22.	11.	2.03
+	2 COMBINED AT	CPE03	1978.	13.33	582.	147.	71.	12.93
+	ROUTED TO	RCPE03	1848.	13.67	569.	145.	70.	12.93
+	HYDROGRAPH AT	E16	525.	12.50	44.	11.	5.	0.79
+	2 COMBINED AT	CPE16	1848.	13.67	609.	155.	75.	13.72

+	DIVERSION TO	DVE16	458.	13.67	117.	29.	14.	13.72
+	HYDROGRAPH AT	DE16	1374.	13.67	487.	124.	60.	13.72
+	ROUTED TO	RDE16	1354.	14.00	485.	124.	60.	13.72
+	HYDROGRAPH AT	E19	301.	12.50	31.	8.	4.	0.47
+	2 COMBINED AT	CPE19	1396.	14.00	529.	136.	66.	10.48
+	DIVERSION TO	DVE19	447.	14.00	117.	29.	14.	10.48
+	HYDROGRAPH AT	DE19	949.	14.00	412.	107.	51.	10.48
+	ROUTED TO	RDE19	654.	16.50	377.	107.	51.	10.48
+	HYDROGRAPH AT	E30	432.	12.67	50.	12.	6.	0.64
+	3 COMBINED AT	CPE30	659.	16.50	382.	122.	59.	8.42
+	DIVERSION TO	DVE30	659.	16.50	382.	122.	59.	8.42
+	HYDROGRAPH AT	DE30	0.	0.00	0.	0.	0.	8.42
+	ROUTED TO	RCPE30	0.	0.00	0.	0.	0.	8.42
+	HYDROGRAPH AT	E28	197.	12.33	17.	4.	2.	0.20
+	DIVERSION TO	DVE28	119.	12.33	10.	3.	1.	0.20
+	HYDROGRAPH AT	DE28	78.	12.33	7.	2.	1.	0.20
+	ROUTED TO	RCPE28	29.	14.17	7.	2.	1.	0.20
+	HYDROGRAPH AT	E21	225.	12.50	19.	5.	2.	0.35
+	DIVERSION TO	DVE21	31.	12.50	2.	0.	0.	0.35
+	HYDROGRAPH AT	DE21	194.	12.50	17.	4.	2.	0.35
+	ROUTED TO	RDE21	33.	16.17	15.	4.	2.	0.35
+	HYDROGRAPH AT	DRE16	458.	13.67	117.	29.	14.	13.72
+	ROUTED TO	RCPE16	290.	16.67	110.	29.	14.	13.72
+	HYDROGRAPH AT	E20	271.	12.67	38.	9.	5.	0.51
+	4 COMBINED AT	CPE20	360.	16.50	146.	47.	23.	4.58
+	HYDROGRAPH AT	DRE28	119.	12.33	10.	3.	1.	0.20
+	ROUTED TO	RDE28	111.	12.50	10.	3.	1.	0.20
+	HYDROGRAPH AT	DRE19	447.	14.00	117.	29.	14.	10.48
+	ROUTED TO	RCPE19	392.	15.00	116.	29.	14.	10.48
+	HYDROGRAPH AT	E29	394.	12.50	47.	12.	6.	0.56
+	3 COMBINED AT	CPE29A	495.	12.50	171.	44.	21.	3.83
+	2 COMBINED AT	CPE29	753.	12.67	311.	90.	43.	8.41
+	ROUTED TO	RCPE29	546.	13.17	301.	90.	43.	8.41
+	HYDROGRAPH AT	E07	441.	12.50	45.	11.	5.	1.07
+	ROUTED TO	RCPE07	261.	13.17	45.	11.	5.	1.07

+	HYDROGRAPH AT	E14	655.	12.17	38.	9.	5.	0.82
+	ROUTED TO	RCPE14	301.	12.67	38.	9.	5.	0.82
+	HYDROGRAPH AT	E15	614.	12.50	52.	13.	6.	0.92
+	3 COMBINED AT	CPE15	864.	12.50	133.	33.	16.	2.81
+	ROUTED TO	RCPE15	349.	15.33	124.	33.	16.	2.81
+	HYDROGRAPH AT	E27	127.	12.33	11.	3.	1.	0.13
+	ROUTED TO	RCPE27	74.	13.00	11.	3.	1.	0.13
+	HYDROGRAPH AT	DRE21	31.	12.50	2.	0.	0.	0.35
+	ROUTED TO	RCPE21	3.	17.83	2.	0.	0.	0.35
+	HYDROGRAPH AT	E22	596.	12.67	77.	19.	9.	1.10
+	4 COMBINED AT	CPE22	600.	12.67	191.	55.	27.	4.10
+	ROUTED TO	RCPE22	418.	13.50	183.	55.	27.	4.10
+	HYDROGRAPH AT	E37	221.	12.33	15.	4.	2.	0.18
+	2 COMBINED AT	CPE37	418.	13.50	183.	59.	28.	4.28
+	ROUTED TO	RCPE37	363.	14.00	181.	59.	28.	4.28
+	HYDROGRAPH AT	E04	944.	12.33	76.	19.	9.	1.77
+	ROUTED TO	RCPE04	210.	16.33	74.	19.	9.	1.77
+	HYDROGRAPH AT	E06	655.	12.33	45.	11.	5.	1.06
+	ROUTED TO	RCPE06	156.	15.17	44.	11.	5.	1.06
+	HYDROGRAPH AT	E11	967.	12.67	111.	28.	13.	2.27
+	DIVERSION TO	DVE11	350.	12.67	39.	10.	5.	2.27
+	HYDROGRAPH AT	DE11	616.	12.67	72.	18.	9.	2.27
+	ROUTED TO	RCPE11	314.	13.83	72.	18.	9.	2.27
+	HYDROGRAPH AT	E09	229.	12.33	13.	3.	2.	0.30
+	DIVERSION TO	DVE09	100.	12.33	6.	1.	1.	0.30
+	HYDROGRAPH AT	DE09	129.	12.33	8.	2.	1.	0.30
+	ROUTED TO	RCPE09	60.	12.67	8.	2.	1.	0.30
+	HYDROGRAPH AT	E10	94.	12.33	6.	2.	1.	0.10
+	2 COMBINED AT	CPE10	123.	12.33	14.	3.	2.	0.27
+	DIVERSION TO	DVE10	89.	12.33	10.	3.	1.	0.27
+	HYDROGRAPH AT	DE10	35.	12.33	4.	1.	0.	0.27
+	ROUTED TO	RCPE10	11.	14.83	4.	1.	0.	0.27
+	HYDROGRAPH AT	E05	1159.	13.17	216.	54.	26.	4.18
+	5 COMBINED AT	CPE05	1216.	13.17	396.	102.	49.	8.46
+	DIVERSION TO	DVE05	780.	13.17	294.	76.	37.	8.46
	HYDROGRAPH AT							

+		DE05	436.	13.17	102.	25.	12.	8.46
+	ROUTED TO	RDE05	313.	14.33	98.	25.	12.	8.46
+	HYDROGRAPH AT	DRE09	100.	12.33	6.	1.	1.	0.30
+	ROUTED TO	RDE09	18.	14.83	5.	1.	1.	0.30
+	HYDROGRAPH AT	DRE10	89.	12.33	10.	3.	1.	0.27
+	ROUTED TO	RDE10	41.	14.67	10.	3.	1.	0.27
+	HYDROGRAPH AT	E13	762.	12.67	107.	27.	13.	1.53
+	3 COMBINED AT	CPE13	761.	12.67	121.	31.	15.	1.93
+	DIVERSION TO	DVE13	158.	12.67	17.	4.	2.	1.93
+	HYDROGRAPH AT	DE13	603.	12.67	104.	26.	13.	1.93
+	ROUTED TO	RCPE13	524.	13.17	103.	26.	13.	1.93
+	HYDROGRAPH AT	E24	188.	12.50	20.	5.	2.	0.26
+	3 COMBINED AT	CPE24	537.	13.17	215.	57.	27.	4.70
+	ROUTED TO	RCPE24	508.	13.17	214.	57.	27.	4.70
+	HYDROGRAPH AT	E08	430.	12.67	52.	13.	6.	0.96
+	ROUTED TO	RCPE08	67.	18.17	41.	13.	6.	0.96
+	HYDROGRAPH AT	DRE13	158.	12.67	17.	4.	2.	1.93
+	ROUTED TO	RDE13	38.	14.00	16.	4.	2.	1.93
+	HYDROGRAPH AT	E23	237.	12.50	27.	7.	3.	0.32
+	4 COMBINED AT	CPE23	543.	13.17	264.	80.	39.	6.28
+	ROUTED TO	RCPE23	516.	13.50	261.	80.	39.	6.28
+	HYDROGRAPH AT	E34	234.	12.50	23.	6.	3.	0.27
+	2 COMBINED AT	CPE34	519.	13.33	278.	85.	41.	6.55
+	ROUTED TO	RCPE34	500.	13.67	273.	85.	41.	6.55
+	HYDROGRAPH AT	E38	447.	12.33	36.	9.	4.	0.48
+	5 COMBINED AT	CPE38	953.	13.17	665.	217.	105.	19.72
+	DIVERSION TO	DVE38	706.	13.17	557.	190.	92.	19.72
+	HYDROGRAPH AT	DE38	247.	13.17	107.	27.	13.	19.72
+	ROUTED TO	RCPE38	124.	15.33	94.	27.	13.	19.72
+	HYDROGRAPH AT	DRE11	350.	12.67	39.	10.	5.	2.27
+	ROUTED TO	RDE11	175.	14.17	39.	10.	5.	2.27
+	HYDROGRAPH AT	E12	625.	12.67	70.	18.	8.	1.05
+	2 COMBINED AT	CPE12	621.	12.67	108.	27.	13.	1.93
+	ROUTED TO	RCPE12	242.	14.83	95.	27.	13.	1.93
+	HYDROGRAPH AT	DRE05	780.	13.17	294.	76.	37.	8.46
+	ROUTED TO	RCPE05	454.	16.83	251.	76.	37.	8.46

+	HYDROGRAPH AT	E25	744.	12.83	119.	30.	14.	1.64
+	4 COMBINED AT	CPE25	676.	12.83	364.	146.	71.	21.77
+	DIVERSION TO	DVE25	616.	12.83	340.	138.	67.	21.77
+	HYDROGRAPH AT	DE25	60.	12.83	25.	8.	4.	21.77
+	ROUTED TO	RCPE25	48.	13.00	24.	8.	4.	21.77
+	HYDROGRAPH AT	E26	240.	12.33	21.	5.	3.	0.25
+	ROUTED TO	RCPE26	140.	13.17	21.	5.	3.	0.25
+	HYDROGRAPH AT	E35	397.	12.33	30.	8.	4.	0.37
+	2 COMBINED AT	CPE35	396.	12.33	51.	13.	6.	0.69
+	DIVERSION TO	DVE35	198.	12.33	26.	6.	3.	0.69
+	HYDROGRAPH AT	DE35	198.	12.33	26.	6.	3.	0.69
+	ROUTED TO	RCPE35	123.	13.00	26.	6.	3.	0.69
+	HYDROGRAPH AT	E36	173.	12.33	12.	3.	1.	0.16
+	3 COMBINED AT	CPE36	176.	13.00	65.	20.	9.	6.44
+	DIVERSION TO	DVE36	9.	13.00	1.	0.	0.	6.44
+	HYDROGRAPH AT	DE36	166.	13.00	64.	19.	9.	6.44
+	ROUTED TO	RCPE36	149.	13.33	63.	19.	9.	6.44
+	HYDROGRAPH AT	DRE35	198.	12.33	26.	6.	3.	0.69
+	ROUTED TO	RDE35	59.	12.67	25.	6.	3.	0.69
+	HYDROGRAPH AT	E54	131.	12.33	10.	2.	1.	0.12
+	3 COMBINED AT	CPE54	254.	12.50	95.	28.	14.	6.40
+	DIVERSION TO	DVE54	154.	12.50	74.	23.	11.	6.40
+	HYDROGRAPH AT	DE54	100.	12.50	21.	5.	3.	6.40
+	ROUTED TO	RCPE54	62.	13.00	20.	5.	3.	6.40
+	HYDROGRAPH AT	F26	396.	12.50	41.	10.	5.	0.50
+	2 COMBINED AT	CPF26	400.	12.50	60.	15.	7.	4.38
+	DIVERSION TO	DVF26	200.	12.50	42.	11.	5.	4.38
+	HYDROGRAPH AT	DF26	199.	12.50	19.	5.	2.	4.38
+	ROUTED TO	RCPF26	202.	12.83	19.	5.	2.	4.38
+	HYDROGRAPH AT	F14	301.	12.33	19.	5.	2.	0.39
+	ROUTED TO	RCPF14	103.	13.33	19.	5.	2.	0.39
+	HYDROGRAPH AT	F13	207.	12.33	12.	3.	1.	0.26
+	DIVERSION TO	DVF13	104.	12.33	7.	2.	1.	0.26
+	HYDROGRAPH AT	DF13	103.	12.33	5.	1.	1.	0.26
+	ROUTED TO	RDF13	13.	13.00	5.	1.	1.	0.26

+	HYDROGRAPH AT	DRF13	104.	12.33	7.	2.	1.	0.26
+	ROUTED TO	RCPF13	96.	12.50	7.	2.	1.	0.26
+	HYDROGRAPH AT	F12	242.	12.33	15.	4.	2.	0.31
+	2 COMBINED AT	CPF12	272.	12.33	22.	5.	3.	0.44
+	ROUTED TO	RCPF12	121.	13.33	22.	5.	3.	0.44
+	HYDROGRAPH AT	F15	568.	12.50	61.	15.	7.	0.78
+	4 COMBINED AT	CPF15	571.	12.50	106.	27.	13.	1.74
+	ROUTED TO	RCPF15	261.	15.33	100.	27.	13.	1.74
+	HYDROGRAPH AT	F11	628.	12.67	69.	17.	8.	1.49
+	DIVERSION TO	DVF11	241.	12.67	25.	6.	3.	1.49
+	HYDROGRAPH AT	DF11	387.	12.67	44.	11.	5.	1.49
+	ROUTED TO	RCPF11	305.	12.83	44.	11.	5.	1.49
+	HYDROGRAPH AT	F16	133.	12.33	9.	2.	1.	0.11
+	2 COMBINED AT	CPF16	306.	12.83	53.	13.	6.	1.02
+	DIVERSION TO	DVF16	119.	12.83	21.	5.	3.	1.02
+	HYDROGRAPH AT	DF16	188.	12.83	32.	8.	4.	1.02
+	ROUTED TO	RDF16	115.	14.17	31.	8.	4.	1.02
+	HYDROGRAPH AT	F25	1416.	12.83	237.	60.	29.	2.99
+	4 COMBINED AT	CPF25	1605.	12.83	370.	98.	47.	7.11
+	HYDROGRAPH AT	DRF11	241.	12.67	25.	6.	3.	1.49
+	ROUTED TO	RDF11	93.	13.67	25.	6.	3.	1.49
+	HYDROGRAPH AT	F17	746.	12.50	70.	18.	9.	1.16
+	2 COMBINED AT	CPF17	743.	12.50	94.	24.	12.	1.73
+	ROUTED TO	RCPF17	427.	13.33	91.	24.	12.	1.73
+	HYDROGRAPH AT	DRF16	119.	12.83	21.	5.	3.	1.02
+	ROUTED TO	RCPF16	91.	14.17	21.	5.	3.	1.02
+	HYDROGRAPH AT	F24	612.	12.50	85.	24.	12.	0.80
+	3 COMBINED AT	CPF24	608.	12.50	192.	53.	26.	2.93
+	ROUTED TO	RCPF24	481.	13.33	190.	53.	26.	2.93
+	HYDROGRAPH AT	F23	531.	12.67	79.	23.	11.	0.67
+	ROUTED TO	RCPF23	373.	13.33	78.	23.	11.	0.67
+	HYDROGRAPH AT	F27	602.	12.50	61.	16.	8.	0.67
+	4 COMBINED AT	CPF27	2211.	13.00	689.	189.	91.	9.63
+	ROUTED TO	PNDF01	1578.	13.33	689.	189.	91.	9.63
+	DIVERSION TO	DVF27	1494.	13.33	679.	186.	90.	9.63
	HYDROGRAPH AT							

+		DF27	83.	13.33	10.	3.	1.	9.63
+	ROUTED TO	RCPF27	54.	14.33	10.	3.	1.	9.63
+	HYDROGRAPH AT	F10	1242.	12.50	113.	28.	14.	2.25
+	ROUTED TO	RCPF10	615.	13.00	112.	28.	14.	2.25
+	HYDROGRAPH AT	F18	376.	12.33	35.	10.	5.	0.30
+	2 COMBINED AT	CPF18	627.	13.00	145.	38.	18.	2.55
+	DIVERSION TO	DVF18	206.	13.00	46.	12.	6.	2.55
+	HYDROGRAPH AT	DF18	421.	13.00	99.	26.	13.	2.55
+	ROUTED TO	RCPF18	349.	13.67	98.	26.	13.	2.55
+	HYDROGRAPH AT	F22	342.	12.50	35.	10.	5.	0.37
+	2 COMBINED AT	CPF22	354.	13.67	132.	36.	17.	2.07
+	DIVERSION TO	DVF22	219.	13.67	78.	21.	10.	2.07
+	HYDROGRAPH AT	DF22	135.	13.67	54.	14.	7.	2.07
+	ROUTED TO	RDF22	116.	15.00	52.	14.	7.	2.07
+	HYDROGRAPH AT	F28	461.	12.50	54.	16.	8.	0.47
+	3 COMBINED AT	CPF28	459.	12.50	113.	33.	16.	1.26
+	ROUTED TO	PNDF02	294.	12.67	113.	33.	16.	1.26
+	DIVERSION TO	DVF28A	189.	12.67	75.	22.	11.	1.26
+	HYDROGRAPH AT	DF28A	105.	12.67	38.	11.	5.	1.26
+	DIVERSION TO	DVF28B	105.	12.67	38.	11.	5.	1.26
+	HYDROGRAPH AT	DF28B	0.	0.00	0.	0.	0.	1.26
+	ROUTED TO	RCPF28	0.	0.00	0.	0.	0.	1.26
+	HYDROGRAPH AT	F36	211.	12.33	20.	6.	3.	0.17
+	2 COMBINED AT	CPF36	211.	12.33	20.	6.	3.	0.17
+	ROUTED TO	PNDF03	155.	12.50	20.	6.	3.	0.17
+	ROUTED TO	RCPF36	95.	13.33	20.	6.	3.	0.17
+	HYDROGRAPH AT	F02A	488.	12.33	28.	7.	3.	0.64
+	ROUTED TO	RCF02A	412.	12.83	28.	7.	3.	0.64
+	HYDROGRAPH AT	F02	268.	12.33	17.	4.	2.	0.39
+	2 COMBINED AT	CPF02	418.	12.83	45.	11.	5.	1.02
+	DIVERSION TO	DVF02	235.	12.83	26.	6.	3.	1.02
+	HYDROGRAPH AT	DF02	182.	12.83	20.	5.	2.	1.02
+	ROUTED TO	RCPF02	82.	15.00	19.	5.	2.	1.02
+	HYDROGRAPH AT	F01A	303.	12.33	18.	4.	2.	0.41
+	ROUTED TO	RCF01A	119.	14.00	18.	4.	2.	0.41
+	HYDROGRAPH AT	F01	700.	12.67	78.	20.	9.	1.78

+	2 COMBINED AT	CPF01	698.	12.67	95.	24.	11.	2.19
+	ROUTED TO	RCPF01	340.	13.67	93.	24.	11.	2.19
+	HYDROGRAPH AT	F04	694.	12.83	96.	24.	12.	2.20
+	3 COMBINED AT	CPF04	690.	12.83	203.	52.	25.	4.82
+	ROUTED TO	RCPF04	510.	13.67	197.	52.	25.	4.82
+	HYDROGRAPH AT	F03	660.	12.67	71.	18.	9.	1.63
+	ROUTED TO	RCPF03	451.	13.00	71.	18.	9.	1.63
+	HYDROGRAPH AT	F06	623.	12.33	43.	11.	5.	1.00
+	2 COMBINED AT	CPF06	656.	12.33	114.	28.	14.	2.63
+	ROUTED TO	RCPF06	388.	13.67	110.	28.	14.	2.63
+	HYDROGRAPH AT	DRF02	235.	12.83	26.	6.	3.	1.02
+	ROUTED TO	RDF02	93.	15.33	25.	6.	3.	1.02
+	HYDROGRAPH AT	F05	1132.	12.83	156.	39.	19.	2.97
+	4 COMBINED AT	CPF05	1146.	12.83	466.	122.	59.	11.01
+	ROUTED TO	RCPF05	944.	14.50	446.	122.	59.	11.01
+	HYDROGRAPH AT	F07	1456.	12.67	180.	45.	22.	3.68
+	ROUTED TO	RCPF07	1391.	12.83	180.	45.	22.	3.68
+	HYDROGRAPH AT	F08	532.	12.67	61.	15.	7.	0.88
+	3 COMBINED AT	CPF08	1635.	12.67	622.	172.	83.	15.56
+	ROUTED TO	RCPF08	647.	15.33	489.	170.	83.	15.56
+	HYDROGRAPH AT	F09	1029.	12.83	174.	45.	22.	2.69
+	2 COMBINED AT	CPF09	1245.	13.00	606.	206.	101.	18.25
+	ROUTED TO	RCPF09	1091.	13.67	591.	206.	100.	18.25
+	HYDROGRAPH AT	F19	644.	12.67	89.	25.	12.	0.85
+	2 COMBINED AT	CPF19	1114.	13.67	606.	225.	111.	19.10
+	DIVERSION TO	DVF19	562.	13.67	306.	114.	56.	19.10
+	HYDROGRAPH AT	DF19	553.	13.67	299.	111.	55.	19.10
+	ROUTED TO	RDF19	516.	14.33	298.	111.	55.	19.10
+	HYDROGRAPH AT	DRF18	206.	13.00	46.	12.	6.	2.55
+	ROUTED TO	RDF18	80.	15.50	42.	12.	6.	2.55
+	HYDROGRAPH AT	F21	458.	12.50	51.	14.	7.	0.53
+	3 COMBINED AT	CPF21	578.	14.33	368.	144.	71.	11.12
+	ROUTED TO	RCPF21	514.	15.00	366.	143.	71.	11.12
+	HYDROGRAPH AT	DRF22	219.	13.67	78.	21.	10.	2.07
+	ROUTED TO	RCPF22	182.	14.67	76.	21.	10.	2.07

+	HYDROGRAPH AT	F29	524.	12.50	60.	17.	8.	0.59
+	3 COMBINED AT	CPF29	664.	14.83	444.	175.	87.	13.00
+	ROUTED TO	PNDF04	648.	15.00	421.	175.	87.	13.00
+	DIVERSION TO	DVF29	278.	15.00	233.	120.	60.	13.00
+	HYDROGRAPH AT	DF29	370.	15.00	187.	55.	27.	13.00
+	ROUTED TO	RCPF29	333.	15.83	186.	55.	27.	13.00
+	HYDROGRAPH AT	DRF19	562.	13.67	306.	114.	56.	19.10
+	ROUTED TO	RCPF19	440.	14.67	301.	114.	56.	19.10
+	HYDROGRAPH AT	F20	615.	12.67	87.	25.	12.	0.80
+	3 COMBINED AT	CPF20	627.	15.67	481.	190.	94.	16.52
+	ROUTED TO	PNDF05	545.	16.17	443.	190.	94.	16.52
+	ROUTED TO	RCPF20	545.	16.67	443.	190.	94.	16.52
+	HYDROGRAPH AT	F31	309.	12.33	24.	6.	3.	0.27
+	HYDROGRAPH AT	G21	1170.	12.50	98.	25.	12.	1.96
+	HYDROGRAPH AT	G20	222.	12.33	14.	3.	2.	0.24
+	DIVERSION TO	DVG20	3.	12.33	0.	0.	0.	0.24
+	HYDROGRAPH AT	DG20	218.	12.33	14.	3.	2.	0.24
+	ROUTED TO	RCPG20	86.	13.33	14.	3.	2.	0.24
+	4 COMBINED AT	CPF31	1269.	12.50	442.	220.	109.	18.99
+	ROUTED TO	RCPF31	912.	12.67	427.	215.	106.	18.99
+	HYDROGRAPH AT	DRF29	278.	15.00	233.	120.	60.	13.00
+	ROUTED TO	RDF29	272.	15.83	233.	120.	60.	13.00
+	HYDROGRAPH AT	F32	263.	12.33	24.	6.	3.	0.29
+	3 COMBINED AT	CPF32	1161.	12.67	726.	368.	183.	7.08
+	HYDROGRAPH AT	DRG20	3.	12.33	0.	0.	0.	0.24
+	ROUTED TO	RDG20	0.	14.17	0.	0.	0.	0.24
+	HYDROGRAPH AT	G19	616.	12.33	48.	14.	7.	0.67
+	ROUTED TO	RCPG19	247.	13.17	48.	14.	7.	0.67
+	HYDROGRAPH AT	G22	602.	12.50	57.	14.	7.	1.12
+	3 COMBINED AT	CPG22	607.	12.50	104.	28.	14.	1.80
+	3 COMBINED AT	F32RIV	1541.	12.67	726.	382.	190.	27.84
+	ROUTED TO	RCPF32	1244.	12.83	635.	349.	174.	27.84
+	HYDROGRAPH AT	DRF28B	105.	12.67	38.	11.	5.	1.26
+	ROUTED TO	RDF28B	48.	13.83	34.	11.	5.	1.26
+	HYDROGRAPH AT	F33	452.	12.50	45.	12.	6.	0.49
	2 COMBINED AT							

+		CPF33	454.	12.50	76.	23.	11.	0.95
+	2 COMBINED AT	F33RIV	1332.	12.83	677.	366.	182.	28.79
+	ROUTED TO	RCPF33	1201.	13.00	668.	366.	182.	28.79
+	HYDROGRAPH AT	DRF28A	189.	12.67	75.	22.	11.	1.26
+	ROUTED TO	RDF28A	163.	13.17	74.	22.	11.	1.26
+	HYDROGRAPH AT	DRF27	1494.	13.33	679.	186.	90.	9.63
+	DIVERSION TO	DVF25	273.	13.33	106.	28.	13.	9.63
+	HYDROGRAPH AT	DF25	1221.	13.33	573.	159.	77.	9.63
+	ROUTED TO	RDF27	1005.	14.17	541.	158.	77.	9.63
+	HYDROGRAPH AT	DRF25	273.	13.33	106.	28.	13.	9.63
+	ROUTED TO	RDF25	250.	14.50	102.	28.	13.	9.63
+	HYDROGRAPH AT	F34	467.	12.50	52.	13.	6.	0.60
+	4 COMBINED AT	CPF34	1221.	14.17	705.	207.	100.	18.09
+	HYDROGRAPH AT	G23	654.	12.50	56.	14.	7.	1.20
+	3 COMBINED AT	F34RIV	1869.	13.00	1297.	548.	272.	40.15
+	ROUTED TO	RCPF34	1854.	13.33	1290.	548.	272.	40.15
+	HYDROGRAPH AT	DRF26	200.	12.50	42.	11.	5.	4.38
+	ROUTED TO	RDF26	64.	14.17	36.	11.	5.	4.38
+	HYDROGRAPH AT	F35	496.	12.50	57.	14.	7.	0.67
+	2 COMBINED AT	CPF35	494.	12.50	91.	25.	12.	3.29
+	HYDROGRAPH AT	G24	192.	12.50	16.	4.	2.	0.35
+	ROUTED TO	RCPG24	196.	12.50	16.	4.	2.	0.35
+	HYDROGRAPH AT	G25	177.	12.50	16.	4.	2.	0.36
+	4 COMBINED AT	F35RIV	1984.	12.83	1361.	571.	283.	42.15
+	ROUTED TO	RCPF35	1947.	13.00	1353.	571.	283.	42.15
+	HYDROGRAPH AT	DRE54	154.	12.50	74.	23.	11.	6.40
+	ROUTED TO	RDE54	148.	12.83	73.	23.	11.	6.40
+	HYDROGRAPH AT	E46	303.	12.17	21.	6.	3.	0.24
+	2 COMBINED AT	CPE46	299.	12.17	89.	29.	14.	2.75
+	ROUTED TO	RCPE46	193.	12.50	86.	29.	14.	2.75
+	HYDROGRAPH AT	DRE25	616.	12.83	340.	138.	67.	21.77
+	ROUTED TO	RDE25	523.	17.17	338.	138.	67.	21.77
+	HYDROGRAPH AT	DRE36	9.	13.00	1.	0.	0.	6.44
+	ROUTED TO	RDE36	3.	13.50	1.	0.	0.	6.44
+	HYDROGRAPH AT	E45	392.	12.33	29.	8.	4.	0.32
+	3 COMBINED AT	CPE45	558.	17.17	361.	152.	74.	16.34

+	ROUTED TO	RCPE45	552.	17.33	360.	152.	74.	16.34
+	HYDROGRAPH AT	E47	607.	12.17	45.	12.	6.	0.49
+	3 COMBINED AT	CPE47	744.	12.33	421.	183.	89.	19.59
+	ROUTED TO	RCPE47	531.	18.17	408.	182.	89.	19.59
+	HYDROGRAPH AT	E48	763.	12.50	71.	18.	9.	0.86
+	2 COMBINED AT	CPE48	881.	12.50	420.	197.	96.	20.45
+	HYDROGRAPH AT	G26A	563.	12.50	48.	12.	6.	1.00
+	HYDROGRAPH AT	G26B	128.	12.33	8.	2.	1.	0.17
+	ROUTED TO	RCG26B	58.	13.83	8.	2.	1.	0.17
+	4 COMBINED AT	E48RIV	2259.	14.00	1641.	713.	352.	63.76
+	ROUTED TO	RCPE48	2257.	14.00	1634.	713.	352.	63.76
+	HYDROGRAPH AT	DRE38	706.	13.17	557.	190.	92.	19.72
+	ROUTED TO	RDE38	611.	14.50	526.	189.	92.	19.72
+	HYDROGRAPH AT	DRE30	659.	16.50	382.	122.	59.	8.42
+	ROUTED TO	RDE30	648.	17.17	378.	122.	59.	8.42
+	HYDROGRAPH AT	E44	488.	12.50	44.	11.	5.	0.63
+	3 COMBINED AT	CPE44	1186.	17.33	871.	320.	155.	16.15
+	ROUTED TO	RCPE44	1179.	17.50	869.	320.	154.	16.15
+	HYDROGRAPH AT	DRE31	182.	12.50	58.	15.	7.	1.28
+	ROUTED TO	RDE31	73.	15.50	46.	15.	7.	1.28
+	HYDROGRAPH AT	E43	602.	12.50	54.	13.	6.	0.71
+	2 COMBINED AT	CPE43	599.	12.50	94.	28.	14.	1.55
+	ROUTED TO	RCPE43	337.	13.17	86.	28.	14.	1.55
+	HYDROGRAPH AT	E50	1026.	12.33	120.	40.	19.	0.70
+	3 COMBINED AT	CPE50	1221.	17.50	917.	372.	183.	18.78
+	ROUTED TO	RCPE50	1213.	17.83	915.	372.	183.	18.78
+	HYDROGRAPH AT	E52	301.	12.17	25.	8.	4.	0.16
+	ROUTED TO	RCPE52	147.	12.50	25.	8.	4.	0.16
+	HYDROGRAPH AT	E49	163.	12.50	15.	4.	2.	0.22
+	3 COMBINED AT	CPE49	1213.	17.83	917.	382.	188.	19.71
+	2 COMBINED AT	E49RIV	2762.	14.33	2231.	1000.	495.	86.19
+	ROUTED TO	RCPE49	2741.	14.50	2209.	1000.	495.	86.19
+	HYDROGRAPH AT	G18	381.	12.33	37.	12.	6.	0.32
+	DIVERSION TO	DVG18	256.	12.33	27.	8.	4.	0.32
+	HYDROGRAPH AT	DG18	125.	12.33	10.	3.	2.	0.32

+	ROUTED TO	RCPG18	85.	13.50	10.	3.	2.	0.32
+	HYDROGRAPH AT	G27	803.	12.50	71.	18.	8.	1.41
+	2 COMBINED AT	CPG27	804.	12.50	81.	21.	10.	1.51
+	2 COMBINED AT	G27RIV	2747.	14.33	2221.	1011.	500.	87.92
+	ROUTED TO	RCPG27	2734.	14.67	2215.	1011.	500.	87.92
+	HYDROGRAPH AT	G28	252.	12.33	18.	5.	2.	0.28
+	2 COMBINED AT	G28RIV	2734.	14.67	2215.	1015.	502.	88.23
+	ROUTED TO	RCPG28	2722.	14.83	2209.	1014.	501.	88.23
+	HYDROGRAPH AT	E51	886.	12.67	104.	26.	13.	1.25
+	2 COMBINED AT	E51RIV	2722.	14.83	2216.	1034.	511.	89.48
+	ROUTED TO	RCPE51	2717.	14.83	2210.	1032.	510.	89.48
+	HYDROGRAPH AT	DRG18	256.	12.33	27.	8.	4.	0.32
+	ROUTED TO	RDG18	62.	15.67	26.	8.	4.	0.32
+	HYDROGRAPH AT	G17	667.	12.33	90.	30.	14.	0.60
+	3 COMBINED AT	G17RIV	2746.	14.83	2246.	1059.	525.	90.30
+	ROUTED TO	RCPG17	2737.	15.00	2241.	1059.	525.	90.30
+	HYDROGRAPH AT	DRE53	89.	12.33	9.	2.	1.	0.71
+	ROUTED TO	RDE53	6.	16.67	5.	2.	1.	0.71
+	HYDROGRAPH AT	DRE32	368.	13.33	92.	23.	11.	1.76
+	ROUTED TO	RDE32	336.	13.50	91.	23.	11.	1.76
+	HYDROGRAPH AT	DRE33	49.	12.17	3.	1.	0.	0.07
+	ROUTED TO	RDE33	3.	13.00	2.	1.	0.	0.07
+	HYDROGRAPH AT	E42	642.	12.50	63.	16.	8.	0.93
+	4 COMBINED AT	CPE42	766.	12.50	158.	41.	20.	2.70
+	ROUTED TO	RCPE42	394.	14.00	151.	41.	20.	2.70
+	HYDROGRAPH AT	E41	471.	12.67	57.	14.	7.	0.67
+	2 COMBINED AT	CPE41	465.	12.67	202.	55.	27.	3.37
+	HYDROGRAPH AT	G16	1067.	12.50	115.	32.	16.	1.42
+	HYDROGRAPH AT	G29	2163.	12.50	201.	50.	24.	2.81
+	4 COMBINED AT	E41RIV	3767.	12.50	2426.	1128.	560.	111.17
+	ROUTED TO	RCPE41	2871.	15.17	2392.	1128.	560.	111.17
+	DIVERSION TO	DVE41	2871.	15.17	2392.	1128.	560.	111.17
+	HYDROGRAPH AT	DE41	0.	0.00	0.	0.	0.	111.17
+	HYDROGRAPH AT	G44	292.	12.17	21.	5.	2.	0.73
+	ROUTED TO	RCPG44	104.	13.33	20.	5.	2.	0.73
	HYDROGRAPH AT							

+		G06	2280.	12.33	156.	41.	20.	2.15
+	2 COMBINED AT	CPG06	2274.	12.33	175.	46.	22.	2.88
+	DIVERSION TO	DVG06	1145.	12.33	88.	23.	11.	2.88
+	HYDROGRAPH AT	DG06	1130.	12.33	86.	23.	11.	2.88
+	ROUTED TO	RCPG06	423.	13.33	86.	22.	11.	2.88
+	HYDROGRAPH AT	G07	1133.	12.50	118.	32.	16.	1.36
+	2 COMBINED AT	CPG07	1130.	12.50	200.	55.	26.	2.79
+	DIVERSION TO	DVG07E	548.	12.50	111.	31.	15.	2.79
+	HYDROGRAPH AT	DG07E	582.	12.50	89.	23.	11.	2.79
+	DIVERSION TO	DVG07W	557.	12.50	85.	22.	11.	2.79
+	HYDROGRAPH AT	DG07W	25.	12.50	4.	1.	0.	2.79
+	ROUTED TO	RCPG07	11.	16.17	4.	1.	0.	2.79
+	HYDROGRAPH AT	G08	317.	12.50	28.	7.	3.	0.40
+	DIVERSION TO	DVG08	16.	12.50	1.	0.	0.	0.40
+	HYDROGRAPH AT	DG08	301.	12.50	27.	7.	3.	0.40
+	ROUTED TO	RCPG08	231.	12.67	27.	7.	3.	0.40
+	HYDROGRAPH AT	G05	668.	12.33	44.	11.	5.	1.59
+	ROUTED TO	RCPG05	222.	13.50	44.	11.	5.	1.59
+	HYDROGRAPH AT	G46	1132.	12.50	114.	31.	15.	1.41
+	2 COMBINED AT	CPG46	1125.	12.50	157.	42.	20.	3.00
+	HYDROGRAPH AT	G04	1891.	12.50	180.	48.	23.	2.34
+	2 COMBINED AT	CPG04	2997.	12.50	333.	89.	43.	5.34
+	ROUTED TO	RCPG04	1186.	13.00	332.	89.	43.	5.34
+	HYDROGRAPH AT	DRG06	1145.	12.33	88.	23.	11.	2.88
+	ROUTED TO	RDG06	171.	16.33	84.	23.	11.	2.88
+	HYDROGRAPH AT	G45	1098.	12.83	155.	39.	19.	2.00
+	4 COMBINED AT	CPG45	2323.	12.83	578.	155.	75.	9.17
+	ROUTED TO	RCPG45	1944.	13.17	571.	155.	75.	9.17
+	HYDROGRAPH AT	G31	201.	12.33	13.	3.	2.	0.18
+	2 COMBINED AT	CPG31	1944.	13.17	579.	159.	77.	9.35
+	DIVERSION TO	DVG31E	1723.	13.17	515.	143.	69.	9.35
+	HYDROGRAPH AT	DG31E	221.	13.17	64.	16.	8.	9.35
+	DIVERSION TO	DVG31W	46.	13.17	13.	3.	2.	9.35
+	HYDROGRAPH AT	DG31W	175.	13.17	51.	13.	6.	9.35
+	ROUTED TO	RCPG31	155.	13.50	50.	13.	6.	9.35
+	DIVERSION TO	DVG47E	153.	13.50	50.	13.	6.	9.35

+	HYDROGRAPH AT	DG47E	2.	13.50	1.	0.	0.	9.35
+	HYDROGRAPH AT	DRG07W	557.	12.50	85.	22.	11.	2.79
+	HYDROGRAPH AT	G47	134.	12.33	9.	2.	1.	0.12
+	3 COMBINED AT	CPG47	599.	12.50	95.	24.	12.	1.50
+	DIVERSION TO	DVG47	235.	12.50	40.	10.	5.	1.50
+	HYDROGRAPH AT	DG47	364.	12.50	55.	14.	7.	1.50
+	ROUTED TO	RCPG47	158.	14.00	52.	14.	7.	1.50
+	HYDROGRAPH AT	DRG31E	1723.	13.17	515.	143.	69.	9.35
+	ROUTED TO	RDG31E	1333.	14.17	495.	142.	69.	9.35
+	HYDROGRAPH AT	G43	1232.	12.67	156.	39.	19.	2.17
+	4 COMBINED AT	CPG43	1456.	14.17	654.	193.	93.	11.48
+	HYDROGRAPH AT	DRG07E	548.	12.50	111.	31.	15.	2.79
+	ROUTED TO	RDG07E	254.	14.50	105.	31.	15.	2.79
+	HYDROGRAPH AT	G30	2326.	12.67	263.	66.	32.	3.70
+	HYDROGRAPH AT	DRE41	2871.	15.17	2392.	1128.	560.	111.17
+	3 COMBINED AT	G30RIV	4559.	12.67	2665.	1217.	603.	103.15
+	ROUTED TO	RCPG30	3843.	13.00	2626.	1217.	602.	103.15
+	HYDROGRAPH AT	DRD17	417.	12.67	94.	24.	11.	1.53
+	ROUTED TO	RDD17	243.	13.50	92.	24.	11.	1.53
+	HYDROGRAPH AT	DRD18	224.	12.50	22.	5.	3.	1.20
+	ROUTED TO	RDD18	61.	14.50	21.	5.	3.	1.20
+	HYDROGRAPH AT	D23	436.	12.67	50.	12.	6.	0.71
+	3 COMBINED AT	CPD23	432.	12.67	158.	41.	20.	3.10
+	HYDROGRAPH AT	DRD19	6.	12.33	0.	0.	0.	0.52
+	ROUTED TO	RDD19	0.	15.33	0.	0.	0.	0.52
+	HYDROGRAPH AT	D24	295.	12.50	28.	7.	3.	0.43
+	2 COMBINED AT	CPD24A	295.	12.50	28.	7.	3.	0.47
+	2 COMBINED AT	CPD24	712.	12.50	185.	48.	23.	3.57
+	ROUTED TO	RCPD24	409.	13.33	175.	48.	23.	3.57
+	HYDROGRAPH AT	DRD20	158.	12.33	20.	5.	2.	0.59
+	ROUTED TO	RDD20	120.	13.83	20.	5.	2.	0.59
+	HYDROGRAPH AT	DRD21	55.	12.17	4.	1.	0.	0.09
+	ROUTED TO	RDD21	8.	21.33	4.	1.	0.	0.09
+	HYDROGRAPH AT	D25	681.	12.67	76.	19.	9.	1.33
+	4 COMBINED AT	CPD25	675.	12.67	262.	72.	35.	5.54

+	ROUTED TO	RCPD25	374.	16.00	227.	72.	35.	5.54
+	HYDROGRAPH AT	D26	830.	12.83	117.	29.	14.	1.55
+	2 COMBINED AT	CPD26	819.	12.83	271.	100.	48.	7.09
+	ROUTED TO	RCPD26	667.	13.17	265.	100.	48.	7.09
+	HYDROGRAPH AT	D27	234.	12.50	23.	6.	3.	0.26
+	2 COMBINED AT	CPD27	676.	13.17	273.	105.	51.	7.35
+	4 COMBINED AT	D27RIV	4756.	13.00	3217.	1412.	697.	123.22
+	ROUTED TO	RCPD27	4775.	13.00	3213.	1412.	697.	123.22
+	HYDROGRAPH AT	D28	1036.	12.83	147.	37.	18.	1.81
+	2 COMBINED AT	D28RIV	5337.	13.00	3297.	1437.	709.	124.90
+	ROUTED TO	RCPD28	5384.	13.00	3295.	1437.	709.	124.90
+	HYDROGRAPH AT	D29	1506.	12.67	188.	47.	23.	3.39
+	2 COMBINED AT	D29RIV	5960.	13.00	3381.	1463.	722.	128.41
+	ROUTED TO	RCPD29	5774.	13.00	3374.	1463.	722.	128.41
+	HYDROGRAPH AT	D30	322.	12.50	29.	7.	4.	0.43
+	HYDROGRAPH AT	DRG47	235.	12.50	40.	10.	5.	1.50
+	ROUTED TO	RDG47	114.	14.00	39.	10.	5.	1.50
+	HYDROGRAPH AT	G32	867.	12.50	84.	21.	10.	1.14
+	2 COMBINED AT	CPG32	864.	12.50	121.	31.	15.	1.71
+	3 COMBINED AT	D30RIV	5880.	13.00	3441.	1489.	734.	129.98
+	ROUTED TO	RCPD30	5805.	13.17	3440.	1489.	734.	129.98
+	HYDROGRAPH AT	D31	385.	12.67	43.	11.	5.	0.67
+	2 COMBINED AT	D31RIV	5846.	13.17	3459.	1495.	737.	130.65
+	ROUTED TO	RCPD31	5853.	13.17	3454.	1495.	737.	130.65
+	HYDROGRAPH AT	G33	595.	12.50	53.	13.	6.	0.74
+	2 COMBINED AT	G33RIV	5858.	13.17	3468.	1504.	741.	131.39
+	ROUTED TO	RCPG33	5841.	13.17	3467.	1504.	741.	131.39
+	HYDROGRAPH AT	D32	414.	12.50	37.	9.	4.	0.50
+	HYDROGRAPH AT	DRG47E	153.	13.50	50.	13.	6.	9.35
+	DIVERSION TO	DVG13	113.	13.50	41.	10.	5.	9.35
+	HYDROGRAPH AT	DG13	40.	13.50	9.	2.	1.	9.35
+	ROUTED TO	RDG47E	28.	14.50	9.	2.	1.	9.35
+	HYDROGRAPH AT	G14	148.	12.33	10.	2.	1.	0.14
+	2 COMBINED AT	CPG14	147.	12.33	18.	5.	2.	0.35
+	ROUTED TO	RCPG14	47.	13.17	17.	5.	2.	0.35
	HYDROGRAPH AT							

+		G34	220.	12.33	14.	4.	2.	0.20
+	2 COMBINED AT	CPG34A	218.	12.33	30.	8.	4.	0.56
+	HYDROGRAPH AT	DRG31W	46.	13.17	13.	3.	2.	9.35
+	ROUTED TO	RDG31W	26.	15.33	13.	3.	2.	9.35
+	HYDROGRAPH AT	G13	356.	12.50	35.	9.	4.	0.50
+	HYDROGRAPH AT	DRG13	113.	13.50	41.	10.	5.	9.35
+	3 COMBINED AT	CPG13	356.	12.50	88.	23.	11.	1.30
+	2 COMBINED AT	CPG34	475.	12.33	117.	31.	15.	1.85
+	ROUTED TO	RCPG34	273.	13.17	110.	31.	15.	1.85
+	HYDROGRAPH AT	G35	414.	12.50	38.	9.	5.	0.53
+	2 COMBINED AT	CPG35	423.	12.50	143.	40.	19.	2.38
+	3 COMBINED AT	D32RIV	6036.	13.17	3562.	1536.	757.	133.26
+	ROUTED TO	RCPD32	5691.	13.33	3543.	1535.	756.	133.26
+	HYDROGRAPH AT	DRD13	790.	13.50	259.	66.	32.	4.58
+	ROUTED TO	RDD13	641.	15.33	238.	66.	32.	4.58
+	HYDROGRAPH AT	DRD46	81.	12.17	7.	2.	1.	0.15
+	ROUTED TO	RDD46	7.	21.33	5.	2.	1.	0.15
+	HYDROGRAPH AT	DRD10	619.	12.67	148.	37.	18.	2.95
+	ROUTED TO	RDD10	326.	15.17	131.	37.	18.	2.95
+	HYDROGRAPH AT	DRD47	43.	12.17	3.	1.	0.	0.16
+	ROUTED TO	RDD47	4.	21.17	3.	1.	0.	0.16
+	HYDROGRAPH AT	DRD15	487.	12.50	60.	15.	7.	0.95
+	ROUTED TO	RDD15	132.	15.33	51.	15.	7.	0.95
+	HYDROGRAPH AT	D22	2419.	13.33	521.	130.	63.	7.72
+	6 COMBINED AT	CPD22	2303.	13.33	831.	236.	113.	16.27
+	ROUTED TO	RCPD22	1774.	14.00	807.	235.	113.	16.27
+	HYDROGRAPH AT	D33	446.	12.50	48.	12.	6.	0.65
+	2 COMBINED AT	CPD33	1774.	14.00	816.	246.	119.	16.92
+	2 COMBINED AT	D33RIV	6223.	13.50	4061.	1691.	832.	151.28
+	ROUTED TO	RCPD33	6233.	13.50	4061.	1691.	832.	151.28
+	HYDROGRAPH AT	D45	261.	12.33	20.	5.	2.	0.26
+	HYDROGRAPH AT	G36	624.	12.67	70.	18.	8.	1.00
+	3 COMBINED AT	G36RIV	6240.	13.50	4080.	1705.	838.	152.54
+	ROUTED TO	RCPG36	5972.	13.83	4063.	1705.	838.	152.54
+	HYDROGRAPH AT	D44	304.	12.33	25.	6.	3.	0.33
+	HYDROGRAPH AT	G37	344.	12.33	29.	7.	3.	0.41

+	3 COMBINED AT	G37RIV	5992.	13.83	4079.	1721.	846.	153.28
+	ROUTED TO	RCPG37	5875.	13.83	4057.	1713.	842.	153.28
+	HYDROGRAPH AT	D43	170.	12.33	11.	3.	1.	0.15
+	HYDROGRAPH AT	G38	274.	12.50	24.	6.	3.	0.34
+	3 COMBINED AT	G38RIV	5875.	13.83	4057.	1719.	845.	154.80
+	ROUTED TO	RCPG38	5726.	14.17	4037.	1716.	844.	154.80
+	HYDROGRAPH AT	G12	646.	12.67	73.	18.	9.	1.03
+	ROUTED TO	RCPG12	306.	13.83	72.	18.	9.	1.03
+	HYDROGRAPH AT	G39	386.	12.67	54.	14.	7.	0.76
+	2 COMBINED AT	CPG39	385.	12.83	126.	32.	15.	1.79
+	HYDROGRAPH AT	D34	1358.	12.33	125.	33.	16.	1.20
+	ROUTED TO	RCPD34	696.	12.67	125.	33.	16.	1.20
+	HYDROGRAPH AT	D42	229.	12.33	15.	4.	2.	0.21
+	2 COMBINED AT	CPD42	746.	12.50	140.	36.	17.	1.41
+	3 COMBINED AT	D42RIV	5934.	14.00	4116.	1763.	867.	156.97
+	ROUTED TO	RCPD42	5868.	14.17	4113.	1763.	867.	156.97
+	HYDROGRAPH AT	D41	317.	12.33	23.	6.	3.	0.29
+	2 COMBINED AT	D41RIV	5868.	14.17	4113.	1767.	869.	157.27
+	ROUTED TO	RCPD41	5859.	14.17	4112.	1766.	869.	157.27
+	HYDROGRAPH AT	G02	1563.	12.50	165.	44.	21.	2.06
+	HYDROGRAPH AT	G03	1941.	12.50	218.	61.	30.	2.46
+	2 COMBINED AT	CPG03	3484.	12.50	381.	105.	51.	4.52
+	ROUTED TO	RCPG03	777.	14.17	370.	105.	51.	4.52
+	HYDROGRAPH AT	DRG08	16.	12.50	1.	0.	0.	0.40
+	ROUTED TO	RDG08	2.	15.67	1.	0.	0.	0.40
+	HYDROGRAPH AT	G09	436.	12.67	49.	12.	6.	0.70
+	3 COMBINED AT	CPG09	776.	14.17	412.	117.	57.	5.24
+	ROUTED TO	RCPG09	553.	15.83	379.	117.	57.	5.24
+	HYDROGRAPH AT	G48	2282.	12.33	334.	112.	54.	1.91
+	ROUTED TO	RCPG48	931.	14.17	332.	111.	54.	1.91
+	HYDROGRAPH AT	G01	871.	12.67	111.	28.	13.	1.58
+	2 COMBINED AT	CPG01	964.	12.67	441.	138.	67.	3.49
+	HYDROGRAPH AT	G10	338.	12.50	31.	8.	4.	0.44
+	2 COMBINED AT	CPG10	1174.	12.67	471.	146.	71.	3.93
+	ROUTED TO	RCPG10	283.	22.67	251.	128.	65.	3.93

+	HYDROGRAPH AT	G11	486.	12.50	43.	11.	5.	0.61
+	3 COMBINED AT	CPG11	552.	15.83	413.	241.	127.	9.78
+	DIVERSION TO	DVG11	248.	15.83	186.	107.	55.	9.78
+	HYDROGRAPH AT	DG11	301.	15.83	225.	133.	71.	9.78
+	ROUTED TO	RCPG11	279.	17.83	220.	130.	68.	9.78
+	HYDROGRAPH AT	G40	931.	12.67	107.	27.	13.	1.52
+	2 COMBINED AT	CPG40	921.	12.67	221.	153.	81.	6.90
+	2 COMBINED AT	G40RIV	5859.	14.17	4212.	1882.	932.	168.55
+	ROUTED TO	RCPG40	5765.	14.33	4168.	1864.	923.	168.55
+	HYDROGRAPH AT	D40	263.	12.33	19.	5.	2.	0.23
+	HYDROGRAPH AT	G41	342.	12.50	30.	8.	4.	0.42
+	3 COMBINED AT	D40RIV	5765.	14.33	4168.	1872.	927.	169.20
+	ROUTED TO	RCPD40	5662.	14.50	4159.	1870.	926.	169.20
+	HYDROGRAPH AT	D36	247.	12.33	21.	5.	3.	0.25
+	HYDROGRAPH AT	D35	640.	12.67	86.	22.	10.	1.23
+	2 COMBINED AT	CPD35	715.	12.67	107.	27.	13.	1.43
+	ROUTED TO	RCPD35	588.	13.17	107.	27.	13.	1.43
+	HYDROGRAPH AT	D37	231.	12.50	22.	5.	3.	0.28
+	2 COMBINED AT	CPD37	597.	13.17	128.	32.	15.	1.71
+	HYDROGRAPH AT	D38	318.	12.50	30.	7.	4.	0.37
+	2 COMBINED AT	CPD38	619.	13.00	157.	39.	19.	2.07
+	ROUTED TO	RCPD38	539.	13.67	156.	39.	19.	2.07
+	HYDROGRAPH AT	D39	270.	12.50	25.	6.	3.	0.29
+	2 COMBINED AT	CPD39	542.	12.67	181.	45.	22.	2.36
+	2 COMBINED AT	D39RIV	5758.	14.50	4216.	1899.	940.	171.57
+	ROUTED TO	RCPD39	5705.	14.67	4213.	1899.	940.	171.57
+	HYDROGRAPH AT	DRG11	248.	15.83	186.	107.	55.	9.78
+	ROUTED TO	RDG11	235.	17.33	183.	106.	55.	9.78
+	HYDROGRAPH AT	G42	434.	12.67	49.	12.	6.	0.69
+	2 COMBINED AT	CPG42	429.	12.67	184.	117.	61.	5.09
+	2 COMBINED AT	G42RIV	5780.	14.67	4318.	1986.	986.	172.26
+	ROUTED TO	RCPG42	5755.	14.83	4316.	1985.	986.	172.26
+	HYDROGRAPH AT	C51	97.	13.17	28.	7.	3.	0.39
+	HYDROGRAPH AT	C52	90.	13.17	27.	7.	3.	0.38
+	2 COMBINED AT	CPC52	186.	13.17	54.	14.	7.	0.77
	ROUTED TO							

+		RCPC52	180.	13.50	54.	14.	7.	0.77
+	HYDROGRAPH AT	C53	91.	13.17	26.	7.	3.	0.37
+	ROUTED TO	RCPC53	75.	14.17	26.	7.	3.	0.37
+	HYDROGRAPH AT	B07	358.	12.33	34.	9.	4.	0.34
+	3 COMBINED AT	CPB07	358.	12.33	111.	29.	14.	1.57
+	ROUTED TO	RCPB07	217.	14.33	108.	29.	14.	1.57
+	HYDROGRAPH AT	B08	112.	13.00	28.	7.	3.	0.43
+	2 COMBINED AT	CPB08	318.	13.00	134.	36.	17.	2.00
+	2 COMBINED AT	B08RIV	5889.	14.83	4380.	2007.	997.	174.26
+	ROUTED TO	RCPB08	5889.	14.83	4380.	2007.	997.	174.26
+	HYDROGRAPH AT	DRC13	313.	12.50	35.	9.	4.	0.73
+	ROUTED TO	RDC13	174.	13.17	34.	9.	4.	0.73
+	HYDROGRAPH AT	DRC31	67.	12.67	14.	4.	2.	0.65
+	ROUTED TO	RDC31	53.	13.67	14.	4.	2.	0.65
+	HYDROGRAPH AT	DRC14	157.	12.33	27.	7.	3.	0.77
+	ROUTED TO	RDC14	122.	13.33	27.	7.	3.	0.77
+	HYDROGRAPH AT	DRC10	53.	12.50	15.	4.	2.	1.00
+	ROUTED TO	RDC10	42.	13.50	14.	4.	2.	1.00
+	HYDROGRAPH AT	DRC30	324.	12.83	70.	18.	8.	1.99
+	ROUTED TO	RDC30	308.	13.00	69.	18.	8.	1.99
+	5 COMBINED AT	CPC33A	624.	13.17	157.	40.	19.	2.69
+	ROUTED TO	RC33A	447.	14.33	149.	40.	19.	2.69
+	HYDROGRAPH AT	DRC29	148.	12.33	38.	9.	5.	3.95
+	ROUTED TO	RDC29	121.	14.00	37.	9.	5.	3.95
+	HYDROGRAPH AT	DRC28	168.	12.50	41.	10.	5.	2.78
+	ROUTED TO	RDC28	131.	14.17	40.	10.	5.	2.78
+	HYDROGRAPH AT	DRC27	214.	12.83	62.	16.	8.	2.82
+	ROUTED TO	RDC27	204.	13.33	61.	16.	8.	2.82
+	HYDROGRAPH AT	DRC20	378.	12.50	94.	24.	11.	3.26
+	ROUTED TO	RDC20	331.	13.33	92.	24.	11.	3.26
+	4 COMBINED AT	CPC33B	687.	13.67	228.	58.	28.	6.40
+	ROUTED TO	RC33B	667.	13.83	225.	58.	28.	6.40
+	HYDROGRAPH AT	DRC24	820.	12.50	89.	22.	11.	1.85
+	ROUTED TO	RDC24	636.	12.83	89.	22.	11.	1.85
+	HYDROGRAPH AT	DRC25	53.	12.33	4.	1.	1.	0.08
+	ROUTED TO	RDC25	23.	13.00	4.	1.	1.	0.08

+	HYDROGRAPH AT	DRC26	90.	12.33	17.	4.	2.	0.79
+	ROUTED TO	RDC26	57.	13.67	17.	4.	2.	0.79
+	HYDROGRAPH AT	DRD09	368.	12.50	66.	17.	8.	1.75
+	ROUTED TO	RDD09	232.	12.83	65.	17.	8.	1.75
+	4 COMBINED AT	CPC33C	887.	12.83	171.	43.	21.	4.43
+	ROUTED TO	RC33C	804.	13.17	170.	43.	21.	4.43
+	2 COMBINED AT	CPC33D	1122.	13.33	386.	100.	48.	10.83
+	ROUTED TO	RC33D	1069.	13.67	382.	100.	48.	10.83
+	2 COMBINED AT	CPC33E	1313.	14.17	508.	134.	65.	13.51
+	ROUTED TO	RC33E	1260.	14.50	501.	134.	65.	13.51
+	HYDROGRAPH AT	DRD12	111.	12.33	7.	2.	1.	0.14
+	ROUTED TO	RDD12	16.	15.33	7.	2.	1.	0.14
+	2 COMBINED AT	CPC33F	1260.	14.50	506.	136.	65.	13.66
+	ROUTED TO	RC33F	1237.	14.67	502.	136.	65.	13.66
+	HYDROGRAPH AT	C33	7839.	13.33	1659.	415.	200.	32.52
+	2 COMBINED AT	CPC33	7530.	13.33	1963.	509.	245.	46.18
+	ROUTED TO	RCPC33	5105.	14.83	1939.	509.	245.	46.18
+	HYDROGRAPH AT	C34	381.	12.67	52.	13.	6.	0.86
+	2 COMBINED AT	CPC34A	5094.	14.83	1952.	518.	249.	47.04
+	HYDROGRAPH AT	C35	3427.	12.50	326.	82.	39.	5.80
+	ROUTED TO	RCPC35	2917.	12.67	326.	82.	39.	5.80
+	2 COMBINED AT	CPC34	5083.	14.83	2200.	583.	281.	52.84
+	ROUTED TO	RCPC34	4863.	15.00	2142.	575.	277.	52.84
+	HYDROGRAPH AT	C36	1614.	12.67	199.	50.	24.	3.08
+	2 COMBINED AT	CPC36	4863.	15.00	2295.	616.	296.	55.93
+	ROUTED TO	RCPC36	4663.	15.17	2270.	611.	294.	55.93
+	HYDROGRAPH AT	C49	219.	12.33	15.	4.	2.	0.19
+	2 COMBINED AT	CPC49	4663.	15.17	2275.	614.	296.	56.11
+	ROUTED TO	RCPC49	4492.	15.50	2267.	613.	295.	56.11
+	HYDROGRAPH AT	C40	124.	12.33	8.	2.	1.	0.17
+	DIVERSION TO	DVC40	11.	12.33	0.	0.	0.	0.17
+	HYDROGRAPH AT	DC40	113.	12.33	8.	2.	1.	0.17
+	ROUTED TO	RCPC40	76.	12.50	8.	2.	1.	0.17
+	HYDROGRAPH AT	C41	62.	12.33	4.	1.	0.	0.08
+	DIVERSION TO	DVC41	21.	12.33	1.	0.	0.	0.08

+	HYDROGRAPH AT	DC41	42.	12.33	2.	1.	0.	0.08
+	ROUTED TO	RCPC41	21.	12.67	2.	1.	0.	0.08
+	HYDROGRAPH AT	C42	96.	12.33	6.	2.	1.	0.11
+	3 COMBINED AT	CPC42	137.	12.33	17.	4.	2.	0.31
+	DIVERSION TO	DVC42A	52.	12.33	6.	2.	1.	0.31
+	HYDROGRAPH AT	DC42A	85.	12.33	10.	3.	1.	0.31
+	DIVERSION TO	DVC42B	42.	12.33	5.	1.	1.	0.31
+	HYDROGRAPH AT	DC42B	42.	12.33	5.	1.	1.	0.31
+	ROUTED TO	RCPC42	24.	13.17	5.	1.	1.	0.31
+	HYDROGRAPH AT	DRC41	21.	12.33	1.	0.	0.	0.08
+	ROUTED TO	RDC41	4.	13.83	1.	0.	0.	0.08
+	HYDROGRAPH AT	C46	196.	12.50	18.	4.	2.	0.25
+	3 COMBINED AT	CPC46	198.	12.50	24.	6.	3.	0.37
+	DIVERSION TO	DVC46	101.	12.50	13.	3.	2.	0.37
+	HYDROGRAPH AT	DC46	97.	12.50	12.	3.	1.	0.37
+	ROUTED TO	RCPC46	52.	13.33	11.	3.	1.	0.37
+	HYDROGRAPH AT	C37	804.	12.83	116.	29.	14.	1.80
+	2 COMBINED AT	CPC37	832.	12.83	127.	32.	15.	2.11
+	ROUTED TO	RCPC37	663.	13.17	126.	32.	15.	2.11
+	HYDROGRAPH AT	C48	269.	12.33	20.	5.	2.	0.25
+	2 COMBINED AT	CPC48A	663.	13.17	146.	37.	18.	2.37
+	2 COMBINED AT	CPC48	4492.	15.50	2369.	641.	309.	59.14
+	ROUTED TO	RCPC48	4385.	15.67	2346.	638.	307.	59.14
+	HYDROGRAPH AT	C39	93.	12.33	6.	1.	1.	0.13
+	DIVERSION TO	DVC39	38.	12.33	2.	1.	0.	0.13
+	HYDROGRAPH AT	DC39	54.	12.33	3.	1.	0.	0.13
+	ROUTED TO	RCPC39	19.	13.00	3.	1.	0.	0.13
+	HYDROGRAPH AT	DRC40	11.	12.33	0.	0.	0.	0.17
+	ROUTED TO	RDC40	3.	12.67	0.	0.	0.	0.17
+	HYDROGRAPH AT	C43	160.	12.33	10.	2.	1.	0.21
+	3 COMBINED AT	CPC43	161.	12.33	13.	3.	2.	0.31
+	DIVERSION TO	DVC43	59.	12.33	5.	1.	1.	0.31
+	HYDROGRAPH AT	DC43	101.	12.33	9.	2.	1.	0.31
+	ROUTED TO	RCPC43	43.	12.83	9.	2.	1.	0.31
+	HYDROGRAPH AT	DRC42A	52.	12.33	6.	2.	1.	0.31
	ROUTED TO							

+		RDC42A	35.	12.83	6.	2.	1.	0.31
+	HYDROGRAPH AT	C45	145.	12.33	10.	2.	1.	0.13
+	2 COMBINED AT	CPC45	155.	12.33	16.	4.	2.	0.25
+	DIVERSION TO	DVC45	82.	12.33	8.	2.	1.	0.25
+	HYDROGRAPH AT	DC45	73.	12.33	8.	2.	1.	0.25
+	ROUTED TO	RCPC45	62.	12.33	8.	2.	1.	0.25
+	HYDROGRAPH AT	C44	203.	12.33	15.	4.	2.	0.17
+	3 COMBINED AT	CPC44	267.	12.33	31.	8.	4.	0.48
+	ROUTED TO	RCPC44	78.	14.67	30.	8.	4.	0.48
+	HYDROGRAPH AT	DRC39	38.	12.33	2.	1.	0.	0.13
+	ROUTED TO	RDC39	10.	13.50	2.	1.	0.	0.13
+	HYDROGRAPH AT	DRC43	59.	12.33	5.	1.	1.	0.31
+	ROUTED TO	RDC43	26.	12.83	5.	1.	1.	0.31
+	HYDROGRAPH AT	C38	337.	12.67	37.	9.	5.	0.64
+	3 COMBINED AT	CPC38	362.	12.67	44.	11.	5.	0.81
+	ROUTED TO	RCPC38	121.	15.67	44.	11.	5.	0.81
+	HYDROGRAPH AT	DRC42B	42.	12.33	5.	1.	1.	0.31
+	ROUTED TO	RDC42B	24.	13.83	5.	1.	1.	0.31
+	HYDROGRAPH AT	DRC45	82.	12.33	8.	2.	1.	0.25
+	ROUTED TO	RDC45	19.	14.67	8.	2.	1.	0.25
+	HYDROGRAPH AT	DRC46	101.	12.50	13.	3.	2.	0.37
+	ROUTED TO	RDC46	39.	14.17	12.	3.	2.	0.37
+	HYDROGRAPH AT	C47	671.	12.67	82.	20.	10.	1.00
+	6 COMBINED AT	CPC47A	665.	12.67	177.	45.	22.	2.57
+	2 COMBINED AT	CPC47	4498.	15.67	2458.	671.	323.	61.04
+	ROUTED TO	RCPC47	4356.	16.00	2424.	671.	323.	61.04
+	HYDROGRAPH AT	B09	148.	12.67	17.	4.	2.	0.26
+	2 COMBINED AT	CPB09	4356.	16.00	2425.	674.	325.	61.72
+	ROUTED TO	RCPB09	4325.	16.17	2418.	673.	324.	61.72
+	HYDROGRAPH AT	B01	1623.	12.83	218.	55.	26.	5.16
+	ROUTED TO	RCPB01	660.	15.00	206.	55.	26.	5.16
+	HYDROGRAPH AT	B02	1647.	12.67	191.	48.	23.	3.58
+	ROUTED TO	RCPB02	1165.	13.00	191.	48.	23.	3.58
+	HYDROGRAPH AT	B03	4071.	13.00	655.	164.	79.	13.20
+	3 COMBINED AT	CPB03	4833.	13.00	942.	242.	117.	21.96
+	DIVERSION TO	DVB03N	1852.	13.00	343.	88.	43.	21.96

+	HYDROGRAPH AT	DB03N	2981.	13.00	598.	154.	74.	21.96
+	ROUTED TO	RCPB03	2487.	13.17	594.	154.	74.	21.96
+	HYDROGRAPH AT	DRB03N	1852.	13.00	343.	88.	43.	21.96
+	DIVERSION TO	DVB16	1203.	13.00	256.	66.	32.	21.96
+	HYDROGRAPH AT	DB16	649.	13.00	87.	22.	11.	21.96
+	DIVERSION TO	DVB18	382.	13.00	58.	15.	7.	21.96
+	HYDROGRAPH AT	DB18	267.	13.00	29.	7.	4.	21.96
+	HYDROGRAPH AT	B13	170.	12.33	12.	3.	1.	0.16
+	3 COMBINED AT	CPB13	2827.	13.17	669.	173.	83.	15.13
+	DIVERSION TO	DVB13	2164.	13.17	466.	120.	58.	15.13
+	HYDROGRAPH AT	DB13	663.	13.17	202.	53.	26.	15.13
+	ROUTED TO	RCPB13	567.	13.83	195.	53.	26.	15.13
+	HYDROGRAPH AT	B04	566.	12.67	66.	16.	8.	0.91
+	ROUTED TO	RCPB04	561.	12.67	66.	16.	8.	0.91
+	HYDROGRAPH AT	B05	415.	12.50	43.	11.	5.	0.53
+	3 COMBINED AT	CPB05	882.	12.67	306.	83.	40.	4.77
+	ROUTED TO	RCPB05	533.	14.83	289.	83.	40.	4.77
+	HYDROGRAPH AT	B06	501.	12.50	46.	12.	6.	0.57
+	ROUTED TO	RCPB06	260.	13.50	46.	12.	6.	0.57
+	HYDROGRAPH AT	B10	504.	12.50	47.	12.	6.	0.55
+	3 COMBINED AT	CPB10	644.	13.83	355.	106.	51.	5.90
+	HYDROGRAPH AT	B11	220.	12.50	21.	5.	2.	0.24
+	2 COMBINED AT	CPB11	710.	12.50	375.	111.	53.	6.14
+	ROUTED TO	RCPB11	612.	14.33	363.	110.	53.	6.14
+	HYDROGRAPH AT	B12	244.	12.50	27.	7.	3.	0.33
+	2 COMBINED AT	CPB12A	612.	14.33	382.	117.	56.	6.47
+	2 COMBINED AT	CPB12	4617.	16.00	2657.	758.	365.	67.78
+	HYDROGRAPH AT	H02	1954.	12.33	267.	89.	43.	1.58
+	ROUTED TO	RCPH02	1237.	12.83	267.	89.	43.	1.58
+	HYDROGRAPH AT	H01	1538.	12.33	133.	36.	17.	1.61
+	2 COMBINED AT	CPH01	2097.	12.33	398.	124.	60.	3.20
+	DIVERSION TO	DVH01	1073.	12.33	226.	76.	36.	3.20
+	HYDROGRAPH AT	DH01	1024.	12.33	173.	49.	24.	3.20
+	ROUTED TO	RCPH01	854.	12.83	172.	49.	24.	3.20
+	HYDROGRAPH AT	H24	449.	12.33	29.	7.	4.	0.42

+	2 COMBINED AT	CPH24	858.	12.83	202.	56.	27.	1.98
+	ROUTED TO	RCPH24	722.	13.50	201.	56.	27.	1.98
+	HYDROGRAPH AT	H55	340.	12.33	24.	6.	3.	0.34
+	2 COMBINED AT	CPH55	722.	13.50	224.	62.	30.	2.32
+	ROUTED TO	RCPH55	629.	14.33	221.	62.	30.	2.32
+	HYDROGRAPH AT	H56	361.	12.33	28.	7.	3.	0.40
+	2 COMBINED AT	CPH56	629.	14.33	245.	69.	33.	2.71
+	ROUTED TO	RCPH56	555.	15.17	244.	68.	33.	2.71
+	HYDROGRAPH AT	H57	393.	12.33	30.	8.	4.	0.42
+	2 COMBINED AT	CPH57	555.	15.17	271.	76.	37.	3.14
+	ROUTED TO	RCPH57	512.	16.00	270.	76.	37.	3.14
+	HYDROGRAPH AT	H68	346.	12.33	24.	6.	3.	0.34
+	2 COMBINED AT	CPH68	512.	16.00	290.	82.	40.	3.47
+	3 COMBINED AT	B12RIV	8443.	15.83	6375.	2554.	1261.	262.59
+	ROUTED TO	RCPB12	8427.	16.00	6366.	2554.	1261.	262.59
+	HYDROGRAPH AT	DRH01	1073.	12.33	226.	76.	36.	3.20
+	ROUTED TO	RDH01	841.	13.00	226.	75.	36.	3.20
+	HYDROGRAPH AT	H25	344.	12.33	22.	6.	3.	0.32
+	2 COMBINED AT	CPH25	844.	13.00	248.	81.	39.	1.95
+	ROUTED TO	RCPH25	786.	13.33	248.	81.	39.	1.95
+	HYDROGRAPH AT	H58	306.	12.33	22.	5.	3.	0.31
+	2 COMBINED AT	CPH58	786.	13.33	269.	86.	42.	2.25
+	ROUTED TO	RCPH58	718.	14.00	268.	86.	42.	2.25
+	HYDROGRAPH AT	H26	554.	12.50	53.	13.	6.	0.75
+	ROUTED TO	RCPH26	385.	12.83	53.	13.	6.	0.75
+	HYDROGRAPH AT	H59	414.	12.33	27.	7.	3.	0.39
+	3 COMBINED AT	CPH59	740.	14.00	346.	105.	51.	3.39
+	DIVERSION TO	DVH59	484.	14.00	230.	70.	34.	3.39
+	HYDROGRAPH AT	DH59	256.	14.00	116.	35.	17.	3.39
+	ROUTED TO	RCPH59	244.	14.83	115.	35.	17.	3.39
+	HYDROGRAPH AT	H60	442.	12.50	39.	10.	5.	0.55
+	2 COMBINED AT	CPH60	448.	12.50	151.	45.	22.	1.74
+	ROUTED TO	RCPH60	230.	15.83	148.	45.	22.	1.74
+	HYDROGRAPH AT	DRH59	484.	14.00	230.	70.	34.	3.39
+	ROUTED TO	RDH59	449.	15.17	226.	70.	34.	3.39
	HYDROGRAPH AT							

+		H61	383.	12.50	34.	8.	4.	0.47
+	2 COMBINED AT	CPH61	450.	15.17	251.	78.	38.	2.68
+	ROUTED TO	RCPH61	431.	16.00	250.	78.	38.	2.68
+	HYDROGRAPH AT	H69	485.	12.33	38.	9.	5.	0.53
+	3 COMBINED AT	CPH69	655.	16.00	420.	131.	64.	4.94
+	2 COMBINED AT	H69RIV	8899.	16.00	6632.	2646.	1307.	265.90
+	ROUTED TO	RCPH69	8874.	16.17	6630.	2646.	1306.	265.90
+	HYDROGRAPH AT	H65	336.	12.50	29.	7.	4.	0.42
+	ROUTED TO	RCPH65	195.	13.00	29.	7.	4.	0.42
+	HYDROGRAPH AT	H67	181.	12.33	13.	3.	2.	0.19
+	2 COMBINED AT	CPH67	195.	13.00	43.	11.	5.	0.60
+	ROUTED TO	RCPH67	159.	13.50	42.	11.	5.	0.60
+	HYDROGRAPH AT	H70	382.	12.50	35.	9.	4.	0.49
+	2 COMBINED AT	CPH70	390.	12.50	77.	19.	9.	1.10
+	HYDROGRAPH AT	B15	539.	12.50	51.	13.	6.	0.64
+	3 COMBINED AT	B15RIV	8875.	16.17	6646.	2664.	1316.	267.64
+	ROUTED TO	RCPB15	8825.	16.33	6639.	2663.	1315.	267.64
+	HYDROGRAPH AT	DRB13	2164.	13.17	466.	120.	58.	15.13
+	ROUTED TO	RDB13	1519.	14.00	456.	120.	58.	15.13
+	HYDROGRAPH AT	B14	326.	12.50	31.	8.	4.	0.39
+	HYDROGRAPH AT	DRB18	382.	13.00	58.	15.	7.	21.96
+	DIVERSION TO	DVB14	296.	13.00	51.	13.	6.	21.96
+	HYDROGRAPH AT	DB14	85.	13.00	8.	2.	1.	21.96
+	DIVERSION TO	DVB19	67.	13.00	6.	2.	1.	21.96
+	HYDROGRAPH AT	DB19	18.	13.00	1.	0.	0.	21.96
+	3 COMBINED AT	CPB14	1570.	14.00	493.	132.	63.	12.33
+	HYDROGRAPH AT	B21	258.	12.50	23.	6.	3.	0.31
+	2 COMBINED AT	CPB21	1570.	14.00	515.	137.	66.	12.64
+	ROUTED TO	RCPB21	1306.	15.17	496.	136.	66.	12.64
+	HYDROGRAPH AT	B20	182.	12.33	13.	3.	2.	0.18
+	ROUTED TO	RCPB20	54.	13.67	13.	3.	2.	0.18
+	HYDROGRAPH AT	B44	298.	12.50	28.	7.	3.	0.38
+	2 COMBINED AT	CPB44	297.	12.50	41.	10.	5.	0.55
+	ROUTED TO	RCPB44	275.	12.50	40.	10.	5.	0.55
+	HYDROGRAPH AT	B45	635.	12.67	73.	18.	9.	0.97
+	3 COMBINED AT	CPB45	1306.	15.17	570.	162.	78.	14.16

+	2 COMBINED AT	B45RIV	9008.	16.33	6848.	2733.	1349.	282.17
+	ROUTED TO	RCPB45	9015.	16.33	6848.	2733.	1349.	282.17
+	HYDROGRAPH AT	H22	1483.	12.33	123.	33.	16.	1.46
+	ROUTED TO	RCPH22	836.	12.83	123.	33.	16.	1.46
+	HYDROGRAPH AT	H03	2417.	12.33	391.	132.	64.	2.19
+	ROUTED TO	RCPH03	1720.	12.67	390.	131.	64.	2.19
+	HYDROGRAPH AT	H23	564.	12.50	49.	12.	6.	0.71
+	3 COMBINED AT	CPH23	2672.	12.67	559.	176.	85.	4.35
+	ROUTED TO	RCPH23	2183.	13.33	558.	175.	85.	4.35
+	HYDROGRAPH AT	H27	372.	12.33	27.	7.	3.	0.38
+	ROUTED TO	RCPH27	194.	12.83	27.	7.	3.	0.38
+	HYDROGRAPH AT	H62	509.	12.33	35.	9.	4.	0.49
+	3 COMBINED AT	CPH62	2259.	13.33	618.	190.	92.	5.23
+	ROUTED TO	RCPH62	2022.	13.67	617.	190.	92.	5.23
+	HYDROGRAPH AT	H20	484.	12.33	36.	9.	4.	0.50
+	ROUTED TO	RCPH20	242.	12.83	36.	9.	4.	0.50
+	HYDROGRAPH AT	H28	670.	12.33	50.	13.	6.	0.72
+	2 COMBINED AT	CPH28	677.	12.33	85.	21.	10.	1.24
+	ROUTED TO	RCPH28	415.	13.00	85.	21.	10.	1.24
+	HYDROGRAPH AT	H63	185.	12.33	12.	3.	1.	0.17
+	3 COMBINED AT	CPH63	2213.	13.67	711.	214.	104.	6.64
+	DIVERSION TO	DVH63	1023.	13.67	338.	102.	49.	6.64
+	HYDROGRAPH AT	DH63	1190.	13.67	373.	112.	54.	6.64
+	ROUTED TO	RCPH63	1014.	14.50	372.	112.	54.	6.64
+	HYDROGRAPH AT	H66	330.	12.83	51.	13.	6.	0.72
+	2 COMBINED AT	CPH66	1026.	14.50	424.	125.	61.	3.64
+	ROUTED TO	RCPH66	920.	15.33	424.	125.	61.	3.64
+	HYDROGRAPH AT	H71	698.	12.33	46.	11.	5.	0.65
+	2 COMBINED AT	CPH71	920.	15.33	467.	136.	66.	4.29
+	ROUTED TO	RCPH71	882.	15.67	465.	136.	66.	4.29
+	HYDROGRAPH AT	H72	473.	12.33	31.	8.	4.	0.42
+	2 COMBINED AT	CPH72	882.	15.67	495.	143.	70.	4.71
+	2 COMBINED AT	H72RIV	9646.	16.33	7167.	2843.	1405.	277.74
+	ROUTED TO	RCPH72	9488.	16.83	7136.	2841.	1403.	277.74
+	HYDROGRAPH AT	B42	188.	12.33	14.	4.	2.	0.20

+	ROUTED TO	RCPB42	144.	12.83	14.	4.	2.	0.20
+	HYDROGRAPH AT	B43	178.	12.33	15.	4.	2.	0.17
+	2 COMBINED AT	CPB43	179.	12.33	29.	7.	3.	0.37
+	HYDROGRAPH AT	B41	285.	12.67	33.	8.	4.	0.44
+	2 COMBINED AT	CPB41	457.	12.50	62.	15.	7.	0.82
+	ROUTED TO	RCPB41	311.	13.50	61.	15.	7.	0.82
+	HYDROGRAPH AT	B46	651.	12.67	83.	21.	10.	1.06
+	2 COMBINED AT	CPB46	647.	12.67	142.	36.	17.	2.43
+	2 COMBINED AT	B46RIV	9506.	16.83	7161.	2867.	1417.	280.17
+	ROUTED TO	RCPB46	9484.	16.83	7142.	2860.	1413.	280.17
+	HYDROGRAPH AT	DRH63	1023.	13.67	338.	102.	49.	6.64
+	ROUTED TO	RDH63	970.	14.00	337.	102.	49.	6.64
+	HYDROGRAPH AT	H53	293.	12.50	28.	7.	3.	0.39
+	2 COMBINED AT	CPH53	973.	14.00	363.	109.	53.	4.10
+	HYDROGRAPH AT	H18	453.	12.33	31.	8.	4.	0.44
+	ROUTED TO	RCPH18	130.	14.00	31.	8.	4.	0.44
+	HYDROGRAPH AT	H29	643.	12.67	73.	18.	9.	1.04
+	2 COMBINED AT	CPH29	641.	12.67	103.	26.	12.	1.48
+	HYDROGRAPH AT	H04	852.	12.33	97.	28.	13.	1.21
+	ROUTED TO	RCPH04	608.	12.67	97.	28.	13.	1.21
+	HYDROGRAPH AT	H17	459.	12.33	34.	9.	4.	0.45
+	2 COMBINED AT	CPH17	776.	12.50	130.	36.	17.	1.64
+	DIVERSION TO	DVH17	376.	12.50	80.	23.	11.	1.64
+	HYDROGRAPH AT	DH17	399.	12.50	49.	13.	6.	1.64
+	DIVERSION TO	DVH30A	204.	12.50	22.	6.	3.	1.64
+	HYDROGRAPH AT	DH30A	195.	12.50	28.	8.	4.	1.64
+	ROUTED TO	RCPH17	133.	13.17	28.	8.	4.	1.64
+	HYDROGRAPH AT	H30	458.	12.33	33.	8.	4.	0.48
+	2 COMBINED AT	CPH30	458.	12.33	61.	16.	8.	0.92
+	ROUTED TO	RCPH30	261.	12.67	61.	16.	8.	0.92
+	HYDROGRAPH AT	H51	332.	12.33	22.	5.	3.	0.30
+	2 COMBINED AT	CPH51	368.	12.33	82.	21.	10.	1.22
+	ROUTED TO	RCPH51	267.	13.00	81.	21.	10.	1.22
+	HYDROGRAPH AT	H52	230.	12.33	16.	4.	2.	0.22
+	2 COMBINED AT	CPH52A	267.	13.00	96.	25.	12.	1.45
	3 COMBINED AT							

+		CPH52B	1223.	14.00	558.	158.	77.	7.03
+	ROUTED TO	RCPH52	1144.	14.50	554.	158.	77.	7.03
+	HYDROGRAPH AT	H54	232.	12.33	15.	4.	2.	0.21
+	2 COMBINED AT	CPH54	1144.	14.50	565.	162.	79.	7.24
+	ROUTED TO	RCPH54	1119.	14.67	562.	162.	79.	7.24
+	HYDROGRAPH AT	H05	1338.	12.33	164.	51.	25.	1.51
+	ROUTED TO	RCPH05	1017.	12.67	163.	51.	25.	1.51
+	DIVERSION TO	DVH05	332.	12.67	47.	12.	6.	1.51
+	HYDROGRAPH AT	DH05	685.	12.67	116.	39.	19.	1.51
+	HYDROGRAPH AT	DRH17	376.	12.50	80.	23.	11.	1.64
+	DIVERSION TO	DVH31A	271.	12.50	62.	18.	9.	1.64
+	HYDROGRAPH AT	DH31A	106.	12.50	19.	5.	2.	1.64
+	HYDROGRAPH AT	H31	391.	12.33	26.	7.	3.	0.37
+	3 COMBINED AT	CPH31	856.	12.50	161.	50.	24.	1.59
+	HYDROGRAPH AT	H15B	479.	12.17	41.	13.	6.	0.30
+	ROUTED TO	RCH15B	364.	12.33	41.	13.	6.	0.30
+	HYDROGRAPH AT	H15A	602.	12.33	57.	18.	9.	0.48
+	2 COMBINED AT	CPH15A	962.	12.33	98.	31.	15.	0.77
+	HYDROGRAPH AT	DRH05	332.	12.67	47.	12.	6.	1.51
+	2 COMBINED AT	CPH15	1086.	12.33	144.	43.	21.	1.29
+	DIVERSION TO	DVH15A	198.	12.33	35.	11.	6.	1.29
+	HYDROGRAPH AT	DH15A	887.	12.33	109.	31.	15.	1.29
+	2 COMBINED AT	CPH31A	1654.	12.33	269.	81.	39.	2.57
+	DIVERSION TO	DVH31	146.	12.83	53.	18.	8.	2.57
+	HYDROGRAPH AT	DH31	1561.	12.33	217.	63.	31.	2.57
+	DIVERSION TO	DVH33A	1243.	12.33	172.	51.	24.	2.57
+	HYDROGRAPH AT	DH33A	318.	12.33	45.	13.	6.	2.57
+	HYDROGRAPH AT	DRH31	146.	12.83	53.	18.	8.	2.57
+	2 COMBINED AT	CPH32B	413.	12.33	99.	31.	15.	0.67
+	ROUTED TO	RCPH31	320.	13.33	98.	31.	15.	0.67
+	HYDROGRAPH AT	DRH31A	271.	12.50	62.	18.	9.	1.64
+	ROUTED TO	RDH31A	206.	13.50	61.	18.	9.	1.64
+	HYDROGRAPH AT	DRH30A	204.	12.50	22.	6.	3.	1.64
+	2 COMBINED AT	CPH32A	216.	12.50	83.	24.	11.	0.65
+	HYDROGRAPH AT	H32	569.	12.50	50.	13.	6.	0.71
+	3 COMBINED AT	CPH32	838.	12.50	230.	66.	32.	2.04

+	DIVERSION TO	DVH32	189.	12.50	34.	9.	4.	2.04
+	HYDROGRAPH AT	DH32	649.	12.50	196.	58.	28.	2.04
+	ROUTED TO	RCPH32	386.	14.83	190.	57.	28.	2.04
+	HYDROGRAPH AT	DRH32	189.	12.50	34.	9.	4.	2.04
+	ROUTED TO	RDH32	99.	13.17	34.	9.	4.	2.04
+	HYDROGRAPH AT	H48	308.	12.33	24.	6.	3.	0.33
+	2 COMBINED AT	CPH48	306.	12.33	58.	15.	7.	0.91
+	DIVERSION TO	DVH48	178.	12.33	35.	9.	4.	0.91
+	HYDROGRAPH AT	DH48	128.	12.33	23.	6.	3.	0.91
+	ROUTED TO	RCPH48	61.	13.17	23.	6.	3.	0.91
+	HYDROGRAPH AT	H50	388.	12.67	45.	11.	5.	0.63
+	3 COMBINED AT	CPH50	414.	14.83	238.	74.	36.	2.54
+	ROUTED TO	RCPH50	408.	15.17	235.	74.	36.	2.54
+	HYDROGRAPH AT	DRH48	178.	12.33	35.	9.	4.	0.91
+	ROUTED TO	RDH48	97.	13.17	35.	9.	4.	0.91
+	HYDROGRAPH AT	H49	382.	12.50	34.	8.	4.	0.48
+	2 COMBINED AT	CPH49	384.	12.50	68.	17.	8.	1.01
+	ROUTED TO	RCPH49	304.	12.83	67.	17.	8.	1.01
+	HYDROGRAPH AT	H73	308.	12.33	20.	5.	2.	0.29
+	4 COMBINED AT	CPH73	1486.	14.83	861.	254.	123.	11.08
+	ROUTED TO	RCPH73	1422.	15.33	850.	254.	123.	11.08
+	HYDROGRAPH AT	H74	650.	12.33	57.	14.	7.	0.80
+	2 COMBINED AT	CPH74	1421.	15.33	872.	267.	130.	11.88
+	2 COMBINED AT	H74RIV	10108.	16.67	7659.	3042.	1502.	290.02
+	ROUTED TO	RCPH74	10064.	16.83	7650.	3040.	1501.	290.02
+	HYDROGRAPH AT	DRH15A	198.	12.33	35.	11.	6.	1.29
+	ROUTED TO	RCH15A	173.	12.33	35.	11.	6.	1.29
+	HYDROGRAPH AT	DRH33A	1243.	12.33	172.	51.	24.	2.57
+	ROUTED TO	RDH33	795.	13.17	171.	50.	24.	2.57
+	2 COMBINED AT	CPH33B	855.	13.00	205.	62.	30.	2.06
+	HYDROGRAPH AT	H33	718.	12.50	76.	19.	9.	1.08
+	2 COMBINED AT	CPH33	1017.	12.67	280.	80.	39.	2.83
+	DIVERSION TO	DVH33	509.	12.67	140.	40.	20.	2.83
+	HYDROGRAPH AT	DH33	508.	12.67	140.	40.	19.	2.83
+	ROUTED TO	RCPH33	480.	13.17	139.	40.	19.	2.83

+	HYDROGRAPH AT	H47	414.	12.33	27.	7.	3.	0.38
+	2 COMBINED AT	CPH47	483.	13.17	167.	47.	23.	1.80
+	ROUTED TO	RCPH47	451.	13.67	165.	47.	23.	1.80
+	HYDROGRAPH AT	H75	974.	12.17	76.	20.	10.	0.75
+	2 COMBINED AT	CPH75	977.	12.17	238.	66.	32.	2.27
+	ROUTED TO	RCPH75	597.	12.67	235.	66.	32.	2.27
+	HYDROGRAPH AT	H76	738.	12.33	53.	13.	6.	0.75
+	2 COMBINED AT	CPH76	1051.	12.50	286.	79.	38.	3.03
+	ROUTED TO	RCPH76	738.	12.83	285.	79.	38.	3.03
+	HYDROGRAPH AT	H77	312.	12.33	21.	5.	3.	0.27
+	2 COMBINED AT	CPH77	738.	12.83	305.	84.	41.	3.30
+	2 COMBINED AT	H77RIV	10114.	16.83	7733.	3091.	1527.	294.03
+	ROUTED TO	RCPH77	10089.	17.00	7717.	3089.	1527.	294.03
+	HYDROGRAPH AT	B40	114.	12.50	10.	2.	1.	0.18
+	ROUTED TO	RCPB40	37.	14.00	10.	2.	1.	0.18
+	HYDROGRAPH AT	B49	251.	12.50	24.	6.	3.	0.27
+	ROUTED TO	RCPB49	183.	12.67	24.	6.	3.	0.27
+	HYDROGRAPH AT	B50	232.	12.50	22.	5.	3.	0.27
+	3 COMBINED AT	CPB50	378.	12.50	55.	14.	7.	0.72
+	ROUTED TO	RCPB50	253.	13.17	54.	14.	7.	0.72
+	HYDROGRAPH AT	B19	343.	12.67	39.	10.	5.	0.54
+	HYDROGRAPH AT	DRB19	67.	13.00	6.	2.	1.	21.96
+	2 COMBINED AT	CPB19	374.	12.67	48.	12.	6.	0.88
+	ROUTED TO	RCPB19	215.	13.83	47.	12.	6.	0.88
+	HYDROGRAPH AT	B48	508.	12.50	47.	12.	6.	0.57
+	3 COMBINED AT	CPB48	508.	12.50	144.	37.	18.	2.17
+	ROUTED TO	RCPB48	392.	12.67	144.	37.	18.	2.17
+	HYDROGRAPH AT	B47	298.	12.33	25.	6.	3.	0.32
+	2 COMBINED AT	CPB47	573.	12.50	168.	43.	21.	2.49
+	ROUTED TO	RCPB47	413.	13.33	163.	43.	21.	2.49
+	HYDROGRAPH AT	B61	840.	12.33	81.	21.	10.	0.75
+	2 COMBINED AT	CPB61	832.	12.33	237.	64.	31.	3.23
+	2 COMBINED AT	B61RIV	10147.	17.00	7794.	3133.	1550.	296.93
+	ROUTED TO	RCPB61	10110.	17.17	7769.	3124.	1546.	296.93
+	HYDROGRAPH AT	B22	529.	12.33	33.	8.	4.	0.55
	ROUTED TO							

+		RCPB22	174.	13.33	33.	8.	4.	0.55
+	HYDROGRAPH AT	B23	210.	12.17	13.	3.	2.	0.30
+	DIVERSION TO	DVB23	9.	12.17	0.	0.	0.	0.30
+	HYDROGRAPH AT	DB23	202.	12.17	13.	3.	2.	0.30
+	ROUTED TO	RCPB23	104.	12.67	13.	3.	2.	0.30
+	HYDROGRAPH AT	B36	196.	12.33	15.	4.	2.	0.18
+	2 COMBINED AT	CPB36	208.	12.33	27.	7.	3.	0.47
+	HYDROGRAPH AT	DRB23	9.	12.17	0.	0.	0.	0.30
+	ROUTED TO	RDB23	2.	14.00	0.	0.	0.	0.30
+	HYDROGRAPH AT	B24	209.	12.33	13.	3.	2.	0.24
+	2 COMBINED AT	CPB24A	209.	12.33	13.	3.	2.	0.25
+	2 COMBINED AT	CPB24	414.	12.33	40.	10.	5.	0.72
+	ROUTED TO	RCPB24	252.	12.67	40.	10.	5.	0.72
+	HYDROGRAPH AT	B37	102.	12.33	7.	2.	1.	0.09
+	3 COMBINED AT	CPB37	260.	12.67	80.	20.	10.	1.36
+	HYDROGRAPH AT	B25	222.	12.33	15.	4.	2.	0.30
+	2 COMBINED AT	CPB25	422.	12.33	94.	24.	11.	1.65
+	ROUTED TO	RCPB25	284.	13.17	93.	24.	11.	1.65
+	HYDROGRAPH AT	B26	216.	12.50	19.	5.	2.	0.35
+	2 COMBINED AT	CPB26	284.	13.00	110.	28.	14.	2.01
+	DIVERSION TO	DVB26	161.	13.00	58.	14.	7.	2.01
+	HYDROGRAPH AT	DB26	123.	13.00	52.	14.	7.	2.01
+	ROUTED TO	RCPB26	117.	13.67	51.	14.	7.	2.01
+	HYDROGRAPH AT	DRB14	296.	13.00	51.	13.	6.	21.96
+	DIVERSION TO	DVB18B	88.	13.00	15.	4.	2.	21.96
+	HYDROGRAPH AT	DB18B	208.	13.00	36.	9.	4.	21.96
+	ROUTED TO	RDB18	93.	15.33	32.	9.	4.	21.96
+	HYDROGRAPH AT	B17	52.	12.17	3.	1.	0.	0.05
+	DIVERSION TO	DVB17	28.	12.17	2.	0.	0.	0.05
+	HYDROGRAPH AT	DB17	24.	12.17	1.	0.	0.	0.05
+	ROUTED TO	RCPB17	5.	14.17	1.	0.	0.	0.05
+	HYDROGRAPH AT	B18	349.	12.67	39.	10.	5.	0.62
+	3 COMBINED AT	CPB18	346.	12.67	72.	21.	10.	1.64
+	HYDROGRAPH AT	DRB16	1203.	13.00	256.	66.	32.	21.96
+	ROUTED TO	RDB16	798.	14.00	254.	66.	32.	21.96
+	HYDROGRAPH AT	DRB17	28.	12.17	2.	0.	0.	0.05

+	ROUTED TO	RDB17	7.	13.67	2.	0.	0.	0.05
+	HYDROGRAPH AT	DRB18B	88.	13.00	15.	4.	2.	21.96
+	HYDROGRAPH AT	B16	596.	12.50	51.	13.	6.	0.82
+	4 COMBINED AT	CPB16	905.	14.00	349.	91.	44.	6.32
+	ROUTED TO	RCPB16	809.	14.67	341.	91.	44.	6.32
+	HYDROGRAPH AT	B39	297.	12.50	26.	6.	3.	0.39
+	2 COMBINED AT	CPB39A	809.	14.67	360.	97.	47.	6.71
+	2 COMBINED AT	CPB39	858.	14.83	429.	117.	56.	8.35
+	ROUTED TO	RCPB39	820.	15.33	425.	117.	56.	8.35
+	HYDROGRAPH AT	B54	254.	12.50	23.	6.	3.	0.29
+	2 COMBINED AT	CPB54	820.	15.33	441.	123.	59.	8.64
+	ROUTED TO	RCPB54	796.	15.67	438.	123.	59.	8.64
+	HYDROGRAPH AT	B38	328.	12.50	37.	9.	4.	0.44
+	2 COMBINED AT	CPB38	796.	15.67	466.	131.	63.	9.08
+	ROUTED TO	RCPB38	779.	15.83	464.	131.	63.	9.08
+	HYDROGRAPH AT	B27	639.	12.33	41.	10.	5.	0.86
+	ROUTED TO	RCPB27	341.	12.67	41.	10.	5.	0.86
+	HYDROGRAPH AT	B35	157.	12.50	13.	3.	2.	0.25
+	2 COMBINED AT	CPB35A	416.	12.67	53.	13.	6.	1.11
+	HYDROGRAPH AT	DRB26	161.	13.00	58.	14.	7.	2.01
+	2 COMBINED AT	CPB35	535.	12.67	111.	28.	13.	2.29
+	ROUTED TO	RCPB35	455.	13.00	111.	28.	13.	2.29
+	HYDROGRAPH AT	B28	266.	12.33	18.	5.	2.	0.39
+	HYDROGRAPH AT	B34	80.	12.33	6.	2.	1.	0.13
+	2 COMBINED AT	CPB34	344.	12.33	25.	6.	3.	0.51
+	ROUTED TO	RCPB34	157.	13.17	25.	6.	3.	0.51
+	HYDROGRAPH AT	B33	188.	12.50	16.	4.	2.	0.28
+	2 COMBINED AT	CPB33A	214.	12.50	40.	10.	5.	0.79
+	2 COMBINED AT	CPB33	598.	13.00	150.	37.	18.	3.08
+	ROUTED TO	RCPB33	551.	13.33	150.	37.	18.	3.08
+	HYDROGRAPH AT	B65	237.	12.33	17.	4.	2.	0.20
+	4 COMBINED AT	CPB65	1016.	13.50	647.	179.	86.	13.18
+	ROUTED TO	RCPB65	969.	13.83	635.	179.	86.	13.18
+	HYDROGRAPH AT	B55	74.	12.33	5.	1.	1.	0.08
+	ROUTED TO	RCPB55	18.	14.17	5.	1.	1.	0.08

+	HYDROGRAPH AT	B31	130.	12.33	8.	2.	1.	0.16
+	ROUTED TO	RCPB31	36.	13.50	7.	2.	1.	0.16
+	HYDROGRAPH AT	B32	34.	12.33	2.	1.	0.	0.04
+	ROUTED TO	RCPB32	11.	13.33	2.	1.	0.	0.04
+	HYDROGRAPH AT	B30	272.	12.50	23.	6.	3.	0.53
+	DIVERSION TO	DVB30	234.	12.50	21.	5.	2.	0.53
+	HYDROGRAPH AT	DB30	39.	12.50	2.	1.	0.	0.53
+	ROUTED TO	RCPB30	11.	13.33	2.	1.	0.	0.53
+	HYDROGRAPH AT	B29	514.	12.50	47.	12.	6.	0.92
+	4 COMBINED AT	CPB29	512.	12.50	58.	14.	7.	1.23
+	ROUTED TO	RCPB29	280.	13.17	57.	14.	7.	1.23
+	HYDROGRAPH AT	DRB30	234.	12.50	21.	5.	2.	0.53
+	ROUTED TO	RDB30	135.	13.00	21.	5.	2.	0.53
+	HYDROGRAPH AT	B57	104.	12.33	8.	2.	1.	0.10
+	2 COMBINED AT	CPB57	136.	13.00	28.	7.	3.	0.52
+	ROUTED TO	RCPB57	126.	13.17	28.	7.	3.	0.52
+	HYDROGRAPH AT	B56	178.	12.50	17.	4.	2.	0.22
+	2 COMBINED AT	CPB56	249.	12.50	45.	11.	5.	0.75
+	ROUTED TO	RCPB56	223.	12.67	45.	11.	5.	0.75
+	HYDROGRAPH AT	B58	194.	12.50	17.	4.	2.	0.24
+	2 COMBINED AT	CPB58	387.	12.50	61.	16.	7.	0.99
+	ROUTED TO	RCPB58	242.	13.33	60.	16.	7.	0.99
+	HYDROGRAPH AT	B59	640.	12.33	53.	14.	7.	0.50
+	5 COMBINED AT	CPB59	1286.	13.50	755.	216.	104.	15.98
+	ROUTED TO	RCPB59	878.	16.17	689.	216.	104.	15.98
+	HYDROGRAPH AT	B52	428.	12.50	38.	9.	5.	0.58
+	ROUTED TO	RCPB52	135.	12.83	36.	9.	5.	0.58
+	HYDROGRAPH AT	B53	442.	12.50	40.	10.	5.	0.54
+	ROUTED TO	RCPB53	87.	12.83	33.	10.	5.	0.54
+	HYDROGRAPH AT	B60	133.	13.83	63.	16.	8.	0.99
+	4 COMBINED AT	CPB60	935.	15.83	741.	245.	119.	18.09
+	ROUTED TO	RCPB60	935.	16.00	740.	245.	119.	18.09
+	HYDROGRAPH AT	DRH33	509.	12.67	140.	40.	20.	2.83
+	ROUTED TO	RDH33	492.	13.17	140.	40.	20.	2.83
+	HYDROGRAPH AT	H46	336.	12.33	23.	6.	3.	0.31
	2 COMBINED AT							

+		CPH46	495.	13.17	163.	46.	22.	1.73
+	ROUTED TO	RCPH46	462.	13.67	161.	46.	22.	1.73
+	HYDROGRAPH AT	H06	743.	12.33	49.	12.	6.	1.23
+	DIVERSION TO	DVH06	425.	12.33	28.	7.	3.	1.23
+	HYDROGRAPH AT	DH06	318.	12.33	21.	5.	3.	1.23
+	ROUTED TO	RCPH06	156.	12.83	21.	5.	3.	1.23
+	HYDROGRAPH AT	H16	344.	12.33	49.	17.	8.	0.31
+	ROUTED TO	RCPH16	281.	12.50	49.	17.	8.	0.31
+	HYDROGRAPH AT	H14	507.	12.67	63.	17.	8.	0.83
+	3 COMBINED AT	CPH14	867.	12.67	133.	39.	19.	1.65
+	ROUTED TO	RCPH14	716.	12.83	133.	39.	19.	1.65
+	HYDROGRAPH AT	DRH06	425.	12.33	28.	7.	3.	1.23
+	ROUTED TO	RDH06	106.	13.83	28.	7.	3.	1.23
+	HYDROGRAPH AT	H13	464.	12.33	37.	9.	4.	0.52
+	3 COMBINED AT	CPH13	748.	12.83	194.	54.	26.	2.88
+	ROUTED TO	RCPH13	705.	13.00	194.	54.	26.	2.88
+	HYDROGRAPH AT	H12	400.	12.33	30.	9.	4.	0.48
+	ROUTED TO	RCPH12	145.	13.33	29.	8.	4.	0.48
+	HYDROGRAPH AT	H07	563.	12.50	50.	12.	6.	0.70
+	HYDROGRAPH AT	H35	1204.	12.33	74.	19.	9.	1.30
+	DIVERSION TO	DVH35	106.	12.33	4.	1.	0.	1.30
+	HYDROGRAPH AT	DH35	1098.	12.33	70.	18.	8.	1.30
+	ROUTED TO	RCH35A	505.	12.67	70.	18.	8.	1.30
+	3 COMBINED AT	CPH07	1024.	12.50	148.	38.	18.	2.35
+	DIVERSION TO	DVH07	530.	12.50	81.	21.	10.	2.35
+	HYDROGRAPH AT	DH07	494.	12.50	67.	17.	8.	2.35
+	ROUTED TO	RCPH07	349.	12.83	67.	17.	8.	2.35
+	HYDROGRAPH AT	H34	448.	12.33	29.	7.	4.	0.41
+	3 COMBINED AT	CPH34	1009.	12.83	288.	78.	38.	4.44
+	ROUTED TO	RCPH34	944.	13.33	286.	78.	38.	4.44
+	HYDROGRAPH AT	H45	275.	12.33	20.	5.	2.	0.28
+	2 COMBINED AT	CPH45	944.	13.33	304.	83.	40.	4.72
+	ROUTED TO	RCPH45	893.	13.67	301.	83.	40.	4.72
+	HYDROGRAPH AT	DRH07	530.	12.50	81.	21.	10.	2.35
+	ROUTED TO	RDH07	377.	12.83	80.	21.	10.	2.35
+	HYDROGRAPH AT	H36	454.	12.33	31.	8.	4.	0.44

+	2 COMBINED AT	CPH36	468.	12.33	111.	29.	14.	1.63
+	ROUTED TO	RCPH36	348.	13.33	110.	29.	14.	1.63
+	HYDROGRAPH AT	H44	519.	12.33	39.	10.	5.	0.55
+	2 COMBINED AT	CPH44	530.	12.33	147.	38.	18.	2.19
+	ROUTED TO	RCPH44	429.	12.67	146.	38.	18.	2.19
+	HYDROGRAPH AT	H78	523.	12.33	34.	9.	4.	0.49
+	4 COMBINED AT	CPH78	1663.	13.67	633.	174.	84.	9.12
+	ROUTED TO	RCPH78	1609.	13.83	627.	174.	84.	9.12
+	HYDROGRAPH AT	H79	680.	12.17	51.	13.	6.	0.50
+	2 COMBINED AT	CPH79	1610.	13.83	669.	186.	90.	9.62
+	ROUTED TO	RCPH79	1560.	14.17	662.	186.	90.	9.62
+	HYDROGRAPH AT	H80	197.	12.67	28.	7.	3.	0.46
+	2 COMBINED AT	CPH80	1561.	14.17	688.	193.	94.	10.08
+	3 COMBINED AT	H80RIV	10739.	17.00	8458.	3380.	1671.	316.49
+	ROUTED TO	RCPH80	10728.	17.17	8452.	3380.	1670.	316.49
+	HYDROGRAPH AT	H43	242.	12.33	16.	4.	2.	0.22
+	ROUTED TO	RCPH43	146.	12.50	16.	4.	2.	0.22
+	HYDROGRAPH AT	H81	396.	12.17	21.	6.	3.	0.24
+	2 COMBINED AT	CPH81	410.	12.17	37.	9.	5.	0.46
+	ROUTED TO	RCPH81	187.	12.67	36.	9.	5.	0.46
+	HYDROGRAPH AT	H08	973.	12.33	82.	24.	12.	0.86
+	ROUTED TO	RCPH08	472.	13.00	82.	24.	12.	0.86
+	HYDROGRAPH AT	H11	290.	12.33	19.	5.	2.	0.27
+	DIVERSION TO	DVH11	0.	0.00	0.	0.	0.	0.27
+	HYDROGRAPH AT	DH11	290.	12.33	19.	5.	2.	0.27
+	ROUTED TO	RCPH11	152.	12.67	19.	5.	2.	0.27
+	HYDROGRAPH AT	DRH35	106.	12.33	4.	1.	0.	1.30
+	3 COMBINED AT	CPH35	557.	13.00	104.	30.	14.	1.28
+	ROUTED TO	RCPH35	441.	13.50	104.	30.	14.	1.28
+	HYDROGRAPH AT	H37	601.	12.33	39.	10.	5.	0.56
+	2 COMBINED AT	CPH37	606.	12.33	142.	39.	19.	3.00
+	ROUTED TO	RCPH37	351.	14.67	140.	39.	19.	3.00
+	HYDROGRAPH AT	H42	362.	12.33	31.	8.	4.	0.44
+	2 COMBINED AT	CPH42	360.	12.33	168.	47.	23.	3.45
+	ROUTED TO	RCPH42	337.	15.00	164.	47.	23.	3.45

+	HYDROGRAPH AT	H82	667.	12.17	50.	13.	6.	0.50
+	3 COMBINED AT	CPH82	674.	12.17	244.	68.	33.	4.41
+	ROUTED TO	RCPH82	369.	13.17	233.	68.	33.	4.41
+	HYDROGRAPH AT	H83	231.	13.00	38.	9.	5.	0.66
+	HYDROGRAPH AT	B62	96.	13.00	23.	6.	3.	0.33
+	4 COMBINED AT	B62RIV	10837.	17.17	8548.	3427.	1694.	321.90
+	ROUTED TO	RCPB62	10828.	17.17	8547.	3427.	1694.	321.90
+	HYDROGRAPH AT	B63	73.	12.83	15.	4.	2.	0.23
+	2 COMBINED AT	B63RIV	10866.	17.17	8576.	3440.	1700.	322.12
+	ROUTED TO	RCPB63	10795.	17.33	8539.	3428.	1694.	322.12
+	HYDROGRAPH AT	B64	98.	13.17	20.	5.	2.	0.29
+	2 COMBINED AT	B64RIV	10831.	17.33	8567.	3442.	1701.	321.98
+	ROUTED TO	RCPB64	10789.	17.50	8539.	3431.	1695.	321.98
+	HYDROGRAPH AT	H09	1336.	12.33	181.	60.	29.	1.11
+	ROUTED TO	RCPH09	1067.	12.50	181.	60.	29.	1.11
+	HYDROGRAPH AT	H10	571.	12.33	37.	9.	4.	0.53
+	2 COMBINED AT	CPH10	1407.	12.33	217.	69.	33.	1.63
+	ROUTED TO	RCPH10	1172.	12.67	217.	69.	33.	1.63
+	HYDROGRAPH AT	DRH11	0.	0.00	0.	0.	0.	0.27
+	ROUTED TO	RDH11	0.	0.00	0.	0.	0.	0.27
+	HYDROGRAPH AT	H38	524.	12.33	34.	8.	4.	0.48
+	3 COMBINED AT	CPH38	1202.	12.67	251.	78.	38.	1.01
+	ROUTED TO	RCPH38	971.	13.00	251.	77.	38.	1.01
+	HYDROGRAPH AT	H39	416.	12.33	27.	7.	3.	0.38
+	2 COMBINED AT	CPH39	970.	13.00	277.	84.	41.	1.39
+	DIVERSION TO	DVH39	682.	13.00	218.	69.	34.	1.39
+	HYDROGRAPH AT	DH39	285.	13.00	59.	15.	7.	1.39
+	ROUTED TO	RCPH39	262.	13.50	59.	15.	7.	1.39
+	HYDROGRAPH AT	H41	331.	12.33	21.	5.	3.	0.30
+	2 COMBINED AT	CPH41	336.	12.33	80.	20.	10.	0.72
+	ROUTED TO	RCPH41	240.	14.00	80.	20.	10.	0.72
+	HYDROGRAPH AT	DRH39	682.	13.00	218.	69.	34.	1.39
+	ROUTED TO	RDH39	634.	13.50	218.	69.	34.	1.39
+	HYDROGRAPH AT	H40	463.	12.33	33.	8.	4.	0.47
+	2 COMBINED AT	CPH40	634.	13.50	251.	77.	38.	1.44
	ROUTED TO							

+		RCPH40	626.	13.67	250.	77.	38.	1.44
+	HYDROGRAPH AT	H84	1057.	12.17	76.	20.	10.	0.76
+	3 COMBINED AT	CPH84	1172.	12.17	401.	116.	56.	2.91
+	ROUTED TO	RCPH84	880.	12.50	399.	116.	56.	2.91
+	HYDROGRAPH AT	H85	1277.	12.17	99.	26.	12.	0.98
+	2 COMBINED AT	CPH85	1564.	12.33	493.	141.	69.	3.89
+	ROUTED TO	RCPH85	1187.	12.83	488.	141.	69.	3.89
+	HYDROGRAPH AT	H86	1289.	12.17	112.	29.	14.	1.08
+	2 COMBINED AT	CPH86	1556.	12.33	592.	169.	83.	4.97
+	2 COMBINED AT	H86RIV	10863.	17.33	8708.	3541.	1752.	328.05
+	ROUTED TO	RCPH86	10855.	17.50	8704.	3538.	1751.	328.05
+	HYDROGRAPH AT	I03	1035.	12.33	67.	17.	8.	0.96
+	DIVERSION TO	DVI03	628.	12.33	44.	11.	5.	0.96
+	HYDROGRAPH AT	DI03	407.	12.33	23.	6.	3.	0.96
+	ROUTED TO	RCPI03	159.	12.83	22.	6.	3.	0.96
+	HYDROGRAPH AT	I04	428.	12.33	28.	7.	3.	0.39
+	2 COMBINED AT	CPI04	431.	12.33	50.	13.	6.	0.78
+	ROUTED TO	RCPI04	251.	12.83	50.	13.	6.	0.78
+	HYDROGRAPH AT	I06	548.	12.33	36.	9.	4.	0.50
+	2 COMBINED AT	CPI06	563.	12.33	85.	21.	10.	1.28
+	ROUTED TO	RCPI06	237.	13.50	82.	21.	10.	1.28
+	HYDROGRAPH AT	I08	809.	12.33	56.	14.	7.	0.79
+	2 COMBINED AT	CPI08	802.	12.33	137.	35.	17.	2.07
+	ROUTED TO	RCPI08	469.	12.67	134.	35.	17.	2.07
+	HYDROGRAPH AT	I10	524.	12.33	35.	9.	4.	0.50
+	2 COMBINED AT	CPI10	605.	12.33	168.	44.	21.	2.57
+	ROUTED TO	RCPI10	505.	12.83	164.	44.	21.	2.57
+	HYDROGRAPH AT	DRI03	628.	12.33	44.	11.	5.	0.96
+	ROUTED TO	RDI03	437.	12.50	44.	11.	5.	0.96
+	HYDROGRAPH AT	I05	235.	12.17	15.	4.	2.	0.22
+	2 COMBINED AT	CPI05	492.	12.33	59.	15.	7.	0.79
+	ROUTED TO	RCPI05	360.	12.83	59.	15.	7.	0.79
+	HYDROGRAPH AT	I07	206.	12.17	14.	3.	2.	0.19
+	2 COMBINED AT	CPI07	360.	12.83	73.	18.	9.	0.99
+	ROUTED TO	RCPI07	297.	13.33	72.	18.	9.	0.99
+	HYDROGRAPH AT	I09	346.	12.33	22.	6.	3.	0.31

+	2 COMBINED AT	CPI09	363.	12.33	94.	24.	11.	1.30
+	ROUTED TO	RCPI09	273.	13.67	94.	24.	11.	1.30
+	HYDROGRAPH AT	I11	317.	12.33	20.	5.	2.	0.29
+	2 COMBINED AT	CPI11	355.	12.33	113.	29.	14.	1.59
+	ROUTED TO	RCPI11	259.	14.00	111.	29.	14.	1.59
+	HYDROGRAPH AT	I12	705.	12.17	51.	13.	6.	0.51
+	3 COMBINED AT	CPI12	744.	12.83	319.	85.	41.	4.66
+	ROUTED TO	RCPI12	661.	13.33	312.	85.	41.	4.66
+	HYDROGRAPH AT	I13	718.	12.17	54.	14.	7.	0.52
+	2 COMBINED AT	CPI13	776.	12.33	359.	99.	48.	5.18
+	ROUTED TO	RCPI13	640.	13.50	356.	99.	48.	5.18
+	HYDROGRAPH AT	I14	460.	12.17	27.	7.	3.	0.24
+	2 COMBINED AT	CPI14	796.	12.17	380.	105.	51.	5.42
+	HYDROGRAPH AT	A12	785.	12.50	86.	21.	10.	1.06
+	ROUTED TO	RCPA12	347.	14.67	86.	21.	10.	1.06
+	HYDROGRAPH AT	A41	524.	12.67	88.	24.	12.	0.92
+	2 COMBINED AT	CPA41	521.	12.67	173.	45.	22.	1.97
+	3 COMBINED AT	A41RIV	10908.	17.50	8832.	3625.	1795.	335.51
+	ROUTED TO	RCPA41	10881.	17.83	8822.	3621.	1795.	335.51
+	HYDROGRAPH AT	I15B	391.	12.33	35.	10.	5.	0.33
+	ROUTED TO	RCI15B	252.	12.50	35.	10.	5.	0.33
+	HYDROGRAPH AT	I15A	450.	12.33	30.	7.	4.	0.40
+	2 COMBINED AT	CPI15A	619.	12.33	64.	18.	8.	0.73
+	ROUTED TO	RCI15A	214.	13.00	63.	18.	8.	0.73
+	HYDROGRAPH AT	I16	537.	12.33	40.	11.	5.	0.49
+	ROUTED TO	RCPI16	319.	12.67	40.	11.	5.	0.49
+	HYDROGRAPH AT	I18	720.	12.33	46.	12.	6.	0.66
+	HYDROGRAPH AT	I17C	266.	12.17	28.	9.	4.	0.16
+	ROUTED TO	RCI17C	210.	12.33	28.	9.	4.	0.16
+	HYDROGRAPH AT	I17B	142.	12.17	8.	2.	1.	0.09
+	ROUTED TO	RCI17B	124.	12.17	8.	2.	1.	0.09
+	HYDROGRAPH AT	I17A	167.	12.17	9.	2.	1.	0.11
+	3 COMBINED AT	CPI17A	414.	12.17	44.	13.	6.	0.36
+	ROUTED TO	RCI17A	236.	12.67	44.	13.	6.	0.36
+	4 COMBINED AT	CPI18	1040.	12.33	192.	53.	26.	2.24

+	ROUTED TO	RCPI18	775.	12.83	191.	53.	26.	2.24
+	HYDROGRAPH AT	I19	385.	12.33	25.	6.	3.	0.35
+	2 COMBINED AT	CPI19	798.	12.67	215.	59.	28.	2.53
+	ROUTED TO	RCPI19	672.	13.50	213.	59.	28.	2.53
+	HYDROGRAPH AT	I20	608.	12.33	44.	11.	5.	0.62
+	2 COMBINED AT	CPI20	670.	13.50	253.	69.	34.	3.15
+	ROUTED TO	RCPI20	636.	13.83	249.	69.	34.	3.15
+	HYDROGRAPH AT	I21	586.	12.17	45.	12.	6.	0.47
+	2 COMBINED AT	CPI21	637.	13.83	290.	81.	39.	3.62
+	ROUTED TO	RCPI21	553.	14.50	281.	81.	39.	3.62
+	HYDROGRAPH AT	I22	630.	12.17	41.	11.	5.	0.38
+	2 COMBINED AT	CPI22	628.	12.17	311.	91.	44.	4.00
+	HYDROGRAPH AT	A40	702.	12.33	57.	15.	7.	0.50
+	ROUTED TO	RCPA40	373.	13.00	57.	15.	7.	0.50
+	HYDROGRAPH AT	A42	590.	12.50	82.	21.	10.	0.85
+	2 COMBINED AT	CPA42	607.	13.00	138.	35.	17.	1.35
+	3 COMBINED AT	A42RIV	10943.	17.67	8948.	3696.	1834.	340.86
+	ROUTED TO	RCPA42	10925.	18.00	8934.	3694.	1833.	340.86
+	HYDROGRAPH AT	A13	568.	12.50	57.	15.	7.	0.58
+	ROUTED TO	RCPA13	420.	13.00	57.	15.	7.	0.58
+	HYDROGRAPH AT	A39	629.	12.33	56.	15.	7.	0.50
+	2 COMBINED AT	CPA39	629.	12.33	113.	29.	14.	1.08
+	ROUTED TO	RCPA39	467.	12.67	112.	29.	14.	1.08
+	HYDROGRAPH AT	A43	640.	12.33	57.	15.	7.	0.50
+	2 COMBINED AT	CPA43	752.	12.33	168.	44.	21.	1.58
+	ROUTED TO	RCPA43	619.	12.67	167.	44.	21.	1.58
+	HYDROGRAPH AT	A44	513.	12.17	41.	11.	5.	0.37
+	2 COMBINED AT	CPA44	646.	12.67	206.	54.	26.	1.95
+	2 COMBINED AT	A44RIV	10967.	18.00	8978.	3737.	1856.	342.81
+	ROUTED TO	RCPA44	10914.	18.17	8941.	3724.	1849.	342.81
+	HYDROGRAPH AT	I24	231.	12.33	22.	7.	3.	0.18
+	ROUTED TO	RCPI24	159.	12.67	22.	7.	3.	0.18
+	HYDROGRAPH AT	I26B	94.	12.17	6.	2.	1.	0.06
+	ROUTED TO	RCI26B	24.	13.33	6.	2.	1.	0.06
+	HYDROGRAPH AT	I26A	613.	12.33	44.	11.	5.	0.58
	3 COMBINED AT							

+		CPI26A	663.	12.33	71.	19.	9.	0.81
+	ROUTED TO	RCI26A	466.	12.83	71.	19.	9.	0.81
+	HYDROGRAPH AT	I28	475.	12.33	31.	8.	4.	0.44
+	2 COMBINED AT	CPI28	523.	12.33	102.	27.	13.	1.26
+	ROUTED TO	RCPI28	424.	13.00	101.	27.	13.	1.26
+	HYDROGRAPH AT	I30	466.	12.33	30.	8.	4.	0.42
+	2 COMBINED AT	CPI30	576.	12.33	131.	34.	16.	1.68
+	ROUTED TO	RCPI30	429.	12.83	130.	34.	16.	1.68
+	HYDROGRAPH AT	I32	709.	12.17	51.	13.	6.	0.51
+	2 COMBINED AT	CPI32	710.	12.17	178.	47.	23.	2.18
+	ROUTED TO	RCPI32	491.	12.67	175.	47.	23.	2.18
+	HYDROGRAPH AT	I34	362.	12.67	44.	11.	6.	0.51
+	2 COMBINED AT	CPI34	848.	12.67	217.	58.	28.	2.69
+	ROUTED TO	RCPI34	738.	12.83	215.	58.	28.	2.69
+	HYDROGRAPH AT	I36	295.	12.17	18.	5.	2.	0.19
+	2 COMBINED AT	CPI36	738.	12.83	231.	63.	30.	2.89
+	2 COMBINED AT	I36RIV	10940.	18.17	8980.	3763.	1870.	345.69
+	ROUTED TO	RCPI36	10909.	18.33	8961.	3757.	1867.	345.69
+	HYDROGRAPH AT	A01	3687.	12.83	498.	124.	60.	9.62
+	DIVERSION TO	DVA01A	1824.	12.83	249.	62.	30.	9.62
+	HYDROGRAPH AT	DA01A	1863.	12.83	249.	62.	30.	9.62
+	DIVERSION TO	DVA01B	851.	12.83	115.	29.	14.	9.62
+	HYDROGRAPH AT	DA01B	1012.	12.83	134.	34.	16.	9.62
+	ROUTED TO	RCPA01	532.	14.17	130.	34.	16.	9.62
+	HYDROGRAPH AT	A11	843.	12.67	96.	24.	12.	1.80
+	2 COMBINED AT	CPA11	834.	12.67	222.	58.	28.	4.50
+	DIVERSION TO	DVA11	417.	12.67	111.	29.	14.	4.50
+	HYDROGRAPH AT	DA11	417.	12.67	111.	29.	14.	4.50
+	ROUTED TO	RCPA11	200.	15.00	104.	29.	14.	4.50
+	HYDROGRAPH AT	A14	712.	12.50	76.	19.	9.	0.86
+	2 COMBINED AT	CPA14	705.	12.50	174.	48.	23.	3.10
+	ROUTED TO	RCPA14	453.	13.33	164.	48.	23.	3.10
+	HYDROGRAPH AT	A38	596.	12.17	53.	14.	7.	0.48
+	ROUTED TO	RCPA38	320.	13.00	52.	14.	7.	0.48
+	HYDROGRAPH AT	A37	991.	12.50	121.	31.	15.	1.35
+	3 COMBINED AT	CPA37	1122.	12.67	325.	92.	44.	4.93

+	ROUTED TO	RCPA37	937.	13.17	314.	92.	44.	4.93
+	HYDROGRAPH AT	A45	648.	12.33	53.	14.	7.	0.53
+	2 COMBINED AT	CPA45	939.	13.17	354.	105.	51.	5.47
+	HYDROGRAPH AT	I23	545.	12.17	73.	24.	12.	0.42
+	ROUTED TO	RCPI23	423.	12.50	73.	24.	12.	0.42
+	HYDROGRAPH AT	I25	382.	12.17	25.	6.	3.	0.31
+	2 COMBINED AT	CPI25	680.	12.33	98.	31.	15.	0.73
+	ROUTED TO	RCPI25	526.	12.67	98.	30.	15.	0.73
+	HYDROGRAPH AT	I27	457.	12.33	30.	8.	4.	0.40
+	2 COMBINED AT	CPI27	694.	12.33	127.	38.	18.	1.13
+	ROUTED TO	RCPI27	576.	12.67	127.	38.	18.	1.13
+	HYDROGRAPH AT	I29	402.	12.33	26.	7.	3.	0.37
+	2 COMBINED AT	CPI29	648.	12.33	153.	44.	21.	1.51
+	ROUTED TO	RCPI29	560.	12.83	152.	44.	21.	1.51
+	HYDROGRAPH AT	I31	381.	12.33	25.	6.	3.	0.36
+	2 COMBINED AT	CPI31	613.	12.33	177.	50.	24.	1.87
+	ROUTED TO	RCPI31	544.	13.17	175.	50.	24.	1.87
+	HYDROGRAPH AT	I33	703.	12.17	51.	13.	6.	0.50
+	2 COMBINED AT	CPI33	715.	12.17	224.	63.	31.	2.37
+	ROUTED TO	RCPI33	517.	13.67	221.	63.	31.	2.37
+	HYDROGRAPH AT	I35	609.	12.33	54.	14.	7.	0.51
+	2 COMBINED AT	CPI35	651.	12.33	272.	77.	37.	2.88
+	ROUTED TO	RCPI35	532.	12.67	269.	77.	37.	2.88
+	HYDROGRAPH AT	I37	656.	12.17	47.	12.	6.	0.41
+	2 COMBINED AT	CPI37	680.	12.17	312.	88.	43.	3.29
+	3 COMBINED AT	I37RIV	10951.	18.33	9041.	3859.	1921.	363.37
+	ROUTED TO	RCPI37	10914.	18.50	9017.	3850.	1917.	363.37
+	HYDROGRAPH AT	A36	408.	12.50	39.	10.	5.	0.44
+	ROUTED TO	RCPA36	245.	13.17	39.	10.	5.	0.44
+	HYDROGRAPH AT	A46	241.	12.33	20.	5.	3.	0.20
+	2 COMBINED AT	CPA46	248.	13.17	59.	15.	7.	0.63
+	2 COMBINED AT	A46RIV	10976.	18.50	9067.	3879.	1932.	364.00
+	ROUTED TO	RCPA46	10891.	18.67	9008.	3856.	1921.	364.00
+	HYDROGRAPH AT	I38	204.	12.17	17.	6.	3.	0.12
+	ROUTED TO	RCPI38	111.	12.50	17.	6.	3.	0.12

+	HYDROGRAPH AT	I39	243.	12.17	16.	4.	2.	0.22
+	2 COMBINED AT	CPI39	313.	12.33	33.	10.	5.	0.47
+	ROUTED TO	RCPI39	190.	12.67	33.	10.	5.	0.47
+	HYDROGRAPH AT	I40	460.	12.33	30.	8.	4.	0.41
+	2 COMBINED AT	CPI40	511.	12.33	63.	17.	8.	0.87
+	ROUTED TO	RCPI40	320.	12.67	63.	17.	8.	0.87
+	HYDROGRAPH AT	I41	519.	12.33	34.	8.	4.	0.48
+	2 COMBINED AT	CPI41	589.	12.33	96.	25.	12.	1.35
+	ROUTED TO	RCPI41	396.	12.83	96.	25.	12.	1.35
+	HYDROGRAPH AT	I42	467.	12.33	33.	9.	4.	0.42
+	2 COMBINED AT	CPI42	524.	12.33	128.	34.	16.	1.77
+	ROUTED TO	RCPI42	408.	13.00	126.	34.	16.	1.77
+	HYDROGRAPH AT	I43	491.	12.33	35.	9.	4.	0.43
+	2 COMBINED AT	CPI43	515.	12.33	159.	42.	20.	2.20
+	ROUTED TO	RCPI43	402.	12.67	157.	42.	20.	2.20
+	HYDROGRAPH AT	I44B	334.	12.17	30.	10.	5.	0.19
+	ROUTED TO	RCI44B	152.	12.33	30.	10.	5.	0.19
+	HYDROGRAPH AT	I44A	710.	12.33	51.	14.	7.	0.65
+	2 COMBINED AT	CPI44A	859.	12.33	80.	24.	11.	0.84
+	ROUTED TO	RCI44A	520.	12.50	80.	24.	11.	0.84
+	HYDROGRAPH AT	I45	406.	12.33	27.	7.	3.	0.35
+	2 COMBINED AT	CPI45	718.	12.33	107.	30.	15.	1.06
+	ROUTED TO	RCPI45	558.	12.83	107.	30.	15.	1.06
+	HYDROGRAPH AT	I46	504.	12.33	33.	8.	4.	0.46
+	2 COMBINED AT	CPI46	611.	12.33	139.	38.	19.	1.52
+	ROUTED TO	RCPI46	536.	13.00	138.	38.	19.	1.52
+	HYDROGRAPH AT	I47	387.	12.33	28.	8.	4.	0.35
+	2 COMBINED AT	CPI47	539.	13.00	165.	46.	22.	1.87
+	ROUTED TO	RCPI47	506.	13.33	163.	46.	22.	1.87
+	HYDROGRAPH AT	I48	375.	12.33	25.	6.	3.	0.34
+	2 COMBINED AT	CPI48	506.	13.33	187.	52.	25.	2.21
+	ROUTED TO	RCPI48	491.	13.50	185.	52.	25.	2.21
+	HYDROGRAPH AT	I49	657.	12.17	40.	10.	5.	0.38
+	3 COMBINED AT	CPI49	856.	13.50	377.	104.	50.	4.79
+	ROUTED TO	RCPI49	831.	13.67	372.	104.	50.	4.79
	HYDROGRAPH AT							

+		I61	417.	12.17	25.	7.	3.	0.25
+	ROUTED TO	RCPI61	190.	12.50	25.	7.	3.	0.25
+	HYDROGRAPH AT	I50	953.	12.17	63.	16.	8.	0.60
+	3 COMBINED AT	CPI50	1102.	12.17	454.	126.	61.	5.64
+	2 COMBINED AT	I50RIV	10957.	18.67	9096.	3945.	1967.	369.64
+	ROUTED TO	RCPI50	10887.	18.83	9052.	3927.	1959.	369.64
+	HYDROGRAPH AT	I62	548.	12.33	49.	14.	7.	0.42
+	2 COMBINED AT	I62RIV	10951.	18.83	9104.	3955.	1974.	370.07
+	ROUTED TO	RCPI62	10851.	19.17	9041.	3931.	1962.	370.07
+	HYDROGRAPH AT	DRA11	417.	12.67	111.	29.	14.	4.50
+	ROUTED TO	RDA11	180.	15.83	104.	29.	14.	4.50
+	HYDROGRAPH AT	A15	625.	12.67	85.	21.	10.	0.94
+	2 COMBINED AT	CPA15	619.	12.67	175.	50.	24.	3.19
+	HYDROGRAPH AT	A16	321.	12.50	32.	8.	4.	0.33
+	2 COMBINED AT	CPA16	818.	12.67	206.	58.	28.	3.52
+	ROUTED TO	RCPA16	626.	13.17	194.	58.	28.	3.52
+	HYDROGRAPH AT	DRA01A	1824.	12.83	249.	62.	30.	9.62
+	ROUTED TO	RDA01A	1575.	13.17	249.	62.	30.	9.62
+	HYDROGRAPH AT	A03	462.	12.50	45.	11.	5.	1.06
+	2 COMBINED AT	CPA03	1617.	13.17	294.	74.	35.	5.78
+	ROUTED TO	RCPA03	1492.	13.33	294.	74.	35.	5.78
+	HYDROGRAPH AT	A65	478.	12.33	33.	8.	4.	0.55
+	2 COMBINED AT	CPA65	1492.	13.33	326.	82.	39.	6.32
+	ROUTED TO	RCPA65	1201.	13.83	322.	82.	39.	6.32
+	HYDROGRAPH AT	A64	251.	12.33	17.	4.	2.	0.23
+	2 COMBINED AT	CPA64	1201.	13.83	338.	86.	41.	6.55
+	DIVERSION TO	DVA64	926.	13.83	278.	71.	34.	6.55
+	HYDROGRAPH AT	DA64	275.	13.83	59.	15.	7.	6.55
+	ROUTED TO	RCPA64	225.	14.83	59.	15.	7.	6.55
+	HYDROGRAPH AT	DRA01B	851.	12.83	115.	29.	14.	9.62
+	ROUTED TO	RDA01B	291.	14.83	108.	29.	14.	9.62
+	HYDROGRAPH AT	A10	621.	12.67	80.	20.	10.	0.93
+	3 COMBINED AT	CPA10	613.	12.67	238.	64.	31.	4.65
+	DIVERSION TO	DVA10	330.	12.67	131.	35.	17.	4.65
+	HYDROGRAPH AT	DA10	283.	12.67	106.	28.	14.	4.65
+	ROUTED TO	RCPA10	196.	16.00	101.	28.	14.	4.65

+	HYDROGRAPH AT	A34	394.	12.33	36.	9.	4.	0.38
+	2 COMBINED AT	CPA34	388.	12.33	127.	37.	18.	2.57
+	ROUTED TO	RCPA34	260.	12.83	123.	37.	18.	2.57
+	HYDROGRAPH AT	A35	778.	12.50	74.	18.	9.	0.85
+	3 COMBINED AT	CPA35	918.	12.50	373.	112.	54.	6.94
+	ROUTED TO	RCPA35	746.	13.50	353.	112.	54.	6.94
+	HYDROGRAPH AT	A47	840.	12.33	79.	20.	10.	0.79
+	2 COMBINED AT	CPA47	829.	12.33	398.	132.	64.	7.73
+	ROUTED TO	RCPA47	627.	14.67	372.	131.	64.	7.73
+	HYDROGRAPH AT	A48	1194.	12.33	119.	32.	15.	1.06
+	ROUTED TO	RCPA48	910.	12.67	119.	31.	15.	1.06
+	HYDROGRAPH AT	A49	701.	12.50	72.	19.	9.	0.75
+	3 COMBINED AT	CPA49	1457.	12.50	500.	179.	87.	9.54
+	2 COMBINED AT	A49RIV	10919.	19.17	9145.	4029.	2012.	377.94
+	ROUTED TO	RCPA49	10891.	19.33	9127.	4023.	2011.	377.94
+	HYDROGRAPH AT	A04	464.	12.33	30.	7.	4.	0.74
+	DIVERSION TO	DVA04	254.	12.33	17.	4.	2.	0.74
+	HYDROGRAPH AT	DA04	211.	12.33	13.	3.	2.	0.74
+	ROUTED TO	RCPA04	136.	12.83	13.	3.	2.	0.74
+	HYDROGRAPH AT	A07	265.	12.50	22.	6.	3.	0.52
+	2 COMBINED AT	CPA07	301.	12.50	35.	9.	4.	0.86
+	DIVERSION TO	DVA07	197.	12.50	24.	6.	3.	0.86
+	HYDROGRAPH AT	DA07	104.	12.50	11.	3.	1.	0.86
+	ROUTED TO	RCPA07	40.	14.67	10.	3.	1.	0.86
+	HYDROGRAPH AT	A09	378.	12.50	35.	9.	4.	0.78
+	DIVERSION TO	DVA09	69.	12.50	6.	1.	1.	0.78
+	HYDROGRAPH AT	DA09	309.	12.50	29.	7.	3.	0.78
+	ROUTED TO	RCPA09	152.	13.00	29.	7.	3.	0.78
+	HYDROGRAPH AT	A08	781.	12.83	108.	27.	13.	2.13
+	2 COMBINED AT	CPA08	923.	12.83	136.	34.	16.	2.77
+	DIVERSION TO	DVA08	586.	12.83	90.	23.	11.	2.77
+	HYDROGRAPH AT	DA08	337.	12.83	45.	11.	5.	2.77
+	ROUTED TO	RCPA08	287.	13.33	45.	11.	5.	2.77
+	HYDROGRAPH AT	A21	731.	12.67	86.	21.	10.	1.04
+	3 COMBINED AT	CPA21	728.	12.67	140.	35.	17.	2.52

+	DIVERSION TO	DVA21	322.	12.67	62.	16.	7.	2.52
+	HYDROGRAPH AT	DA21	406.	12.67	78.	20.	10.	2.52
+	ROUTED TO	RCPA21	303.	13.17	78.	20.	10.	2.52
+	HYDROGRAPH AT	A20	319.	12.50	30.	7.	4.	0.34
+	2 COMBINED AT	CPA20	321.	12.50	107.	27.	13.	1.75
+	DIVERSION TO	DVA20	32.	12.50	9.	2.	1.	1.75
+	HYDROGRAPH AT	DA20	289.	12.50	98.	25.	12.	1.75
+	ROUTED TO	RCPA20	179.	16.83	86.	25.	12.	1.75
+	HYDROGRAPH AT	A51	742.	13.00	126.	32.	15.	1.49
+	2 COMBINED AT	CPA51A	738.	13.00	177.	56.	27.	3.06
+	HYDROGRAPH AT	DRA09	69.	12.50	6.	1.	1.	0.78
+	ROUTED TO	RDA09	42.	14.33	6.	1.	1.	0.78
+	HYDROGRAPH AT	DRA64	926.	13.83	278.	71.	34.	6.55
+	ROUTED TO	RDA64	774.	15.00	271.	71.	34.	6.55
+	HYDROGRAPH AT	A18	571.	12.50	65.	16.	8.	0.69
+	3 COMBINED AT	CPA18	784.	15.00	329.	88.	43.	5.88
+	DIVERSION TO	DVA18	387.	15.00	212.	59.	28.	5.88
+	HYDROGRAPH AT	DA18	397.	15.00	117.	29.	14.	5.88
+	ROUTED TO	RCPA18	397.	15.17	117.	29.	14.	5.88
+	HYDROGRAPH AT	DRA08	586.	12.83	90.	23.	11.	2.77
+	ROUTED TO	RDA08	275.	14.17	88.	23.	11.	2.77
+	HYDROGRAPH AT	A19	438.	12.50	43.	11.	5.	0.46
+	2 COMBINED AT	CPA19A	433.	12.50	130.	33.	16.	2.21
+	2 COMBINED AT	CPA19	551.	15.00	245.	62.	30.	5.39
+	ROUTED TO	RCPA19	519.	15.50	241.	62.	30.	5.39
+	HYDROGRAPH AT	A63	583.	12.50	55.	14.	7.	0.61
+	2 COMBINED AT	CPA63A	597.	12.50	291.	76.	36.	5.99
+	HYDROGRAPH AT	DRA10	330.	12.67	131.	35.	17.	4.65
+	ROUTED TO	RDA10	235.	15.67	127.	35.	17.	4.65
+	HYDROGRAPH AT	A17	447.	12.67	54.	13.	6.	0.57
+	2 COMBINED AT	CPA17	455.	12.67	175.	49.	23.	3.03
+	HYDROGRAPH AT	DRA18	387.	15.00	212.	59.	28.	5.88
+	ROUTED TO	RDA18	361.	15.67	205.	59.	28.	5.88
+	HYDROGRAPH AT	A33	291.	12.33	27.	7.	3.	0.28
+	2 COMBINED AT	CPA33A	363.	15.67	218.	66.	32.	2.99
	2 COMBINED AT							

+		CPA33	682.	12.50	390.	114.	55.	6.02
+	ROUTED TO	RCPA33	580.	16.00	384.	114.	55.	6.02
+	2 COMBINED AT	CPA63	995.	15.83	649.	185.	89.	12.02
+	ROUTED TO	RCPA63	946.	16.50	627.	185.	89.	12.02
+	HYDROGRAPH AT	A50	321.	13.67	97.	28.	14.	1.03
+	2 COMBINED AT	CPA50	1115.	13.67	700.	209.	101.	13.01
+	ROUTED TO	RCPA50	1092.	14.00	695.	209.	101.	13.01
+	2 COMBINED AT	CPA51	1120.	14.00	787.	256.	124.	16.07
+	2 COMBINED AT	A51RIV	11144.	19.33	9399.	4169.	2083.	388.64
+	ROUTED TO	RCPA51	11147.	19.33	9399.	4169.	2083.	388.64
+	HYDROGRAPH AT	A05	1046.	12.50	99.	25.	12.	2.14
+	ROUTED TO	RCPA05	447.	13.83	98.	25.	12.	2.14
+	HYDROGRAPH AT	A23	131.	12.50	12.	3.	1.	0.23
+	ROUTED TO	RCPA23	51.	13.83	12.	3.	1.	0.23
+	HYDROGRAPH AT	A25	135.	12.50	11.	3.	1.	0.22
+	ROUTED TO	RCPA25	76.	12.83	11.	3.	1.	0.22
+	HYDROGRAPH AT	A26	369.	12.50	33.	8.	4.	0.50
+	4 COMBINED AT	CPA26	502.	13.83	150.	38.	18.	3.09
+	ROUTED TO	RCPA26	409.	14.50	147.	38.	18.	3.09
+	HYDROGRAPH AT	A27	629.	12.67	70.	18.	8.	1.11
+	2 COMBINED AT	CPA27A	631.	12.67	213.	55.	27.	4.19
+	HYDROGRAPH AT	A28	426.	12.33	33.	8.	4.	0.55
+	ROUTED TO	RCPA28	304.	12.67	33.	8.	4.	0.55
+	2 COMBINED AT	CPA27	928.	12.67	245.	63.	31.	4.74
+	ROUTED TO	RCPA27	628.	13.00	240.	63.	31.	4.74
+	HYDROGRAPH AT	A29	532.	12.50	58.	15.	7.	1.19
+	2 COMBINED AT	CPA29	848.	12.67	294.	78.	37.	5.93
+	HYDROGRAPH AT	DRA04	254.	12.33	17.	4.	2.	0.74
+	ROUTED TO	RDA04	43.	14.67	15.	4.	2.	0.74
+	HYDROGRAPH AT	A06	434.	12.67	48.	12.	6.	1.11
+	2 COMBINED AT	CPA06	432.	12.67	62.	16.	8.	1.52
+	ROUTED TO	RCPA06	210.	13.50	57.	16.	8.	1.52
+	HYDROGRAPH AT	DRA07	197.	12.50	24.	6.	3.	0.86
+	ROUTED TO	RDA07	58.	15.83	22.	6.	3.	0.86
+	HYDROGRAPH AT	A22	273.	12.83	38.	9.	5.	0.58
+	2 COMBINED AT	CPA22	272.	12.83	55.	15.	7.	0.99

+	ROUTED TO	RCPA22	255.	12.83	54.	15.	7.	0.99
+	HYDROGRAPH AT	A24	588.	12.67	69.	17.	8.	1.36
+	3 COMBINED AT	CPA24	781.	12.67	175.	48.	23.	3.86
+	ROUTED TO	RCPA24	522.	13.50	169.	48.	23.	3.86
+	HYDROGRAPH AT	A30	380.	12.67	46.	12.	6.	0.68
+	2 COMBINED AT	CPA30A	547.	13.50	209.	59.	29.	4.54
+	2 COMBINED AT	CPA30	1217.	12.67	496.	135.	65.	10.47
+	ROUTED TO	RCPA30	1113.	13.17	491.	135.	65.	10.47
+	HYDROGRAPH AT	A52	244.	12.33	18.	5.	2.	0.22
+	2 COMBINED AT	CPA52A	1113.	13.17	503.	139.	67.	10.69
+	HYDROGRAPH AT	A31	407.	12.67	50.	13.	6.	0.54
+	ROUTED TO	RCPA31	251.	13.50	50.	13.	6.	0.54
+	HYDROGRAPH AT	DRA21	322.	12.67	62.	16.	7.	2.52
+	ROUTED TO	RDA21	107.	17.33	57.	16.	7.	2.52
+	HYDROGRAPH AT	DRA20	32.	12.50	9.	2.	1.	1.75
+	ROUTED TO	RDA20	21.	15.33	9.	2.	1.	1.75
+	HYDROGRAPH AT	A32	850.	12.67	112.	28.	13.	1.21
+	3 COMBINED AT	CPA32A	845.	12.67	162.	46.	22.	2.53
+	2 COMBINED AT	CPA32	844.	12.67	211.	58.	28.	3.07
+	ROUTED TO	RCPA32	697.	12.83	206.	58.	28.	3.07
+	2 COMBINED AT	CPA52	1676.	13.00	682.	190.	91.	13.76
+	ROUTED TO	RCPA52	1548.	13.33	680.	190.	91.	13.76
+	HYDROGRAPH AT	A53	761.	12.50	84.	21.	10.	1.75
+	HYDROGRAPH AT	A54	403.	12.33	47.	14.	7.	0.51
+	2 COMBINED AT	CPA54	1152.	12.50	131.	35.	17.	2.25
+	ROUTED TO	RCPA54	829.	12.83	131.	35.	17.	2.25
+	HYDROGRAPH AT	A55	460.	12.50	41.	10.	5.	0.61
+	2 COMBINED AT	CPA55A	889.	12.83	171.	45.	22.	2.87
+	2 COMBINED AT	CPA55	2051.	13.17	813.	226.	110.	16.62
+	ROUTED TO	RCPA55	1794.	14.00	780.	226.	110.	16.62
+	HYDROGRAPH AT	A56	1367.	12.50	183.	52.	25.	1.84
+	2 COMBINED AT	CPA56	1795.	14.00	884.	269.	132.	18.46
+	2 COMBINED AT	A56RIV	11226.	19.33	9533.	4311.	2156.	404.96
+	ROUTED TO	RCPA56	11221.	19.50	9522.	4305.	2153.	404.96
+	HYDROGRAPH AT	I51	153.	12.33	10.	3.	1.	0.14

+	ROUTED TO	RCPI51	88.	12.67	10.	3.	1.	0.14
+	HYDROGRAPH AT	I53	544.	12.33	35.	9.	4.	0.51
+	2 COMBINED AT	CPI53	573.	12.33	45.	11.	5.	0.66
+	ROUTED TO	RCPI53	321.	12.67	45.	11.	5.	0.66
+	HYDROGRAPH AT	I55	271.	12.33	17.	4.	2.	0.25
+	2 COMBINED AT	CPI55	333.	12.33	62.	16.	7.	0.91
+	ROUTED TO	RCPI55	308.	12.83	62.	16.	7.	0.91
+	HYDROGRAPH AT	I57	272.	12.17	24.	7.	3.	0.19
+	2 COMBINED AT	CPI57	317.	12.83	85.	22.	11.	1.10
+	ROUTED TO	RCPI57	303.	13.00	85.	22.	11.	1.10
+	HYDROGRAPH AT	I72	277.	12.17	21.	6.	3.	0.21
+	2 COMBINED AT	CPI72	395.	12.33	105.	28.	14.	1.30
+	ROUTED TO	RCPI72	301.	13.00	104.	28.	14.	1.30
+	HYDROGRAPH AT	I60C	289.	12.33	20.	5.	2.	0.27
+	2 COMBINED AT	CPI60C	321.	12.33	124.	33.	16.	1.57
+	HYDROGRAPH AT	I59	171.	12.17	13.	4.	2.	0.10
+	ROUTED TO	RCPI59	54.	13.50	13.	4.	2.	0.10
+	HYDROGRAPH AT	I60B	200.	12.17	15.	5.	2.	0.10
+	ROUTED TO	RCI60B	41.	13.17	15.	5.	2.	0.10
+	HYDROGRAPH AT	I60A	1084.	12.33	129.	39.	19.	0.98
+	4 COMBINED AT	CPI60B	1405.	12.33	275.	80.	39.	2.75
+	HYDROGRAPH AT	I52	388.	12.17	22.	6.	3.	0.32
+	ROUTED TO	RCPI52	197.	12.50	22.	6.	3.	0.32
+	HYDROGRAPH AT	I54	422.	12.17	22.	5.	3.	0.35
+	2 COMBINED AT	CPI54	443.	12.17	44.	11.	5.	0.61
+	ROUTED TO	RCPI54	259.	12.67	44.	11.	5.	0.61
+	HYDROGRAPH AT	I56	461.	12.33	30.	7.	4.	0.43
+	2 COMBINED AT	CPI56	545.	12.33	73.	18.	9.	1.04
+	ROUTED TO	RCPI56	222.	14.00	70.	18.	9.	1.04
+	HYDROGRAPH AT	I58B	531.	12.33	54.	15.	7.	0.58
+	2 COMBINED AT	CPI58B	526.	12.33	118.	33.	16.	1.63
+	ROUTED TO	RCI58B	465.	12.67	117.	33.	16.	1.63
+	HYDROGRAPH AT	I58A	200.	12.17	18.	5.	3.	0.13
+	2 COMBINED AT	CPI58A	475.	12.67	133.	38.	18.	1.79
+	ROUTED TO	RCI58A	458.	13.00	133.	38.	18.	1.79
	HYDROGRAPH AT							

+		I64	420.	12.17	41.	12.	6.	0.27
+	2 COMBINED AT	CPI64	580.	12.33	171.	50.	24.	2.06
+	ROUTED TO	RCPI64	419.	13.17	169.	50.	24.	2.06
+	HYDROGRAPH AT	I65	394.	12.33	31.	8.	4.	0.31
+	2 COMBINED AT	CPI65	605.	12.33	198.	58.	28.	2.79
+	2 COMBINED AT	CPI60A	2001.	12.33	469.	137.	67.	5.12
+	ROUTED TO	RCI60A	1459.	12.67	467.	137.	67.	5.12
+	HYDROGRAPH AT	I66	1109.	12.33	121.	36.	17.	0.91
+	2 COMBINED AT	CPI66	2290.	12.50	581.	172.	84.	6.03
+	ROUTED TO	RCPI66	1327.	13.33	576.	172.	84.	6.03
+	HYDROGRAPH AT	I67	1172.	12.33	107.	30.	15.	0.97
+	HYDROGRAPH AT	I68	375.	12.33	32.	9.	4.	0.29
+	HYDROGRAPH AT	I69	231.	12.17	19.	5.	3.	0.17
+	4 COMBINED AT	CPI67	1888.	12.33	721.	216.	105.	7.46
+	ROUTED TO	RCPI67	1300.	13.83	711.	215.	105.	7.46
+	HYDROGRAPH AT	I70	454.	12.33	39.	11.	5.	0.37
+	HYDROGRAPH AT	I71	533.	12.33	45.	13.	6.	0.42
+	3 COMBINED AT	CPI70	1323.	12.33	783.	238.	116.	8.25
+	ROUTED TO	RCPI71	1301.	13.83	782.	238.	116.	8.25
+	HYDROGRAPH AT	I63	350.	12.33	28.	7.	4.	0.29
+	2 COMBINED AT	CPI63	1448.	12.50	807.	245.	120.	8.54
+	2 COMBINED AT	I63RIV	11304.	19.50	9662.	4462.	2236.	413.50
+	ROUTED TO	RCPI63	11248.	19.67	9622.	4453.	2232.	413.50
+	HYDROGRAPH AT	A57	1186.	12.67	191.	60.	29.	1.47
+	2 COMBINED AT	A57RIV	11331.	19.67	9694.	4512.	2267.	414.97
+	ROUTED TO	RCPA57	11181.	20.00	9620.	4476.	2249.	414.97
+	HYDROGRAPH AT	A58	1503.	12.67	237.	72.	35.	2.13
+	HYDROGRAPH AT	A59	1229.	12.50	151.	46.	22.	1.25
+	2 COMBINED AT	CPA59	2454.	12.50	387.	117.	57.	3.39
+	ROUTED TO	RCPA59	2006.	12.83	386.	117.	57.	3.39
+	HYDROGRAPH AT	A60	1561.	12.50	179.	52.	25.	1.67
+	2 COMBINED AT	CPA60	2712.	12.67	561.	168.	81.	5.05
+	2 COMBINED AT	A60RIV	11233.	20.00	9670.	4579.	2313.	420.03
+	ROUTED TO	RCPA60	11214.	20.17	9628.	4560.	2304.	420.03
+	HYDROGRAPH AT	A61	1451.	12.67	191.	53.	25.	1.96
+	HYDROGRAPH AT	A62	287.	12.33	25.	7.	3.	0.29

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+          3 COMBINED AT      A62RIV     11286.   20.17       9689.       4619.       2336.     422.19

*** NORMAL END OF HEC-1 ***
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100-Year 24-Hour Storm Study Area 1 HEC-1 Model

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1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   30AUG12  TIME  12:08:25  *
*                                      *
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*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X    X         XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X    X         X
X     X  XXXXXXX   XXXXX         XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

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

1 HEC-1 INPUT PAGE 1

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

   1          ID   Rainbow Valley ADMP Areas 1,2,3,4 FDS
   2          ID   Filename: StudyArea1.hc1
   3          ID   Revised: 08/30/12
   4          ID   Prepared by RBF and Baker
   5          ID   Description: Study Area 1 contains sub-basins from Watershed A
   6          ID   Modified RCPA20, Sub-basin A51 (A51A), and CPA51A (CP51A)
   7          ID
   8          ID   FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
   9          ID   WATERMAN WASH - Contract # FCD 2006C029
  10          ID
  11          ID   Prepared by:
  12          ID   URS Corporation
  13          ID   7720 N. 16th Street, Suite 100
  14          ID   Phoenix, Arizona   85020
  15          ID
  16          ID   01/09/09  Filename:  With Railroad.IH1
  17          ID            Last Revised: 06/01/11
  18          ID
  19          ID   1. The following model is modeled with the Union Pacific railroad
  20          ID      embankment located adjacent to SR-238.
  21          ID   2. The storm used was 100-year, 24-hour.
  22          ID   3. S-graph was the unit hydrograph.
  23          ID   4. Time step of 10 minutes.
  24          ID   5. A point rainfall of 3.4 inches from NOAA 14 with Maricopa County Areal
  25          ID      reduction.
  26          ID   6. Green-Ampt loss methods were used. Normal depth Channel routing.
  27          ID   7. The sub-basin parameters were generated using FCDMC's DDMSW software.
  28          ID   8. The contributing area was calculated by estimating the amount of flow
  29          ID      in each routing reach.
              *DIAGRAM
  30          IT      10                    300
  31          IO       5
  32          IN      15
              *
  33          JD   3.438  0.0001
  34          PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
  35          PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
  36          PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
  37          PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
  38          PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
  39          PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
  40          PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
  41          PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
  42          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
  43          PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
  44          JD   3.266    10.0
  45          JD   3.094    30.0
  46          JD   2.991    60.0
  47          JD   2.929    90.0
              * ******************************************************************************
              *
              * ******************************************************************************
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1 HEC-1 INPUT PAGE 2

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

  48          KK     A04
  49          KM        Runoff from A04
  50          KM        Customized XKSAT Values
  51          BA   0.743
  52          LG    0.35    0.35    2.80    1.05       0
  53          UI       0     443    1344     837     198      44       0       0       0       0
  54          UI       0       0       0       0       0       0       0       0       0       0
              *
  55          KM    URS 2009

  56          KK    DA04
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 57          KM      Divert flow from CP A04 into basin A06
 58          KM        Natural divergence of flow due to a braided channel network.
 59          DT   DVA04
 60          DI       0      64     221     405    1007    2383    4403    6549    9034   11830
 61          DQ       0      38     129     222     543    1283    2351    3478    4782    6249
             *

 62          KK  RCPA04
 63          KM        Route remainder flow from CP A04 to CP A07
 64          KM    URS 2009
 65          RS       7    FLOW      -1
 66          RC   0.050   0.045   0.050    8731  0.0128
 67          KM        Typical Sheet Flow Small Wash
 68          RX       0     600     700     706     711     717     817    1417
 69          RY       6       4       3       0       0       3       4       6
             *
 70          KM    URS 2009

 71          KK     A07
 72          KM        Runoff from A07
 73          KM        Customized XKSAT Values
 74          BA   0.523
 75          LG    0.35    0.35    2.86    1.00       0
 76          UI       0     200     606     758     324      98      25       0       0       0
 77          UI       0       0       0       0       0       0       0       0       0       0
             *
 78          KM    URS 2009

 79          KK   CPA07
 80          KM        Combine A04 with A07
 81          HC       2    .857
             *
 82          KM    URS 2009

 83          KK    DA07
 84          KM      Divert flow from CP A07 into basin A22
 85          KM        Natural divergence of flow due to a braided channel network.
 86          DT   DVA07
 87          DI       0     115     792    1951    3485    5346    7503    9932   12613
 88          DQ       0      87     487    1147    2009    3050    4252    5603    7093
             *
 89          KM    URS 2009
```

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

 90          KK  RCPA07
 91          KM        Route remainder flow from CP A07 to CP A21
 92          RS      15    FLOW      -1
 93          RC   0.050   0.045   0.050   11510  0.0097
 94          RX       0      87     116     234     271     300     325     530
 95          RY  1174.4  1174.3  1174.0  1174.0  1173.0  1173.0  1173.3  1173.9
             *
 96          KM    URS 2009

 97          KK     A09
 98          KM        Runoff from A09
 99          KM        Customized XKSAT Values
100          BA   0.784
101          LG    0.35    0.35    2.94    0.95       0
102          UI       0     170     521     960     743     401     141      55      28       0
103          UI       0       0       0       0       0       0       0       0       0       0
             *
104          KM    URS 2009

105          KK    DA09
106          KM      Divert flow from CP A09 into basin A18
107          KM        Natural divergence of flow due to a braided channel network.
108          DT   DVA09
109          DI       0      49     188     378     950    2131    3696    5581    7757
110          DQ       0       7      30      69     176     405     701    1056    1464
             *
111          KM    URS 2009

112          KK  RCPA09
113          KM        Route remainder flow from CP A09 to CP A08
114          RS       2    FLOW      -1
115          RC   0.050   0.045   0.050    4721  0.0068
116          RX      48     106     151     166     175     209     321     514
117          RY  1176.6  1174.7  1174.0  1174.9  1175.4  1175.5  1175.5  1175.4
             *
118          KM    URS 2009

119          KK     A08
120          KM        Runoff from A08
121          KM        Customized XKSAT Values
122          BA   2.128
123          LG    0.35    0.35    3.17    0.81       0
124          UI       0     149     528     832    1149    1763    1346     979     678     323
125          UI     214     125      46      46      45       0       0       0       0       0
126          UI       0       0       0       0       0       0       0       0       0       0
             *
127          KM    URS 2009

128          KK   CPA08
129          KM        Combine A09 with A08
130          HC       2   2.771
             *
131          KM    URS 2009
```

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

132          KK    DA08
```

```
133          KM      Divert flow from CP A08 into basin A19
134          KM        Natural divergence of flow due to a braided channel network.
135          DT   DVA08
136          DI       0     273    1121    2433    4119    6137    8456   11057   13921
137          DQ       0     196     705    1448    2386    3499    4772    6194    7756
             *
138          KM    URS 2009

139          KK  RCPA08
140          KM        Route remainder flow from CP A08 to CP A21
141          RS       9    FLOW      -1
142          RC   0.050   0.045   0.050    3836  0.0089
143          RX     0.0   604.0   613.0   633.0   680.0   684.0   685.0   786.0
144          RY  1143.0  1140.9  1141.0  1141.0  1141.1  1141.1  1141.1  1143.0
             *
145          KM    URS 2009

146          KK     A21
147          KM        Runoff from A21
148          BA   1.044
149          LG    0.35    0.35    4.60    0.33       0
150          UI       0     149     494     794    1135     723     422     170      83      31
151          UI      31       0       0       0       0       0       0       0       0       0
152          UI       0       0       0       0       0       0       0       0       0       0
             *
153          KM    URS 2009

154          KK   CPA21
155          KM        Combine A08, A07 with A21
156          HC       3   2.515
             *
157          KM    URS 2009

158          KK    DA21
159          KM      Divert flow from CP A21 into basin A32
160          KM        Natural divergence of flow due to a braided channel network.
161          DT   DVA21
162          DI       0      50     203     450    1373    3396    6132    9472   13359
163          DQ       0      22      89     198     610    1515    2741    4237    5978
             *
164          KM    URS 2009

165          KK  RCPA21
166          KM        Route remainder flow from CP A21 to CP A20
167          RS       6    FLOW      -1
168          RC   0.050   0.045   0.050    5790  0.0083
169          RX       0     510     533     598     609     693     770    1290
170          RY  1110.4    1109  1108.9    1108    1108  1109.1  1109.3  1110.2
             *
171          KM    URS 2009
```



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

172          KK     A20
173          KM        Runoff from A20
174          BA   0.340
175          LG    0.35    0.36    5.00    0.27       0
176          UI       0     102     298     490     277      99      32      14       0       0
177          UI       0       0       0       0       0       0       0       0       0       0
             *
178          KM    URS 2009

179          KK   CPA20
180          KM        Combine A21 with A20
181          HC       2   1.748
             *
182          KM    URS 2009

183          KK    DA20
184          KM      Divert flow from CP A20 into basin A32
185          KM        Natural divergence of flow due to a braided channel network.
186          DT   DVA20
187          DI       0      39     300     800    1523    2421    3473    4666    5986    7426
188          DQ       0       2      27     142     358     643     988    1385    1830    2318
             *
189          KM    URS 2009

190          KK  RCPA20
191          KM        Route remainder flow from CP A20 to CP A51A
192          KM        RBF/Baker Revised length, slope, and NSTEPS
193          RS      12    FLOW      -1
194          RC   0.050   0.045   0.050   10102  0.0067
195          RX     102     168     195     276     283     362     368     534
196          RY  1064.6  1064.6  1064.6  1064.1  1064.0  1064.0  1064.1  1065.1
             *
197          KM    URS 2009

198          KK    A51A
199          KM        Runoff from A51A
200          KM        RBF/Baker Revised BA, LG, and UI
201          BA   0.540
202          LG    0.35    0.35    5.10    0.26       0
203          UI       0      74     248     393     583     380     229      95      49      16
204          UI      16       0       0       0       0       0       0       0       0       0
             *
205          KM    URS 2009

206          KK   CP51A
207          KM        Combine A20 with A51A
208          KM        RBF/Baker Adjusted Area
209          HC       2   2.109
             *
210          KM    URS 2009
```

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

 211          KK     A05
 212          KM        Runoff from A05
 213          KM        Customized XKSAT Values
 214          BA   2.141
 215          LG    0.35    0.35    3.01    0.90       0
 216          UI       0     446    1366    2530    2070    1154     423     170      75       0
 217          UI       0       0       0       0       0       0       0       0       0       0
              *
 218          KM    URS 2009

 219          KK  RCPA05
 220          KM        Route flow from CP A05 to CP A26
 221          RS      10    FLOW      -1
 222          RC   0.050   0.045   0.050    9404  0.0089
 223          RX       0     605     723     929     945     965    1011    1556
 224          RY  1155.3  1154.0  1154.0  1153.8  1153.8  1154.0  1154.0  1155.0
              *
 225          KM    URS 2009

 226          KK     A23
 227          KM        Runoff from A23
 228          KM        Customized XKSAT Values
 229          BA   0.233
 230          LG    0.35    0.35    3.11    0.84       0
 231          UI       0      54     166     301     214     105      39      12       9       0
 232          UI       0       0       0       0       0       0       0       0       0       0
              *
 233          KM    URS 2009

 234          KK  RCPA23
 235          KM        Route flow from CP A23 to CP A26
 236          RS      10    FLOW      -1
 237          RC   0.050   0.045   0.050    9082  0.0087
 238          RX       0      62     205     232     258     347     358     376
 239          RY  1158.7  1157.9  1156.7  1156.5  1156.4  1157.5  1157.7  1158.0
              *
 240          KM    URS 2009

 241          KK     A25
 242          KM        Runoff from A25
 243          KM        Customized XKSAT Values
 244          BA   0.215
 245          LG    0.35    0.35    3.19    0.79       0
 246          UI       0      75     222     317     152      45      13       0       0       0
 247          UI       0       0       0       0       0       0       0       0       0       0
              *
 248          KM    URS 2009

 249          KK  RCPA25
 250          KM        Route flow from CP A25 to CP A26
 251          RS       2    FLOW      -1
 252          RC   0.050   0.045   0.050    3353  0.0089
 253          RX      23     131     171     185     336     353     400     420
 254          RY  1103.3  1104.0  1102.2  1102.2  1103.6  1103.6  1103.6  1103.6
              *
```



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

 255          KM    URS 2009

 256          KK     A26
 257          KM        Runoff from A26
 258          KM        Customized XKSAT Values
 259          BA   0.499
 260          LG    0.35    0.35    3.74    0.54       0
 261          UI       0     127     379     674     442     196      76      19       0       0
 262          UI       0       0       0       0       0       0       0       0       0       0
              *

 263          KK   CPA26
 264          KM        Combine A05, A23, A25 with A26
 265          HC       4   3.088
              *
 266          KM    URS 2009

 267          KK  RCPA26
 268          KM        Route flow from CP A26 to CP A27
 269          RS       5    FLOW      -1
 270          RC   0.050   0.045   0.050    7992  0.0079
 271          RX       6     189     267     345     376     405     432     512
 272          RY  1050.0  1050.0  1048.9  1048.0  1048.0  1048.6  1048.9  1050.3
              *
 273          KM    URS 2009

 274          KK     A27
 275          KM        Runoff from A27
 276          KM        Customized XKSAT Values
 277          BA   1.105
 278          LG    0.35    0.35    3.60    0.58       0
 279          UI       0     154     512     817    1196     773     461     191      95      33
 280          UI      33       0       0       0       0       0       0       0       0       0
              *

 281          KK  CPA27A
 282          KM        Combine A26 with A27
 283          HC       2   4.194
              *
 284          KM    URS 2009

 285          KK     A28
 286          KM        Runoff from A28
```

```
 287          KM        Customized XKSAT Values
 288          BA   0.551
 289          LG    0.35    0.35    3.45    0.65       0
 290          UI       0     244     767     746     274      71      28       0       0       0
 291          UI       0       0       0       0       0       0       0       0       0       0
              *
 292          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE  8

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


 293          KK  RCPA28
 294          KM        Route flow from CP A28 to CP A27
 295          RS       2    FLOW      -1
 296          RC   0.050   0.045   0.050    2223  0.0074
 297          RX      75     158     280     375     420     462     553     628
 298          RY  1035.0  1032.7  1031.2  1031.4  1031.5  1032.0  1034.0  1034.0
              *

 299          KK   CPA27
 300          KM        Combine A28 with A27
 301          HC       2   4.745
              *
 302          KM    URS 2009

 303          KK  RCPA27
 304          KM        Route flow from CP A27 to CP A29
 305          RS       2    FLOW      -1
 306          RC   0.050   0.045   0.050    4127  0.0041
 307          RX       0     142     288     345     421     538     633     774
 308          RY  1020.1  1016.2  1015.3  1014.4  1014.0  1016.5  1016.8  1018.8
              *
 309          KM    URS 2009

 310          KK     A29
 311          KM        Runoff from A29
 312          KM        Customized XKSAT Values
 313          BA   1.188
 314          LG    0.35    0.35    3.09    0.85       0
 315          UI       0     203     646    1129    1257     751     344     159      52      38
 316          UI       0       0       0       0       0       0       0       0       0       0
 317          UI       0       0       0       0       0       0       0       0       0       0
              *

 318          KK   CPA29
 319          KM        Combine A27 with A29
 320          HC       2   5.933
              *

 321          KK   DRA04
 322          KM      Return diverted flow from CP A04
 323          DR   DVA04
              *
 324          KM    URS 2009

 325          KK   RDA04
 326          KM        Route diverted flow from CP A04 to CP A06
 327          RS      12    FLOW      -1
 328          RC   0.050   0.045   0.050   15251  0.0121
 329          RX       2     512     545     593     670     724     728    1241
 330          RY  1251.0  1250.0  1249.4  1249.4  1249.3  1249.7  1249.8  1250.8
              *
 331          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE  9

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


 332          KK     A06
 333          KM        Runoff from A06
 334          KM        Customized XKSAT Values
 335          BA   1.108
 336          LG    0.35    0.35    2.91    0.97       0
 337          UI       0     188     599    1043    1176     703     325     149      50      36
 338          UI       0       0       0       0       0       0       0       0       0       0
 339          UI       0       0       0       0       0       0       0       0       0       0
              *
 340          KM    URS 2009

 341          KK   CPA06
 342          KM        Combine DRA04 with A06
 343          HC       2   1.517
              *
 344          KM    URS 2009

 345          KK  RCPA06
 346          KM        Route flow from CP A06 to CP A24
 347          RS       6    FLOW      -1
 348          RC   0.050   0.045   0.050   10764  0.0089
 349          RX       0      75     150     225     300     375     450     525
 350          RY  1118.2  1118.0  1117.5  1115.9  1116.2  1117.5    1118  1118.3
              *

 351          KK   DRA07
 352          KM      Return diverted flow from CP A07
 353          DR   DVA07
              *
 354          KM    URS 2009

 355          KK   RDA07
 356          KM        Route diverted flow from CP A07 to CP A22
 357          RS      25    FLOW      -1
 358          RC   0.050   0.045   0.050   16606  0.0099
 359          RX       0      92     153     247     469     534     603     698
 360          RY  1188.8  1187.5  1187.3  1186.4  1186.5  1186.7  1186.8  1187.2
```

```
                 *
 361             KM    URS 2009

 362             KK     A22
 363             KM        Runoff from A22
 364             KM        Customized XKSAT Values
 365             BA   0.578
 366             LG    0.35    0.35    3.71    0.55       0
 367             UI       0      44     174     262     394     498     342     238     130      71
 368             UI      42      13      13      13       0       0       0       0       0       0
                 *
 369             KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE 10

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

 370             KK   CPA22
 371             KM        Combine DRA07 with A22
 372             HC       2   0.989
                 *
 373             KM    URS 2009

 374             KK  RCPA22
 375             KM        Route flow from CP A22 to CP A24
 376             RS       1    FLOW      -1
 377             RC   0.050   0.045   0.050    1522  0.0079
 378             RX      99     147     193     208     347     374     383     450
 379             RY  1075.5  1075.3  1074.8  1072.5  1075.3  1076.0  1076.1  1076.7
                 *
 380             KM    URS 2009

 381             KK     A24
 382             KM        Runoff from A24
 383             KM        Customized XKSAT Values
 384             BA   1.355
 385             LG    0.35    0.35    3.17    0.81       0
 386             UI       0     145     518     786    1308    1044     695     379     183      94
 387             UI      36      36       0       0       0       0       0       0       0       0
 388             UI       0       0       0       0       0       0       0       0       0       0
                 *
 389             KM    URS 2009

 390             KK   CPA24
 391             KM        Combine A06, A22 with A24
 392             HC       3   3.861
                 *
 393             KM    URS 2009

 394             KK  RCPA24
 395             KM        Route flow from CP A24 to CP A30
 396             RS       6    FLOW      -1
 397             RC   0.050   0.045   0.050    8429  0.0069
 398             RX       0      84     311     403     459     587     714     821
 399             RY  1045.8  1045.4  1044.9  1042.1  1044.0  1044.0  1045.6  1045.9
                 *
 400             KM    URS 2009

 401             KK     A30
 402             KM        Runoff from A30
 403             KM        Customized XKSAT Values
 404             BA   0.675
 405             LG    0.35    0.35    3.88    0.49       0
 406             UI       0      67     246     373     620     531     358     214      97      55
 407             UI      17      17       0       0       0       0       0       0       0       0
 408             UI       0       0       0       0       0       0       0       0       0       0
                 *
 409             KM    URS 2009
1                                          HEC-1 INPUT                                          PAGE 11

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

 410             KK  CPA30A
 411             KM        Combine A24 with A30
 412             HC       2   4.536
                 *
 413             KM    URS 2009

 414             KK   CPA30
 415             KM        Combine A29 with A30
 416             HC       2  10.468
                 *
 417             KM    URS 2009

 418             KK  RCPA30
 419             KM        Route flow from CP A30 to CP A52
 420             RS       2    FLOW      -1
 421             RC   0.050   0.045   0.050    3039  0.0046
 422             RX       0     248     304     443     490     657     757     836
 423             RY  1006.0  1005.8  1004.6  1003.4  1001.4  1004.1  1005.1  1005.9
                 *
 424             KM    URS 2009

 425             KK     A52
 426             KM        Runoff from A52
 427             BA   0.218
 428             LG    0.35    0.35    4.60    0.33       0
 429             UI       0     117     365     266      73      16       0       0       0       0
 430             UI       0       0       0       0       0       0       0       0       0       0
                 *
 431             KM    URS 2009

 432             KK  CPA52A
 433             KM        Combine A30 with A52
 434             HC       2  10.686
```

```
                 *
435              KM    URS 2009

436              KK     A31
437              KM        Runoff from A31
438              BA   0.538
439              LG    0.34    0.37    5.60    0.21       0
440              UI       0      60     211     322     533     409     270     139      69      34
441              UI      14      14       0       0       0       0       0       0       0       0
442              UI       0       0       0       0       0       0       0       0       0       0
                 *
443              KM    URS 2009

444              KK  RCPA31
445              KM        Route flow from CP A31 to CP A32
446              RS       8    FLOW      -1
447              RC   0.050   0.045   0.050    7801  0.0067
448              RX     124     215     264     436     505     610     670     684
449              RY  1014.8  1014.8  1014.0  1014.0  1014.8  1016.0  1016.0  1016.0
                 *
1                                                HEC-1 INPUT                                                    PAGE 12

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

450              KK   DRA21
451              KM      Return diverted flow from CP A21
452              DR   DVA21
                 *
453              KM    URS 2009

454              KK   RDA21
455              KM        Route diverted flow from CP A21 to CP A32
456              RS      14    FLOW      -1
457              RC   0.050   0.045   0.050   17399  0.0074
458              RX       0     602     671     746     781     798     838    1440
459              RY  1078.7  1078.5  1078.0  1078.0  1078.4  1078.5  1078.4  1078.8
                 *

460              KK   DRA20
461              KM      Return diverted flow from CP A20
462              DR   DVA20
                 *

463              KK   RDA20
464              KM        Route diverted flow from CP A20 to CP A32
465              RS      17    FLOW      -1
466              RC   0.050   0.045   0.050   11360   0.007
467              RX     0.0    11.0    29.0   202.0   231.0   310.0   369.0   412.0
468              RY  1072.0  1072.0  1071.7  1070.0  1070.9  1071.3  1072.0  1072.0
                 *
469              KM    URS 2009

470              KK     A32
471              KM        Runoff from A32
472              BA   1.207
473              LG    0.35    0.39    5.70    0.20       0
474              UI       0     111     420     633    1038     977     663     419     186     114
475              UI      43      30      30       0       0       0       0       0       0       0
476              UI       0       0       0       0       0       0       0       0       0       0
                 *
477              KM    URS 2009

478              KK  CPA32A
479              KM        Combine DRA21, DRA20 with A32
480              HC       3   2.533
                 *
481              KM    URS 2009

482              KK   CPA32
483              KM        Combine A31 with A32
484              HC       2   3.071
                 *
485              KM    URS 2009
1                                                HEC-1 INPUT                                                    PAGE 13

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

486              KK  RCPA32
487              KM        Route flow from CP A32 to CP A52
488              RS       1    FLOW      -1
489              RC   0.050   0.045   0.050    1533  0.0052
490              RX       0    1216    1230    1367    1400    1440    1450    2460
491              RY  1002.6  1000.0  1000.1  1002.0  1002.0  1002.0  1002.0  1003.0
                 *

492              KK   CPA52
493              KM        Combine A32 with A52
494              HC       2  13.757
                 *
495              KM    URS 2009

496              KK  RCPA52
497              KM        Route flow from CP A52 to CP A55
498              RS       2    FLOW      -1
499              RC   0.050   0.045   0.050    1963  0.0051
500              RX       0     785     823     862     897     932    1002    2568
501              RY   996.5   994.5   994.0   992.7   994.0   995.3   995.3   997.2
                 *
502              KM    URS 2009

503              KK     A53
504              KM        Runoff from A53
505              KM        Customized XKSAT Values
506              BA   1.746
```

```
 507          LG    0.35    0.35    3.07    0.86       0
 508          UI       0     294     939    1628    1859    1113     520     237      81      56
 509          UI       0       0       0       0       0       0       0       0       0       0
              *
 510          KM    URS 2009

 511          KK     A54
 512          KM        Runoff from A54
 513          KM        Customized XKSAT Values
 514          BA   0.507
 515          LG    0.35    0.35    3.33    0.71      19
 516          UI       0     184     551     741     340     104      26       0       0       0
              *
 517          KM    URS 2009

 518          KK   CPA54
 519          KM        COMBINE A53 WITH A54
 520          HC       2   2.253
              *
 521          KM    URS 2009

 522          KK  RCPA54
 523          KM        Route flow from CP A54 to CP A55
 524          RS       3    FLOW      -1
 525          RC   0.050   0.045   0.050    3855  0.0052
 526          RX       0     145     197     234     297     400     450     564
 527          RY  1004.0  1002.0   999.9  1000.6  1001.7  1001.7  1001.7  1001.8
              *
1                                          HEC-1 INPUT                                          PAGE 14

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

 528          KM    URS 2009

 529          KK     A55
 530          KM        Runoff from A55
 531          KM        Customized XKSAT Values
 532          BA   0.613
 533          LG    0.35    0.35    3.67    0.56       1
 534          UI       0     211     622     903     441     133      39       0       0       0
              *
 535          KM    URS 2009

 536          KK  CPA55A
 537          KM        Combine A54 with A55
 538          HC       2   2.866
              *
 539          KM    URS 2009

 540          KK   CPA55
 541          KM        Combine A52 with A55
 542          HC       2  16.623
              *
 543          KM    URS 2009

 544          KK  RCPA55
 545          KM        Route flow from CP A55 to CP A56
 546          RS       6    FLOW      -1
 547          RC   0.050   0.045   0.050    9154  0.0048
 548          RX       0      56     221     485     500     558     748     760
 549          RY   977.8   976.9   975.9   975.6   975.6   976.0   976.8   976.8
              *
 550          KM    URS 2009

 551          KK     A56
 552          KM        Runoff from A56
 553          BA   1.839
 554          LG    0.35    0.35    4.45    0.37      13
 555          UI       0     292     948    1596    1987    1208     611     266     107      58
 556          UI       0       0       0       0       0       0       0       0       0       0
              *
 557          KM    URS 2009

 558          KK   CPA56
 559          KM        Combine A55 with A56
 560          HC       2  18.462
              *
 561          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   48        A04
             .
             .
   59        .------->   DVA04
   56      DA04
             V
             V
   62     RCPA04
             .
             .
   71        .         A07
             .          .
             .          .
   79      CPA07...........
             .
             .
   86        .------->   DVA07
   83      DA07
             V
             V
   90     RCPA07
```

```
                .
                .
 97             .         A09
                .          .
                .          .
108             .          .-------->   DVA09
105             .        DA09
                .          V
                .          V
112             .      RCPA09
                .          .
                .          .
119             .          .         A08
                .          .          .
                .          .          .
128             .       CPA08............
                .          .
                .          .
135             .          .-------->   DVA08
132             .        DA08
                .          V
                .          V
139             .      RCPA08
                .          .
                .          .
146             .          .         A21
                .          .          .
                .          .          .
154          CPA21........................
                .
                .
161             .-------->   DVA21
158          DA21
                V
                V
165         RCPA21
                .
                .
172             .         A20
                .          .
                .          .
179          CPA20............
                .
                .
186             .-------->   DVA20
183          DA20
                V
                V
190         RCPA20
                .
                .
198             .        A51A
                .          .
                .          .
206          CP51A............
                .
                .
211             .         A05
                .          V
                .          V
219             .      RCPA05
                .          .
                .          .
226             .          .         A23
                .          .          V
                .          .          V
234             .          .      RCPA23
                .          .          .
                .          .          .
241             .          .          .         A25
                .          .          .          V
                .          .          .          V
249             .          .          .      RCPA25
                .          .          .          .
                .          .          .          .
256             .          .          .          .         A26
                .          .          .          .          .
                .          .          .          .          .
263             .       CPA26.................................
                .          V
                .          V
267             .      RCPA26
                .          .
                .          .
274             .          .         A27
                .          .          .
                .          .          .
281             .      CPA27A............
                .          .
                .          .
285             .          .         A28
                .          .          V
                .          .          V
293             .          .      RCPA28
                .          .          .
                .          .          .
299             .       CPA27............
                .          V
                .          V
303             .      RCPA27
                .          .
                .          .
310             .          .         A29
                .          .          .
                .          .          .
318             .       CPA29............
```

```
                .         .
                .         .
323             .         .<-------   DVA04
321             .         .      DRA04
                .         .         V
                .         .         V
325             .         .      RDA04
                .         .         .
                .         .         .
332             .         .         .        A06
                .         .         .         .
                .         .         .         .
341             .         .      CPA06............
                .         .         V
                .         .         V
345             .         .     RCPA06
                .         .         .
                .         .         .
353             .         .         .         .<-------   DVA07
351             .         .         .      DRA07
                .         .         .         V
                .         .         .         V
355             .         .         .      RDA07
                .         .         .         .
                .         .         .         .
362             .         .         .         .        A22
                .         .         .         .         .
                .         .         .         .         .
370             .         .         .      CPA22............
                .         .         .         V
                .         .         .         V
374             .         .         .     RCPA22
                .         .         .         .
                .         .         .         .
381             .         .         .         .        A24
                .         .         .         .         .
                .         .         .         .         .
390             .         .      CPA24........................
                .         .         V
                .         .         V
394             .         .     RCPA24
                .         .         .
                .         .         .
401             .         .         .        A30
                .         .         .         .
                .         .         .         .
410             .         .     CPA30A............
                .         .         .
                .         .         .
414             .      CPA30............
                .         V
                .         V
418             .     RCPA30
                .         .
                .         .
425             .         .        A52
                .         .         .
                .         .         .
432             .     CPA52A............
                .         .
                .         .
436             .         .        A31
                .         .         V
                .         .         V
444             .         .     RCPA31
                .         .         .
                .         .         .
452             .         .         .         .<-------   DVA21
450             .         .         .      DRA21
                .         .         .         V
                .         .         .         V
454             .         .         .      RDA21
                .         .         .         .
                .         .         .         .
462             .         .         .         .         .<-------   DVA20
460             .         .         .         .      DRA20
                .         .         .         .         V
                .         .         .         .         V
463             .         .         .         .      RDA20
                .         .         .         .         .
                .         .         .         .         .
470             .         .         .         .         .        A32
                .         .         .         .         .         .
                .         .         .         .         .         .
478             .         .         .     CPA32A........................
                .         .         .         .
                .         .         .         .
482             .         .      CPA32............
                .         .         V
                .         .         V
486             .         .     RCPA32
                .         .         .
                .         .         .
492             .      CPA52............
                .         V
                .         V
496             .     RCPA52
                .         .
                .         .
503             .         .        A53
                .         .         .
                .         .         .
511             .         .         .        A54
                .         .         .         .
                .         .         .         .
518             .         .      CPA54............
```

```
                .          .          V
                .          .          V
  522           .          .      RCPA54
                .          .          .
                .          .          .
  529           .          .          .         A55
                .          .          .           .
                .          .          .           .
  536           .          .      CPA55A...........
                .          .          .
                .          .          .
  540           .       CPA55...........
                .          V
                .          V
  544           .      RCPA55
                .          .
                .          .
  551           .          .         A56
                .          .          .
                .          .          .
  558           .       CPA56...........

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************
 *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
 *              JUN   1998              *
 *            VERSION 4.1               *
 *                                      *
 *  RUN DATE   30AUG12  TIME  12:08:25  *
 *                                      *
 ****************************************
```

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

```
                    Rainbow Valley ADMP Areas 1,2,3,4 FDS
                    Filename: StudyArea1.hc1
                    Revised: 08/30/12
                    Prepared by RBF and Baker
                    Description: Study Area 1 contains sub-basins from Watershed A
                    Modified RCPA20, Sub-basin A51 (A51A), and CPA51A (CP51A)

                    FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
                    WATERMAN WASH - Contract # FCD 2006C029

                    Prepared by:
                    URS Corporation
                    7720 N. 16th Street, Suite 100
                    Phoenix, Arizona   85020

                    01/09/09  Filename:  With Railroad.IH1
                               Last Revised: 06/01/11

                    1. The following model is modeled with the Union Pacific railroad
                       embankment located adjacent to SR-238.
                    2. The storm used was 100-year, 24-hour.
                    3. S-graph was the unit hydrograph.
                    4. Time step of 10 minutes.
                    5. A point rainfall of 3.4 inches from NOAA 14 with Maricopa County Areal
                       reduction.
                    6. Green-Ampt loss methods were used. Normal depth Channel routing.
                    7. The sub-basin parameters were generated using FCDMC's DDMSW software.
                    8. The contributing area was calculated by estimating the amount of flow
                       in each routing reach.

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

     IT          HYDROGRAPH TIME DATA
                        NMIN         10  MINUTES IN COMPUTATION INTERVAL
                       IDATE      1    0  STARTING DATE
                       ITIME       0000  STARTING TIME
                          NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                      NDDATE      3    0  ENDING DATE
                      NDTIME       0150  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.17 HOURS
                      TOTAL TIME BASE   49.83 HOURS

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

  33 JD          INDEX STORM NO. 1
                       STRM        3.44  PRECIPITATION DEPTH
                       TRDA        0.00  TRANSPOSITION DRAINAGE AREA

  34 PI            PRECIPITATION PATTERN
                      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                      0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                      0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
```

```
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

 44 JD        INDEX STORM NO. 2
                STRM        3.27  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

 45 JD        INDEX STORM NO. 3
                STRM        3.09  PRECIPITATION DEPTH
                TRDA       30.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

 46 JD        INDEX STORM NO. 4
                STRM        2.99  PRECIPITATION DEPTH
                TRDA       60.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

 47 JD        INDEX STORM NO. 5
                STRM        2.93  PRECIPITATION DEPTH
                TRDA       90.00  TRANSPOSITION DRAINAGE AREA

  0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

1
                                    RUNOFF SUMMARY
                              FLOW IN CUBIC FEET PER SECOND
                           TIME IN HOURS,  AREA IN SQUARE MILES

                                    PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION    FLOW     PEAK                                          AREA      STAGE     MAX STAGE
+                                                        6-HOUR     24-HOUR     72-HOUR

        HYDROGRAPH AT
+                          A04      464.    12.33         30.          7.          4.       0.74
        DIVERSION TO                  .
+                         DVA04     254.    12.33         17.          4.          2.       0.74
```

+	HYDROGRAPH AT	DA04	211.	12.33	13.	3.	2.	0.74
+	ROUTED TO	RCPA04	136.	12.83	13.	3.	2.	0.74
+	HYDROGRAPH AT	A07	265.	12.50	22.	6.	3.	0.52
+	2 COMBINED AT	CPA07	301.	12.50	35.	9.	4.	0.86
+	DIVERSION TO	DVA07	197.	12.50	24.	6.	3.	0.86
+	HYDROGRAPH AT	DA07	104.	12.50	11.	3.	1.	0.86
+	ROUTED TO	RCPA07	40.	14.67	10.	3.	1.	0.86
+	HYDROGRAPH AT	A09	378.	12.50	35.	9.	4.	0.78
+	DIVERSION TO	DVA09	69.	12.50	6.	1.	1.	0.78
+	HYDROGRAPH AT	DA09	309.	12.50	29.	7.	3.	0.78
+	ROUTED TO	RCPA09	152.	13.00	29.	7.	3.	0.78
+	HYDROGRAPH AT	A08	781.	12.83	108.	27.	13.	2.13
+	2 COMBINED AT	CPA08	923.	12.83	136.	34.	16.	2.77
+	DIVERSION TO	DVA08	586.	12.83	90.	23.	11.	2.77
+	HYDROGRAPH AT	DA08	337.	12.83	45.	11.	5.	2.77
+	ROUTED TO	RCPA08	287.	13.33	45.	11.	5.	2.77
+	HYDROGRAPH AT	A21	731.	12.67	86.	21.	10.	1.04
+	3 COMBINED AT	CPA21	728.	12.67	140.	35.	17.	2.52
+	DIVERSION TO	DVA21	322.	12.67	62.	16.	7.	2.52
+	HYDROGRAPH AT	DA21	406.	12.67	78.	20.	10.	2.52
+	ROUTED TO	RCPA21	303.	13.17	78.	20.	10.	2.52
+	HYDROGRAPH AT	A20	319.	12.50	30.	7.	4.	0.34
+	2 COMBINED AT	CPA20	321.	12.50	107.	27.	13.	1.75
+	DIVERSION TO	DVA20	32.	12.50	9.	2.	1.	1.75
+	HYDROGRAPH AT	DA20	289.	12.50	98.	25.	12.	1.75
+	ROUTED TO	RCPA20	236.	14.50	94.	25.	12.	1.75
+	HYDROGRAPH AT	A51A	405.	12.67	48.	12.	6.	0.54
+	2 COMBINED AT	CP51A	401.	12.67	136.	37.	18.	2.11
+	HYDROGRAPH AT	A05	1046.	12.50	99.	25.	12.	2.14
+	ROUTED TO	RCPA05	447.	13.83	98.	25.	12.	2.14
+	HYDROGRAPH AT	A23	131.	12.50	12.	3.	1.	0.23
+	ROUTED TO	RCPA23	51.	13.83	12.	3.	1.	0.23
+	HYDROGRAPH AT	A25	135.	12.50	11.	3.	1.	0.22
+	ROUTED TO	RCPA25	76.	12.83	11.	3.	1.	0.22
+	HYDROGRAPH AT	A26	369.	12.50	33.	8.	4.	0.50
	4 COMBINED AT							

+		CPA26	502.	13.83	150.	38.	18.	3.09
+	ROUTED TO	RCPA26	409.	14.50	147.	38.	18.	3.09
+	HYDROGRAPH AT	A27	629.	12.67	70.	18.	8.	1.11
+	2 COMBINED AT	CPA27A	631.	12.67	213.	55.	27.	4.19
+	HYDROGRAPH AT	A28	426.	12.33	33.	8.	4.	0.55
+	ROUTED TO	RCPA28	304.	12.67	33.	8.	4.	0.55
+	2 COMBINED AT	CPA27	928.	12.67	245.	63.	31.	4.74
+	ROUTED TO	RCPA27	628.	13.00	240.	63.	31.	4.74
+	HYDROGRAPH AT	A29	532.	12.50	58.	15.	7.	1.19
+	2 COMBINED AT	CPA29	848.	12.67	294.	78.	37.	5.93
+	HYDROGRAPH AT	DRA04	254.	12.33	17.	4.	2.	0.74
+	ROUTED TO	RDA04	43.	14.67	15.	4.	2.	0.74
+	HYDROGRAPH AT	A06	434.	12.67	48.	12.	6.	1.11
+	2 COMBINED AT	CPA06	432.	12.67	62.	16.	8.	1.52
+	ROUTED TO	RCPA06	210.	13.50	57.	16.	8.	1.52
+	HYDROGRAPH AT	DRA07	197.	12.50	24.	6.	3.	0.86
+	ROUTED TO	RDA07	58.	15.83	22.	6.	3.	0.86
+	HYDROGRAPH AT	A22	273.	12.83	38.	9.	5.	0.58
+	2 COMBINED AT	CPA22	272.	12.83	55.	15.	7.	0.99
+	ROUTED TO	RCPA22	255.	12.83	54.	15.	7.	0.99
+	HYDROGRAPH AT	A24	588.	12.67	69.	17.	8.	1.36
+	3 COMBINED AT	CPA24	781.	12.67	175.	48.	23.	3.86
+	ROUTED TO	RCPA24	522.	13.50	169.	48.	23.	3.86
+	HYDROGRAPH AT	A30	380.	12.67	46.	12.	6.	0.68
+	2 COMBINED AT	CPA30A	547.	13.50	209.	59.	29.	4.54
+	2 COMBINED AT	CPA30	1217.	12.67	496.	135.	65.	10.47
+	ROUTED TO	RCPA30	1113.	13.17	491.	135.	65.	10.47
+	HYDROGRAPH AT	A52	244.	12.33	18.	5.	2.	0.22
+	2 COMBINED AT	CPA52A	1113.	13.17	503.	139.	67.	10.69
+	HYDROGRAPH AT	A31	407.	12.67	50.	13.	6.	0.54
+	ROUTED TO	RCPA31	251.	13.50	50.	13.	6.	0.54
+	HYDROGRAPH AT	DRA21	322.	12.67	62.	16.	7.	2.52
+	ROUTED TO	RDA21	107.	17.33	57.	16.	7.	2.52
+	HYDROGRAPH AT	DRA20	32.	12.50	9.	2.	1.	1.75
+	ROUTED TO	RDA20	21.	15.33	9.	2.	1.	1.75
+	HYDROGRAPH AT	A32	850.	12.67	112.	28.	13.	1.21

+	3 COMBINED AT	CPA32A	845.	12.67	162.	46.	22.	2.53
+	2 COMBINED AT	CPA32	844.	12.67	211.	58.	28.	3.07
+	ROUTED TO	RCPA32	697.	12.83	206.	58.	28.	3.07
+	2 COMBINED AT	CPA52	1676.	13.00	682.	190.	91.	13.76
+	ROUTED TO	RCPA52	1548.	13.33	680.	190.	91.	13.76
+	HYDROGRAPH AT	A53	761.	12.50	84.	21.	10.	1.75
+	HYDROGRAPH AT	A54	403.	12.33	47.	14.	7.	0.51
+	2 COMBINED AT	CPA54	1152.	12.50	131.	35.	17.	2.25
+	ROUTED TO	RCPA54	829.	12.83	131.	35.	17.	2.25
+	HYDROGRAPH AT	A55	460.	12.50	41.	10.	5.	0.61
+	2 COMBINED AT	CPA55A	889.	12.83	171.	45.	22.	2.87
+	2 COMBINED AT	CPA55	2051.	13.17	813.	226.	110.	16.62
+	ROUTED TO	RCPA55	1794.	14.00	780.	226.	110.	16.62
+	HYDROGRAPH AT	A56	1367.	12.50	183.	52.	25.	1.84
+	2 COMBINED AT	CPA56	1795.	14.00	884.	269.	132.	18.46

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

100-Year 24-Hour Storm Study Area 2 HEC-1 Model

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   14JUN12  TIME  16:39:57  *
*                                      *
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****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*          (916) 756-1104              *
*                                      *
****************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

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

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

```
1                                          HEC-1 INPUT                                                    PAGE  1

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

         1          ID   Rainbow Valley ADMP Areas 1,2,3,4 FDS
         2          ID   Filename: StudyArea2.hc1
         3          ID   Revised: 06/14/12
         4          ID   Prepared by RBF and Baker
         5          ID   Description: Study Area 2 contains Sub-basins A58 to A60A.
         6          ID   Modified Sub-basin A60 (A60A) & CPA60 (CPA60A)
         7          ID
         8          ID
         9          ID   FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
        10          ID   WATERMAN WASH - Contract # FCD 2006C029
        11          ID
        12          ID   Prepared by:
        13          ID   URS Corporation
        14          ID   7720 N. 16th Street, Suite 100
        15          ID   Phoenix, Arizona   85020
        16          ID
        17          ID   01/09/09  Filename:  With Railroad.IH1
        18          ID            Last Revised: 06/01/11
        19          ID
        20          ID   1. The following model is modeled with the Union Pacific railroad
        21          ID      embankment located adjacent to SR-238.
        22          ID   2. The storm used was 100-year, 24-hour.
        23          ID   3. S-graph was the unit hydrograph.
        24          ID   4. Time step of 10 minutes.
        25          ID   5. A point rainfall of 3.4 inches from NOAA 14 with Maricopa County Areal
        26          ID      reduction.
        27          ID   6. Green-Ampt loss methods were used. Normal depth Channel routing.
        28          ID   7. The sub-basin parameters were generated using FCDMC's DDMSW software.
        29          ID   8. The contributing area was calculated by estimating the amount of flow
        30          ID      in each routing reach.
                    *DIAGRAM
        31          IT      10                    300
        32          IO       5
        33          IN      15
                    *
        34          JD   3.438  0.0001
        35          PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
        36          PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
        37          PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
        38          PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
        39          PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
        40          PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
        41          PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
        42          PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
        43          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
        44          PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
        45          JD   3.266    10.0
        46          JD   3.094    30.0
        47          JD   2.991    60.0
        48          JD   2.929    90.0
                    * ******************************************************************************
                    * Begin Watershed A
                    * ******************************************************************************
1                                          HEC-1 INPUT                                                    PAGE  2

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

        49          KK     A58
        50          KM        Runoff from A58
        51          BA   2.131
        52          LG    0.35    0.35    4.00    0.46      23
        53          UI       0     218     792    1201    1998    1664    1115     644     300     163
        54          UI      56      56       0       0       0       0       0       0       0       0
                    *
        55          KM    URS 2009

        56          KK     A59
```

```
57          KM        Runoff from A59
58          BA   1.255
59          LG    0.35    0.35    4.35    0.39      26
60          UI       0     339    1002    1742    1080     444     164      50       0       0
            *

61          KK   CPA59
62          KM        COMBINE A58 WITH A59
63          HC       2   3.387
            *
64          KM    URS 2009

65          KK  RCPA59
66          KM        Route flow from CP A59 to CP A60
67          RS       2    FLOW      -1
68          RC   0.050   0.045   0.050    6336  0.0096
69          RX      73      76      82     212     298     451     485     529
70          RY   920.1   920.0   919.6   912.9   914.1   916.7   919.5   922.3
            *
71          KM    URS 2009

72          KK    A60A
73          KM        Runoff from A60A
74          KM        RBF/Baker Revised BA, LG, and UI
75          BA   0.958
76          LG    0.33    0.33    4.40    0.38      17
77          UI       0     275     806    1361     800     303     103      39       0       0
            *

78          KK  CPA60A
79          KM        Combine A59 with A60A
80          KM        RBF/Baker Revised
81          HC       2
            *
82          ZZ
1
                SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE      (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

    49         A58
                .
                .
    56          .         A59
                .           .
                .           .
    61       CPA59...........
                V
                V
    65      RCPA59
                .
                .
    72          .        A60A
                .           .
                .           .
    78      CPA60A...........

 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1****************************************                                    ****************************************
 *                                      *                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *           VERSION 4.1                *                                    *          609 SECOND STREET           *
 *                                      *                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   14JUN12  TIME  16:39:57  *                                    *          (916) 756-1104              *
 *                                      *                                    *                                      *
 ****************************************                                    ****************************************
```

Rainbow Valley ADMP Areas 1,2,3,4 FDS
Filename: StudyArea2.hc1
Revised: 06/14/12
Prepared by RBF and Baker
Description: Study Area 2 contains Sub-basins A58 to A60A.
Modified Sub-basin A60 (A60A) & CPA60 (CPA60A)

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
WATERMAN WASH - Contract # FCD 2006C029

Prepared by:
URS Corporation
7720 N. 16th Street, Suite 100
Phoenix, Arizona 85020

01/09/09 Filename: With Railroad.IH1
Last Revised: 06/01/11

1. The following model is modeled with the Union Pacific railroad embankment located adjacent to SR-238.
2. The storm used was 100-year, 24-hour.
3. S-graph was the unit hydrograph.
4. Time step of 10 minutes.
5. A point rainfall of 3.4 inches from NOAA 14 with Maricopa County Areal reduction.
6. Green-Ampt loss methods were used. Normal depth Channel routing.
7. The sub-basin parameters were generated using FCDMC's DDMSW software.
8. The contributing area was calculated by estimating the amount of flow in each routing reach.

```
 32 IO          OUTPUT CONTROL VARIABLES
```

```
                IPRNT          5  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE

 IT          HYDROGRAPH TIME DATA
                 NMIN         10  MINUTES IN COMPUTATION INTERVAL
                IDATE      1    0  STARTING DATE
                ITIME       0000  STARTING TIME
                   NQ        300  NUMBER OF HYDROGRAPH ORDINATES
              NDDATE      3    0  ENDING DATE
              NDTIME       0150  ENDING TIME
               ICENT         19  CENTURY MARK

           COMPUTATION INTERVAL    0.17 HOURS
                TOTAL TIME BASE   49.83 HOURS

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

 34 JD       INDEX STORM NO. 1
                 STRM        3.44  PRECIPITATION DEPTH
                 TRDA        0.00  TRANSPOSITION DRAINAGE AREA

 35 PI         PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                 0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00

 45 JD       INDEX STORM NO. 2
                 STRM        3.27  PRECIPITATION DEPTH
                 TRDA       10.00  TRANSPOSITION DRAINAGE AREA

  0 PI         PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                 0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00

 46 JD       INDEX STORM NO. 3
                 STRM        3.09  PRECIPITATION DEPTH
                 TRDA       30.00  TRANSPOSITION DRAINAGE AREA

  0 PI         PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                 0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00

 47 JD       INDEX STORM NO. 4
                 STRM        2.99  PRECIPITATION DEPTH
                 TRDA       60.00  TRANSPOSITION DRAINAGE AREA

  0 PI         PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                 0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
```

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                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

48 JD         INDEX STORM NO. 5
                  STRM        2.93  PRECIPITATION DEPTH
                  TRDA       90.00  TRANSPOSITION DRAINAGE AREA

 0 PI          PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN     MAXIMUM     TIME OF
        OPERATION        STATION          FLOW     PEAK                                          AREA      STAGE     MAX STAGE
+                                                            6-HOUR     24-HOUR     72-HOUR
        HYDROGRAPH AT
+                           A58          1503.   12.67         237.        72.         35.       2.13
        HYDROGRAPH AT
+                           A59          1229.   12.50         151.        46.         22.       1.25
        2 COMBINED AT
+                          CPA59         2454.   12.50         387.       117.         57.       3.39
        ROUTED TO
+                         RCPA59         2006.   12.83         386.       117.         57.       3.39
        HYDROGRAPH AT
+                           A60A          917.   12.50         104.        30.         14.       0.96
        2 COMBINED AT
+                         CPA60A         2265.   12.67         488.       146.         71.       4.35

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

100-Year 6-Hour Storm Study Area 3 HEC-1 Model

	Area (sq mi)	Unit Peak (cfs / sq mi)	Q (cfs)
J27A	0.544	764	416
J27B	1.003	764	766

	100-Year 6-Hour		
J27	1.417	764	1083
	100-Year 24-Hour		
J27	1.417	716	1015

```
1****************************************                                                    ****************************************
 *                                      *                                                    *                                      *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                                    *    U.S. ARMY CORPS OF ENGINEERS      *
 *              JUN   1998              *                                                    *    HYDROLOGIC ENGINEERING CENTER     *
 *            VERSION 4.1               *                                                    *          609 SECOND STREET           *
 *                                      *                                                    *       DAVIS, CALIFORNIA 95616        *
 *  RUN DATE   05OCT12  TIME  13:50:39  *                                                    *           (916) 756-1104             *
 *                                      *                                                    *                                      *
 ****************************************                                                    ****************************************

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

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

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

1                                                   HEC-1 INPUT                                                          PAGE  1

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

           1          ID        Flood Control District of Maricopa County
           2          ID        SUB BASIN J and X - Rainbow Valley ADMP
           3          ID        Major Basin: J and X
           4          ID        100 Year - Return Period
           5          ID        6 Hour Storm
           6          ID        Multiple Storms
           7          ID        Unit Hydrograph: S-Graph
           8          ID        08/20/2010
           9          IT      10  1JAN99    1200     300
          10          IN      15
          11          IO       5
                      *DIAGRAM
                      *
          12          JD   2.668  0.0001
          13          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
          14          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
          15          PC   0.962   0.972   0.983   0.991   1.000
          16          JD   2.652  0.5000
          17          PC   0.000   0.008   0.016   0.025   0.033   0.041   0.050   0.058   0.066   0.074
          18          PC   0.087   0.099   0.118   0.138   0.216   0.377   0.834   0.911   0.931   0.950
          19          PC   0.962   0.972   0.983   0.991   1.000
          20          JD   2.601     2.8
          21          PC   0.000   0.009   0.016   0.025   0.034   0.042   0.051   0.059   0.067   0.076
          22          PC   0.087   0.100   0.120   0.163   0.252   0.451   0.694   0.837   0.900   0.938
          23          PC   0.950   0.963   0.975   0.988   1.000
          24          JD   2.460    16.0
          25          PC   0.000   0.015   0.020   0.030   0.048   0.063   0.076   0.090   0.105   0.119
          26          PC   0.135   0.152   0.175   0.222   0.304   0.472   0.670   0.796   0.868   0.912
          27          PC   0.946   0.960   0.973   0.987   1.000
          28          JD   2.161    90.0
          29          PC   0.000   0.021   0.035   0.051   0.071   0.087   0.105   0.125   0.143   0.160
          30          PC   0.179   0.201   0.232   0.281   0.364   0.500   0.658   0.773   0.841   0.888
          31          PC   0.927   0.945   0.964   0.982   1.000
                      *
                      *

          32          KK     J04   BASIN
          33          BA   0.394
          34          LG    0.10    0.25    5.10    0.42       5
          35          UI       0     546     858     106       0       0       0       0       0       0
          36          UI       0       0       0       0       0       0       0       0       0       0
          37          UI       0       0       0       0       0       0       0       0       0       0
          38          UI       0       0       0       0       0       0       0       0       0       0
          39          UI       0       0       0       0       0       0       0       0       0       0
                      *
                      *

          40          KK    DJ04
          41          KM      Divert flow from J04
          42          KM        Natural divergence of flow due to a braided channel network.
          43          DT   DVJ04
          44          DI       0      20     138     583    1604    3366
          45          DQ       0       0      28     228     694    1864
                      *
                      *
1                                                   HEC-1 INPUT                                                          PAGE  2

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

          46          KK  RCPJ04
          47          KM        Route remainder flow from Basin J04 to CPJ07
          48          RS       7    FLOW      -1
          49          RC   0.050   0.045   0.050    7992  0.0149
          50          RX       0     100     125     150     160     175     200     300
          51          RY    1143    1142    1142    1142    1142    1142    1142    1143
                      *
                      *
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                 *

 52              KK     J07   BASIN
 53              BA   0.452
 54              LG    0.15    0.27    4.00    0.68       4
 55              UI       0     401     984     309      47       0       0       0       0       0
 56              UI       0       0       0       0       0       0       0       0       0       0
 57              UI       0       0       0       0       0       0       0       0       0       0
 58              UI       0       0       0       0       0       0       0       0       0       0
 59              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

 60              KK   CPJ07
 61              KM        Combine Basin J07 with RDJ04
 62              HC       1   0.694
                 *
                 *

 63              KK  RCPJ07
 64              KM        Route remainder flow from Basin J07 to CPJ11
 65              RS       3    FLOW      -1
 66              RC   0.050   0.045   0.050     630  0.0045
 67              RX       0      20      30     230     430     630     830    1030
 68              RY    1513    1513    1506  1508.8  1511.6  1514.4  1517.2    1520
                 *
                 *
                 *

 69              KK     J11   BASIN
 70              BA   0.244
 71              LG    0.35    0.35    4.10    0.44       0
 72              UI       0     257     548     122       0       0       0       0       0       0
 73              UI       0       0       0       0       0       0       0       0       0       0
 74              UI       0       0       0       0       0       0       0       0       0       0
 75              UI       0       0       0       0       0       0       0       0       0       0
 76              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

 77              KK   CPJ11
 78              KM        Combine Basin J11 with RCPJ07
 79              HC       1    .938
                 *
                 *
1                                          HEC-1 INPUT                                          PAGE  3

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

 80              KK  RCPJ11
 81              KM        Route remainder flow from Basin J11 to CPJ16
 82              RS       5    FLOW      -1
 83              RC   0.050   0.045   0.050     630  0.0045
 84              RX       0      20      30     230     430     630     830    1030
 85              RY    1513    1513    1506  1508.8  1511.6  1514.4  1517.2    1520
                 *

 86              KK     J16   BASIN
 87              BA   0.269
 88              LG    0.35    0.35    4.55    0.34       2
 89              UI       0     202     553     233      42       0       0       0       0       0
 90              UI       0       0       0       0       0       0       0       0       0       0
 91              UI       0       0       0       0       0       0       0       0       0       0
 92              UI       0       0       0       0       0       0       0       0       0       0
 93              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

 94              KK   CPJ16
 95              KM        Combine Basin J16 with RCPJ11
 96              HC       2   1.207
                 *

 97              KK  RCPJ16
 98              KM        Route flow from CPJ16 to CPJ20
 99              RS       3    FLOW      -1
100              RC   0.050   0.045   0.050    4489  0.0033
101              RX       0      50     100     115     200     234     338     400
102              RY  1025.3  1021.4  1017.5    1016  1020.3    1022  1027.5    1028
                 *
                 *

103              KK   DRJ04
104              KM        Return diverted flow from Basin J04
105              DR   DVJ04
                 *

106              KK   RDJ04
107              KM        Route remainder flow from Basin J04 to CPJ06
108              RS       7    FLOW      -1
109              RC   0.050   0.045   0.050    6166  0.0144
110              RX       0      80     112     179     250     352     389     421
111              RY  1202.7    1202  1201.8    1202  1202.3 1202.53  1202.6  1202.7
                 *
                 *

112              KK     J06   BASIN
113              BA   0.369
114              LG    0.10    0.25    4.00    0.74       5
115              UI       0     547     779      92       0       0       0       0       0       0
116              UI       0       0       0       0       0       0       0       0       0       0
117              UI       0       0       0       0       0       0       0       0       0       0
118              UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                          PAGE  4
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 119          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 120          KK   CPJ06
 121          KM        Combine  RCPJ04 with Basin J06
 122          HC       2   0.517
              *
              *
              *

 123          KK  RCPJ06
 124          KM        Route flow from Basin J06 to CPJ10
 125          KM        This Route is a typical section for Sheet Flow Route
 126          RS       3    FLOW      -1
 127          RC   0.050   0.045   0.050    4851  0.0109
 128          RX       0     500     700     750     800     900    1100    1600
 129          RY       6       4       2       0       0       2       4       6
              *
              *
              *

 130          KK     J10   BASIN
 131          BA   0.295
 132          LG    0.31    0.33    4.00    0.50       1
 133          UI       0     281     653     180      26       0       0       0       0       0
 134          UI       0       0       0       0       0       0       0       0       0       0
 135          UI       0       0       0       0       0       0       0       0       0       0
 136          UI       0       0       0       0       0       0       0       0       0       0
 137          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 138          KK   CPJ10
 139          KM        Combine Basin J10 with RCPJ06
 140          HC       2   0.812
              *
              *
              *

 141          KK  RCPJ10
 142          KM        Route flow from Basin J10 to CPJ15
 143          RS       7    FLOW      -1
 144          RC   0.050   0.045   0.050    7255  0.0092
 145          RX       0     190     322     350     477     616     620     650
 146          RY  1045.3  1044.9  1043.4 1043.45  1043.5    1045    1045    1045
              *
              *
              *
```



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

 147          KK     J15   BASIN
 148          BA   0.576
 149          LG    0.35    0.35    4.55    0.34       6
 150          UI       0     351    1057     638     144      34       0       0       0       0
 151          UI       0       0       0       0       0       0       0       0       0       0
 152          UI       0       0       0       0       0       0       0       0       0       0
 153          UI       0       0       0       0       0       0       0       0       0       0
 154          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 155          KK   CPJ15
 156          KM        Combine Basin J15 with RCPJ10
 157          HC       2   1.388
              *
              *

 158          KK  RCPJ15
 159          KM        Route flow from CPJ15 to cPJ20
 160          RS       4    FLOW      -1
 161          RC   0.050   0.045   0.050    4673  0.0028
 162          RX       0      36      80     158     393     405     410     411
 163          RY    1022    1020  1018.2    1014    1023  1023.9  1024.1  1024.2
              *
              *

 164          KK     J08   BASIN
 165          BA   0.096
 166          LG    0.10    0.25    5.70    0.32       5
 167          UI       0     227     137       0       0       0       0       0       0       0
 168          UI       0       0       0       0       0       0       0       0       0       0
 169          UI       0       0       0       0       0       0       0       0       0       0
 170          UI       0       0       0       0       0       0       0       0       0       0
 171          UI       0       0       0       0       0       0       0       0       0       0
              *

 172          KK  RCPJ08
 173          KM        Route flow from Basin J08 to CPJ12
 174          RS       7    FLOW      -1
 175          RC   0.050   0.045   0.050    8094  0.0141
 176          RX       0      25      50     144     200     205     208     304
 177          RY  1152.9 1152.75  1152.5  1151.7 1511.95 1151.98    1152  1152.8
              *

 178          KK     J12   BASIN
 179          BA   0.411
 180          LG    0.19    0.29    4.25    0.57       3
 181          UI       0     250     754     455     103      24       0       0       0       0
 182          UI       0       0       0       0       0       0       0       0       0       0
 183          UI       0       0       0       0       0       0       0       0       0       0
```

```
 184          UI       0       0       0       0       0       0       0       0       0       0
 185          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
1                                          HEC-1 INPUT                                                PAGE  6

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

 186          KK   CPJ12
 187          KM        Combine Basin J12 with RCPJ08
 188          HC       2
              *
              *

 189          KK  RCPJ12
 190          KM        Route flow from Basin J12 to CPJ17
 191          RS       7    FLOW      -1
 192          RC   0.050   0.045   0.050    6817  0.0092
 193          RX       0     580     685     728     841     943     990    1500
 194          RY  1068.4  1067.2 1066.67  1066.8  1066.7  1067.2  1067.5 1068.52
              *

 195          KK     J13   BASIN
 196          BA   0.859
 197          LG    0.15    0.27    4.30    0.60       4
 198          UI       0     366    1140    1189     454     124      42       0       0       0
 199          UI       0       0       0       0       0       0       0       0       0       0
 200          UI       0       0       0       0       0       0       0       0       0       0
 201          UI       0       0       0       0       0       0       0       0       0       0
 202          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 203          KK  RCPJ13
 204          KM        Route flow from Basin J13 to CPJ17
 205          RS       5    FLOW      -1
 206          RC   0.050   0.045   0.050    6791  0.0081
 207          RX       0      45      60      80      83     186     315     316
 208          RY  1077.3  1076.6    1076    1075    1075    1076  1077.2  1077.2
              *

 209          KK     J17   BASIN
 210          BA   0.522
 211          LG    0.35    0.35    4.35    0.39       0
 212          UI       0     183     540     769     368     109      31       0       0       0
 213          UI       0       0       0       0       0       0       0       0       0       0
 214          UI       0       0       0       0       0       0       0       0       0       0
 215          UI       0       0       0       0       0       0       0       0       0       0
 216          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 217          KK   CPJ17
 218          KM        Combine Basin J17 with RCPJ12 and RCPJ13
 219          HC       3
              *
              *
              *
1                                          HEC-1 INPUT                                                PAGE  7

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

 220          KK  RCPJ17
 221          KM        Route flow from CPJ17 to CPJ20
 222          RS       3    FLOW      -1
 223          RC   0.050   0.045   0.050    4419   0.005
 224          RX       0      54     161     168     279     368     435     440
 225          RY  1012.7 1011.26 1010.08    1010    1010    1013  1015.6  1015.6
              *
              *

 226          KK     J20   BASIN
 227          BA   0.715
 228          LG    0.28    0.30    6.00    0.20      58
 229          UI       0     680    1582     436      64       0       0       0       0       0
 230          UI       0       0       0       0       0       0       0       0       0       0
 231          UI       0       0       0       0       0       0       0       0       0       0
 232          UI       0       0       0       0       0       0       0       0       0       0
 233          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 234          KK   CPJ20
 235          KM        Combine Basin J20 with RCPJ17, RCPJ16, RCPJ15
 236          HC       4
              *
              *

 237          KK  RCPJ20
 238          KM        Route flow from CPJ20 to CPJ22
 239          RS       2    FLOW      -1
 240          RC   0.050   0.045   0.050    5772  0.0069
 241          RX       0      39      62     169     170     222     316     317
 242          RY   995.7     996   993.8     990     990   992.6   997.5   997.5
              *
              *

 243          KK     J18   BASIN
 244          BA   0.857
 245          LG    0.32    0.33    4.40    0.41       4
 246          UI       0     309     919    1256     582     176      46       0       0       0
 247          UI       0       0       0       0       0       0       0       0       0       0
 248          UI       0       0       0       0       0       0       0       0       0       0
 249          UI       0       0       0       0       0       0       0       0       0       0
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 250          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 251          KK  RCPJ18
 252          KM        Route flow from CPJ18 to CPJ21
 253          RS       3    FLOW      -1
 254          RC   0.050   0.045   0.050    5109  0.0057
 255          RX       0      86     103     110     200     212     254     255
 256          RY  1025.3    1024    1023  1023.4    1026  1026.5    1027    1027
              *
              *
1                                          HEC-1 INPUT                                                PAGE  8

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

 257          KK     J21   BASIN
 258          BA   0.251
 259          LG    0.26    0.26    4.55    0.42      43
 260          UI       0     286     566     104       0       0       0       0       0       0
 261          UI       0       0       0       0       0       0       0       0       0       0
 262          UI       0       0       0       0       0       0       0       0       0       0
 263          UI       0       0       0       0       0       0       0       0       0       0
 264          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 265          KK   CPJ21
 266          KM        Combine Basin J21 with RCPJ18
 267          HC       2
              *
              *
              *

 268          KK  RCPJ21
 269          KM        Route flow from CPJ21 to CPJ22
 270          RS       4    FLOW      -1
 271          RC   0.050   0.045   0.050    6057  0.0054
 272          RX       0      39      62     169     170     171     222     316
 273          RY   995.7     996   993.8     990     990     990  992.57   997.5
              *

 274          KK     J22   BASIN
 275          BA   1.503
 276          LG    0.30    0.32    5.20    0.29      31
 277          UI       0     261     826    1456    1581     943     422     198      61      49
 278          UI       0       0       0       0       0       0       0       0       0       0
 279          UI       0       0       0       0       0       0       0       0       0       0
 280          UI       0       0       0       0       0       0       0       0       0       0
 281          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 282          KK   CPJ22
 283          KM        Combine Basin J22 with RCPJ21 and RCPJ20
 284          HC       3
              *
              *

 285          KK  RCPJ22
 286          KM        Route flow from CPJ22 to CPJ39
 287          RS       4    FLOW      -1
 288          RC   0.050   0.045   0.050   11989  0.0073
 289          RX       0      66     139     159     199     297     309     428
 290          RY   945.4   944.6   940.7  936.95     938     938   939.5   945.9
              *
              *
1                                          HEC-1 INPUT                                                PAGE  9

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

 291          KK     J39   BASIN
 292          BA   1.046
 293          LG    0.32    0.32    4.65    0.33      10
 294          UI       0     156     514     846    1133     709     389     162      74      32
 295          UI      32       0       0       0       0       0       0       0       0       0
 296          UI       0       0       0       0       0       0       0       0       0       0
 297          UI       0       0       0       0       0       0       0       0       0       0
 298          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 299          KK     J40   BASIN
 300          BA   0.900
 301          LG    0.33    0.33    4.90    0.29      19
 302          UI       0     468    1469    1118     324      74       0       0       0       0
 303          UI       0       0       0       0       0       0       0       0       0       0
 304          UI       0       0       0       0       0       0       0       0       0       0
 305          UI       0       0       0       0       0       0       0       0       0       0
 306          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 307          KK  RCPJ40
 308          KM        Route flow from CPJ40 to CPJ39
 309          RS       1    FLOW      -1
 310          RC   0.050   0.045   0.050     608  0.0132
 311          RX       0       0      25      34      50      81      95     120
 312          RY   888.2  888.15  882.97   883.2   882.7   881.8  883.75     887
              *
              *

 313          KK   CPJ39
 314          KM        Combine Basin J39 with RCPJ22 and RCPJ40
```

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 315          HC       3
              *
              *

 316          KK     J27   BASIN
 317          BA   1.417
 318          LG    0.30    0.27    4.80    0.30      12
 319          UI       0     116     461     692    1085    1197     809     547     256     152
 320          UI      77      34      34       0       0       0       0       0       0       0
 321          UI       0       0       0       0       0       0       0       0       0       0
 322          UI       0       0       0       0       0       0       0       0       0       0
              *

 323          KK     J28   BASIN
 324          BA   0.950
 325          LG    0.32    0.31    4.70    0.31      10
 326          UI       0     146     477     795    1026     635     336     143      62      29
 327          UI      29       0       0       0       0       0       0       0       0       0
 328          UI       0       0       0       0       0       0       0       0       0       0
 329          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
1                                          HEC-1 INPUT                                          PAGE 10

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

 330          KK   CPJ27
 331          KM        Combine Basin J27 and J28
 332          HC       2
              *
              *

 333          KK  RCPJ27
 334          KM        Route flow from Basins J27 and J28 to CPJ37
 335          RS       1    FLOW      -1
 336          RC   0.050   0.045   0.050    1992  0.0065
 337          RX       0      87     129     169     197     279     400     600
 338          RY   888.4   885.7   884.6   881.2   882.1   884.9   885.9   886.9
              *
              *

 339          KK     J37   BASIN
 340          BA   0.813
 341          LG    0.33    0.31    4.60    0.33       5
 342          UI       0     119     393     640     883     557     314     128      60      25
 343          UI      25       0       0       0       0       0       0       0       0       0
 344          UI       0       0       0       0       0       0       0       0       0       0
 345          UI       0       0       0       0       0       0       0       0       0       0
 346          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 347          KK   CPJ37
 348          KM        Combine Basin J37 and RCPJ27
 349          HC       2
              *
              *

 350          KK     J36   BASIN
 351          BA   0.526
 352          LG    0.31    0.27    4.90    0.28       8
 353          UI       0     152     446     749     437     164      55      22       0       0
 354          UI       0       0       0       0       0       0       0       0       0       0
 355          UI       0       0       0       0       0       0       0       0       0       0
 356          UI       0       0       0       0       0       0       0       0       0       0
 357          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 358          KK     J38   BASIN
 359          BA   2.079
 360          LG    0.24    0.29    4.65    0.30      15
 361          UI       0     543    1614    2842    1818     782     298      81       0       0
 362          UI       0       0       0       0       0       0       0       0       0       0
 363          UI       0       0       0       0       0       0       0       0       0       0
 364          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
1                                          HEC-1 INPUT                                          PAGE 11

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

 365          KK     J41   BASIN
 366          BA   0.182
 367          LG    0.14    0.14    4.45    0.31      19
 368          UI       0     668       0       0       0       0       0       0       0       0
 369          UI       0       0       0       0       0       0       0       0       0       0
 370          UI       0       0       0       0       0       0       0       0       0       0
 371          UI       0       0       0       0       0       0       0       0       0       0
 372          UI       0       0       0       0       0       0       0       0       0       0
              *

 373          KK     J42   BASIN
 374          BA   0.201
 375          LG    0.33    0.33    4.35    0.38      31
 376          UI       0     674       0       0       0       0       0       0       0       0
 377          UI       0       0       0       0       0       0       0       0       0       0
 378          UI       0       0       0       0       0       0       0       0       0       0
 379          UI       0       0       0       0       0       0       0       0       0       0
 380          UI       0       0       0       0       0       0       0       0       0       0
              *

 381          KK  DUMMY1
 382          KM        Combine Basins J36,J38,J41,J42 AND CONCENTRATION POINTS CPJ37 AND CPJ39
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```
383          HC       6
             *

384          KK     J01   BASIN
385          BA   7.184
386          LG    0.10    0.25    4.25    0.66      35
387          UI       0    2728    8239   10428    4513    1372     336       0       0       0
388          UI       0       0       0       0       0       0       0       0       0       0
389          UI       0       0       0       0       0       0       0       0       0       0
390          UI       0       0       0       0       0       0       0       0       0       0
391          UI       0       0       0       0       0       0       0       0       0       0
             *

392          KK  RCPJ01
393          KM        Route flow from Basin J01 to CPJ14
394          RS       4    FLOW      -1
395          RC   0.050   0.045   0.050   11561  0.0099
396          RX       0      91     247     344     395     491     568     616
397          RY  1100.8  1100.6 1098.25  1098.6  1096.7  1097.3  1102.5  1102.8
             *
             *

398          KK     J14   BASIN
399          BA   2.126
400          LG    0.19    0.29    4.30    0.55      23
401          UI       0     546    1627    2883    1875     823     317      83       0       0
402          UI       0       0       0       0       0       0       0       0       0       0
403          UI       0       0       0       0       0       0       0       0       0       0
404          UI       0       0       0       0       0       0       0       0       0       0
405          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

406          KK     J25   BASIN
407          BA   0.518
408          LG    0.24    0.31    4.30    0.50      54
409          UI       0     275     860     636     178      40       0       0       0       0
410          UI       0       0       0       0       0       0       0       0       0       0
411          UI       0       0       0       0       0       0       0       0       0       0
412          UI       0       0       0       0       0       0       0       0       0       0
413          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

414          KK  RCPJ25
415          KM        Route flow from Basin J25 to CPJ14
416          RS       3    FLOW      -1
417          RC   0.050   0.045   0.050    1255  0.0135
418          RX       0       6      52     155     287     339     351     356
419          RY    1038    1038  1036.3  1035.1    1038    1038  1038.4  1038.6
             *
             *

420          KK   CPJ14
421          KM        Combine Basin J14, RCPJ25, and RCPJ01
422          HC       3
             *
             *
             *

423          KK  RCPJ14
424          KM        Route flow from CPJ14 to CP J23
425          RS       1    FLOW      -1
426          RC   0.050   0.045   0.050    3192  0.0116
427          RX       0      14     210     230     270     290     490     504
428          RY    1018 1015.25    1013    1010    1010    1013 1015.25    1018
             *
             *
             *

429          KK     J19   BASIN
430          BA   0.104
431          LG    0.35    0.35    4.45    0.37       2
432          UI       0      90     225      74      11       0       0       0       0       0
433          UI       0       0       0       0       0       0       0       0       0       0
434          UI       0       0       0       0       0       0       0       0       0       0
435          UI       0       0       0       0       0       0       0       0       0       0
436          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

437          KK  RCPJ19
438          KM        Route flow from CPJ19 to CPJ23
439          RS       5    FLOW      -1
440          RC   0.050   0.045   0.050    5003  0.0072
441          RX       0     100     190     220     250     280     370     470
442          RY    1000     999     998     997     997     998     999    1000
             *
             *
             *
             *
```



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

443          KK     J24   BASIN
444          BA   0.193
445          LG    0.35    0.39    5.70    0.20       5
446          UI       0     487     248       0       0       0       0       0       0       0
447          UI       0       0       0       0       0       0       0       0       0       0
448          UI       0       0       0       0       0       0       0       0       0       0
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449          UI       0       0       0       0       0       0       0       0       0       0
450          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
             *

451          KK  RCPJ24
452          KM        Route flow from CPJ24 to CPJ23
453          RS       1    FLOW      -1
454          RC   0.050   0.045   0.050    2069  0.0193
455          RX       0      90     200     210     230     240     310     420
456          RY    1027    1025    1023    1020    1020    1023    1025    1027
             *
             *

457          KK     J23   BASIN
458          BA   0.308
459          LG    0.29    0.30    4.55    0.38      22
460          UI       0     168     524     371      99      22       0       0       0       0
461          UI       0       0       0       0       0       0       0       0       0       0
462          UI       0       0       0       0       0       0       0       0       0       0
463          UI       0       0       0       0       0       0       0       0       0       0
464          UI       0       0       0       0       0       0       0       0       0       0
             *

465          KK   CPJ23
466          KM        Combine Basin J23, RCPJ27, RCPJ24, and RCPJ19
467          HC       4
             *
             *
             *

468          KK  RCPJ23
469          KM        Route flow from Basin J23 to CPJ29A
470          RS       1    FLOW      -1
471          RC   0.050   0.045   0.050    5917  0.0101
472          RX       0      45      68     124     135     150     167     252
473          RY   977.5  977.35  977.25   974.6   974.5   974.4   975.5   980.9
             *

474          KK    J29A   BASIN
475          BA   0.340
476          LG    0.29    0.29    4.70    0.35      18
477          UI       0      90     266     467     296     126      48      13       0       0
478          UI       0       0       0       0       0       0       0       0       0       0
479          UI       0       0       0       0       0       0       0       0       0       0
480          UI       0       0       0       0       0       0       0       0       0       0
481          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
```



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

482          KK    J29D   BASIN
483          BA   0.434
484          LG    0.26    0.29    5.20    0.30      34
485          UI       0     788     810      79       0       0       0       0       0       0
486          UI       0       0       0       0       0       0       0       0       0       0
487          UI       0       0       0       0       0       0       0       0       0       0
488          UI       0       0       0       0       0       0       0       0       0       0
489          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

490          KK  RCJ29D
491          KM        Route flow from Basin J29D to CPJ29A
492          RS       1    FLOW      -1
493          RC   0.050   0.045   0.050    2171  0.0157
494          RX       0      26     130     190     274     408     430     432
495          RY   964.5     965     960   952.3     960  972.54  973.25  973.25
             *
             *

496          KK    J29C   BASIN
497          BA   1.001
498          LG    0.31    0.33    4.65    0.34      26
499          UI       0     578    1770    1159     290      58       0       0       0       0
500          UI       0       0       0       0       0       0       0       0       0       0
501          UI       0       0       0       0       0       0       0       0       0       0
502          UI       0       0       0       0       0       0       0       0       0       0
503          UI       0       0       0       0       0       0       0       0       0       0
             *

504          KK  RCJ29C
505          KM        Route flow from Basin J29C to CPJ29A
506          RS       1    FLOW      -1
507          RC   0.050   0.045   0.050    1816  0.0171
508          RX       0      45      68     124     135     150     167     252
509          RY   977.5  977.35  977.25   974.6   974.5   974.4   975.5   980.9
             *

510          KK    J29B   BASIN
511          BA   0.146
512          LG    0.32    0.33    4.30    0.42      35
513          UI       0     259     277      28       0       0       0       0       0       0
514          UI       0       0       0       0       0       0       0       0       0       0
515          UI       0       0       0       0       0       0       0       0       0       0
516          UI       0       0       0       0       0       0       0       0       0       0
517          UI       0       0       0       0       0       0       0       0       0       0
             *

518          KK  CPJ29A
519          KM        Combine Basin J29A and J29B with RCJ29C, RCJ29D, and RCPJ23
520          HC       5
```

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

  521         KK  RCJ29A
  522         KM        Route flow from CPJ29A to CPJ43A
  523         RS       2    FLOW     -1
  524         RC   0.050   0.045   0.050    6019  0.0086
  525         RX       0     118     141     144     145     146     232     419
  526         RY     941   935.6     934     934     934     934   936.6   940.6
              *

  527         KK    J43A   BASIN
  528         BA   0.365
  529         LG    0.30    0.30    4.45    0.41      22
  530         UI       0     409     823     158       0       0       0       0       0       0
  531         UI       0       0       0       0       0       0       0       0       0       0
  532         UI       0       0       0       0       0       0       0       0       0       0
  533         UI       0       0       0       0       0       0       0       0       0       0
  534         UI       0       0       0       0       0       0       0       0       0       0
              *

  535         KK    J43B   BASIN
  536         BA   0.108
  537         LG    0.29    0.29    4.45    0.41      41
  538         UI       0     196     202      20       0       0       0       0       0       0
  539         UI       0       0       0       0       0       0       0       0       0       0
  540         UI       0       0       0       0       0       0       0       0       0       0
  541         UI       0       0       0       0       0       0       0       0       0       0
  542         UI       0       0       0       0       0       0       0       0       0       0
              *
              *

  543         KK  RCJ43B
  544         KM        Route flow from Basin J43B to CPJ43A
  545         RS       1    FLOW     -1
  546         RC   0.050   0.045   0.050    2527  0.0119
  547         RX       0      45      83     102     116     232     233     234
  548         RY   918.7   915.5  913.14  909.95  910.55  916.06  916.06  916.06
              *
              *

  549         KK    J43C   BASIN
  550         BA   0.122
  551         LG    0.29    0.31    4.55    0.39      24
  552         UI       0     450       0       0       0       0       0       0       0       0
  553         UI       0       0       0       0       0       0       0       0       0       0
  554         UI       0       0       0       0       0       0       0       0       0       0
  555         UI       0       0       0       0       0       0       0       0       0       0
  556         UI       0       0       0       0       0       0       0       0       0       0
              *

  557         KK  RCJ43C
  558         KM        Route flow from Basin J43C to CPJ43A
  559         RS       3    FLOW     -1
  560         RC   0.050   0.045   0.050    4797  0.0113
  561         RX       0      37     135     157     159     315     413     414
  562         RY   936.3   933.8   923.9   922.1   922.2   931.9   934.8  934.81
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  563         KK  CPJ43A
  564         KM        Combine Basin J43A and RCJ43C, RCJ43B, and RCJ29A
  565         HC       4
              *

  566         KK     J30   BASIN
  567         BA   0.333
  568         LG    0.35    0.35    4.00    0.46      61
  569         UI       0     250     684     288      52       0       0       0       0       0
  570         UI       0       0       0       0       0       0       0       0       0       0
  571         UI       0       0       0       0       0       0       0       0       0       0
  572         UI       0       0       0       0       0       0       0       0       0       0
  573         UI       0       0       0       0       0       0       0       0       0       0
              *
              *

  574         KK  RCPJ30
  575         KM        Route flow from Basin J30 to CPJ46
  576         RS       2    FLOW     -1
  577         RC   0.050   0.045   0.050    8950  0.0200
  578         RX       0      25      50      60      70      80      90     100
  579         RY    1040    1038    1035    1030    1030    1035    1038    1040
              *
              *

  580         KK     J46   BASIN
  581         BA   0.564
  582         LG    0.35    0.35    4.60    0.33      29
  583         UI       0     210     634     821     364     112      26       0       0       0
  584         UI       0       0       0       0       0       0       0       0       0       0
  585         UI       0       0       0       0       0       0       0       0       0       0
  586         UI       0       0       0       0       0       0       0       0       0       0
              *
              *

  587         KK   CPJ46
  588         KM        Combine Basin J46 and RCPJ30
  589         HC       2
              *
```

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                 *

590              KK     J53   BASIN
591              BA   0.050
592              LG    0.35    0.35    4.55    0.34      25
593              UI       0     173       0       0       0       0       0       0       0       0
594              UI       0       0       0       0       0       0       0       0       0       0
595              UI       0       0       0       0       0       0       0       0       0       0
596              UI       0       0       0       0       0       0       0       0       0       0
597              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

598              KK  RCPJ53
599              KM        Route flow from Basin J53 to CPJ47
600              RS       5    FLOW      -1
601              RC   0.050   0.045   0.050    8651  0.0201
602              RX       0     160     305     320     335     350     400     440
603              RY     975     974     973     970     970     973     974     975
                 *
                 *

604              KK     J47   BASIN
605              BA   0.456
606              LG    0.35    0.35    4.90    0.28       1
607              UI       0     218     691     591     198      46       0       0       0       0
608              UI       0       0       0       0       0       0       0       0       0       0
609              UI       0       0       0       0       0       0       0       0       0       0
610              UI       0       0       0       0       0       0       0       0       0       0
611              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

612              KK   CPJ47
613              KM        Combine Basin J47 and RCPJ53 and RDJ30
614              HC       2
                 *
                 *

615              KK     J44   BASIN
616              BA   0.147
617              LG    0.33    0.33    4.70    0.32      10
618              UI       0     557       0       0       0       0       0       0       0       0
619              UI       0       0       0       0       0       0       0       0       0       0
620              UI       0       0       0       0       0       0       0       0       0       0
621              UI       0       0       0       0       0       0       0       0       0       0
622              UI       0       0       0       0       0       0       0       0       0       0
                 *

623              KK     J45   BASIN
624              BA   0.322
625              LG    0.32    0.32    4.60    0.35      37
626              UI       0     532     641      68       0       0       0       0       0       0
627              UI       0       0       0       0       0       0       0       0       0       0
628              UI       0       0       0       0       0       0       0       0       0       0
629              UI       0       0       0       0       0       0       0       0       0       0
630              UI       0       0       0       0       0       0       0       0       0       0
                 *

631              KK     J49   BASIN
632              BA   0.191
633              LG    0.45    0.29    4.25    0.56      14
634              UI       0      91     290     248      83      19       0       0       0       0
635              UI       0       0       0       0       0       0       0       0       0       0
636              UI       0       0       0       0       0       0       0       0       0       0
637              UI       0       0       0       0       0       0       0       0       0       0
638              UI       0       0       0       0       0       0       0       0       0       0
                 *
1                                                HEC-1 INPUT                                                PAGE 18

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

639              KK     J50   BASIN
640              BA   0.588
641              LG    0.37    0.34    4.10    0.48      47
642              UI       0     592    1313     326      45       0       0       0       0       0
643              UI       0       0       0       0       0       0       0       0       0       0
644              UI       0       0       0       0       0       0       0       0       0       0
645              UI       0       0       0       0       0       0       0       0       0       0
646              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

647              KK  DUMMY2
648              KM        Combine Hydrographs to prevent an error in output.
649              HC       8
                 *

650              KK     J31   BASIN
651              BA   0.454
652              LG    0.27    0.32    4.00    0.55      61
653              UI       0     279     839     498     110      27       0       0       0       0
654              UI       0       0       0       0       0       0       0       0       0       0
655              UI       0       0       0       0       0       0       0       0       0       0
656              UI       0       0       0       0       0       0       0       0       0       0
657              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *
                 *
```

```
 658          KK  RCPJ31
 659          KM        Route flow from Basin J31 to CPJ48
 660          RS       3    FLOW      -1
 661          RC   0.050   0.045   0.050    9063  0.0123
 662          RX       0      60     110     120     150     160     280     310
 663          RY     970     966     963     960     960     963     966     970
              *
              *

 664          KK     J32   BASIN
 665          BA   0.324
 666          LG    0.30    0.33    4.15    0.48      29
 667          UI       0     678     535       0       0       0       0       0       0       0
 668          UI       0       0       0       0       0       0       0       0       0       0
 669          UI       0       0       0       0       0       0       0       0       0       0
 670          UI       0       0       0       0       0       0       0       0       0       0
 671          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 672          KK  RCPJ32
 673          KM        Route flow from Basin J32 to CPJ48
 674          RS       3    FLOW      -1
 675          RC   0.050   0.045   0.050    8460  0.0122
 676          RX       0      60     110     120     150     160     280     310
 677          RY     970     966     963     960     960     963     966     970
              *
              *
              *
```



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

 678          KK     J48   BASIN
 679          BA   0.869
 680          LG    0.35    0.35    4.55    0.34      14
 681          UI       0     316     944    1271     583     177      44       0       0       0
 682          UI       0       0       0       0       0       0       0       0       0       0
 683          UI       0       0       0       0       0       0       0       0       0       0
 684          UI       0       0       0       0       0       0       0       0       0       0
 685          UI       0       0       0       0       0       0       0       0       0       0
              *

 686          KK   CPJ48
 687          KM        Combine Basin J48, RCPJ32 and RCPJ31
 688          HC       3
              *
              *

 689          KK     J26   BASIN
 690          BA   0.514
 691          LG    0.10    0.25    4.10    0.72      63
 692          UI       0    1524     451       0       0       0       0       0       0       0
 693          UI       0       0       0       0       0       0       0       0       0       0
 694          UI       0       0       0       0       0       0       0       0       0       0
 695          UI       0       0       0       0       0       0       0       0       0       0
 696          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 697          KK  RCPJ26
 698          KM        Route flow from Basin J26 to CPJ33
 699          RS       5    FLOW      -1
 700          RC   0.050   0.045   0.050   11383  0.0099
 701          RX       0     150     325     365     420     460     580     660
 702          RY    1013    1008    1004    1000    1000    1004    1008    1013
              *
              *

 703          KK     J33   BASIN
 704          BA   1.338
 705          LG    0.16    0.27    4.35    0.57      39
 706          UI       0     968    2703    1214     230       0       0       0       0       0
 707          UI       0       0       0       0       0       0       0       0       0       0
 708          UI       0       0       0       0       0       0       0       0       0       0
 709          UI       0       0       0       0       0       0       0       0       0       0
 710          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 711          KK   CPJ33
 712          KM        Combine Basin J33 and RCPJ26
 713          HC       2
              *
              *
              *
```



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

 714          KK  RCPJ33
 715          KM        Route flow from Basin J33 to CPJ34
 716          RS       1    FLOW      -1
 717          RC   0.050   0.045   0.050    2290  0.0057
 718          RX       0      40      85     105     180     200     310     420
 719          RY     950     942     935     930     930     935     937     940
              *

 720          KK     J34   BASIN
 721          BA   0.454
 722          LG    0.10    0.25    4.25    0.66      49
 723          UI       0    1346     399       0       0       0       0       0       0       0
 724          UI       0       0       0       0       0       0       0       0       0       0
 725          UI       0       0       0       0       0       0       0       0       0       0
```

```
726          UI       0       0       0       0       0       0       0       0       0       0
727          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

728          KK   CPJ34
729          KM        Combine Basin J34 and RCPJ33
730          HC       2
             *
             *
             *

731          KK  RCPJ34
732          KM        Route flow from Basin J34 to CPJ35
733          RS       1    FLOW      -1
734          RC   0.050   0.045   0.050     880  0.0069
735          RX       0      30      45      70     170     195     310     500
736          RY     940     930     925     920     920     925     928     930
             *

737          KK     J35   BASIN
738          BA   0.668
739          LG    0.13    0.26    4.45    0.56      20
740          UI       0     990    1409     166       0       0       0       0       0       0
741          UI       0       0       0       0       0       0       0       0       0       0
742          UI       0       0       0       0       0       0       0       0       0       0
743          UI       0       0       0       0       0       0       0       0       0       0
744          UI       0       0       0       0       0       0       0       0       0       0
             *

745          KK   CPJ35
746          KM        Combine Basin J35 and RCPJ34
747          HC       2
             *
             *
```



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

748          KK     J51   BASIN
749          BA   0.166
750          LG    0.34    0.34    4.00    0.48      61
751          UI       0     380     248       0       0       0       0       0       0       0
752          UI       0       0       0       0       0       0       0       0       0       0
753          UI       0       0       0       0       0       0       0       0       0       0
754          UI       0       0       0       0       0       0       0       0       0       0
755          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

756          KK  RCPJ51
757          KM        Route flow from Basin J51 to CPJ52
758          KM        This Route is a typical section for Sheet Flow Farmland
759          RS       2    FLOW      -1
760          RC   0.050   0.045   0.050    2201  0.0045
761          RX       0     500     600     620     720     740     840    1340
762          RY       5       3       1       0       0       1       3       5
             *

763          KK     J52   BASIN
764          BA   0.182
765          LG    0.46    0.28    4.45    0.51       5
766          UI       0      13      51      78     113     157     110      78      48      23
767          UI      15       6       4       4       0       0       0       0       0       0
768          UI       0       0       0       0       0       0       0       0       0       0
769          UI       0       0       0       0       0       0       0       0       0       0
770          UI       0       0       0       0       0       0       0       0       0       0
             *

771          KK   CPJ52
772          KM        Combine Basin J52 and RCPJ51
773          HC       2
             *
             *

774          KK     J54   BASIN
775          BA   0.219
776          LG    0.10    0.25    4.40    0.60      16
777          UI       0     667     177       0       0       0       0       0       0       0
778          UI       0       0       0       0       0       0       0       0       0       0
779          UI       0       0       0       0       0       0       0       0       0       0
780          UI       0       0       0       0       0       0       0       0       0       0
781          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

782          KK  DUMMY3
783          KM        Combine Hydrographs to eliminate errors in output.
784          HC       5
             *
             *
```



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

785          KK     X01   BASIN
786          BA   1.514
787          LG    0.10    0.25    4.50    0.57      48
788          UI       0    1441    3350     923     135       0       0       0       0       0
789          UI       0       0       0       0       0       0       0       0       0       0
790          UI       0       0       0       0       0       0       0       0       0       0
791          UI       0       0       0       0       0       0       0       0       0       0
792          UI       0       0       0       0       0       0       0       0       0       0
             *
```

```
                 *

793              KK  RCPX01
794              KM        Route flow from Basin X01 to CPX02
795              RS       1    FLOW      -1
796              RC   0.050   0.045   0.050    4035  0.0124
797              RX       0      59      91     191     252     319     419     475
798              RY   976.2     970     970     970     970   973.3   977.6     980
                 *

799              KK     X02   BASIN
800              BA   1.497
801              LG    0.18    0.28    4.50    0.50      45
802              UI       0     676    2132    2005     722     180      76       0       0       0
803              UI       0       0       0       0       0       0       0       0       0       0
804              UI       0       0       0       0       0       0       0       0       0       0
805              UI       0       0       0       0       0       0       0       0       0       0
806              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

807              KK   CPX02
808              KM        Combine Basin X02 and RCPX01
809              HC       2
                 *

810              KK     X03   BASIN
811              BA   1.003
812              LG    0.10    0.25    4.20    0.68      54
813              UI       0    2530    1288       0       0       0       0       0       0       0
814              UI       0       0       0       0       0       0       0       0       0       0
815              UI       0       0       0       0       0       0       0       0       0       0
816              UI       0       0       0       0       0       0       0       0       0       0
817              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

818              KK  RCPX03
819              KM        Route flow from Basin X03 to CPX04
820              RS       3    FLOW      -1
821              RC   0.050   0.045   0.050   12155  0.0177
822              RX       0     125     227     257     421     424     636     720
823              RY    1150    1120    1086    1080    1061    1060  1074.9    1080
                 *
1                                                HEC-1 INPUT                                                    PAGE 23

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

824              KK     X04   BASIN
825              BA   0.965
826              LG    0.21    0.28    4.65    0.41      39
827              UI       0     462    1463    1251     418      97       0       0       0       0
828              UI       0       0       0       0       0       0       0       0       0       0
829              UI       0       0       0       0       0       0       0       0       0       0
830              UI       0       0       0       0       0       0       0       0       0       0
831              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

832              KK   CPX04
833              KM        Combine Basin X04 and RCPX03
834              HC       2
                 *
                 *

835              KK     X14   BASIN
836              BA   0.193
837              LG    0.13    0.26    4.20    0.64      23
838              UI       0     257     425      56       0       0       0       0       0       0
839              UI       0       0       0       0       0       0       0       0       0       0
840              UI       0       0       0       0       0       0       0       0       0       0
841              UI       0       0       0       0       0       0       0       0       0       0
842              UI       0       0       0       0       0       0       0       0       0       0
                 *

843              KK     X15   BASIN
844              BA   0.194
845              LG    0.10    0.25    4.10    0.72      44
846              UI       0     552     191       0       0       0       0       0       0       0
847              UI       0       0       0       0       0       0       0       0       0       0
848              UI       0       0       0       0       0       0       0       0       0       0
849              UI       0       0       0       0       0       0       0       0       0       0
850              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

851              KK     X06   BASIN
852              BA   1.027
853              LG    0.15    0.27    4.30    0.58      41
854              UI       0     700    2013    1002     203       0       0       0       0       0
855              UI       0       0       0       0       0       0       0       0       0       0
856              UI       0       0       0       0       0       0       0       0       0       0
857              UI       0       0       0       0       0       0       0       0       0       0
858              UI       0       0       0       0       0       0       0       0       0       0
                 *

859              KK     X07   BASIN
860              KM        Customized XKSAT Values
861              BA   2.104
862              LG    0.11    0.25    3.95    0.74      56
863              UI       0     821    2496    3034    1268     377     100       0       0       0
864              UI       0       0       0       0       0       0       0       0       0       0
1                                                HEC-1 INPUT                                                    PAGE 24

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

```
865          UI       0       0       0       0       0       0       0       0       0       0
866          UI       0       0       0       0       0       0       0       0       0       0
867          UI       0       0       0       0       0       0       0       0       0       0
             *

868          KK     X05   BASIN
869          BA   0.316
870          LG    0.28    0.31    5.70    0.21       2
871          UI       0     128     394     448     180      52      15       0       0       0
872          UI       0       0       0       0       0       0       0       0       0       0
873          UI       0       0       0       0       0       0       0       0       0       0
874          UI       0       0       0       0       0       0       0       0       0       0
875          UI       0       0       0       0       0       0       0       0       0       0
             *

876          KK  DUMMY4
877          KM        Combine Hydrographs to eliminate errors in output.
878          HC       7
             *
             *

879          KK     X12   BASIN
880          BA   0.237
881          LG    0.10    0.25    4.00    0.74      51
882          UI       0     636     269       0       0       0       0       0       0       0
883          UI       0       0       0       0       0       0       0       0       0       0
884          UI       0       0       0       0       0       0       0       0       0       0
885          UI       0       0       0       0       0       0       0       0       0       0
886          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

887          KK  RCPX12
888          KM        Route flow from Basin X12 to CPX17
889          KM        This Route is a typical section for Sheet Flow Route
890          RS       1    FLOW      -1
891          RC   0.050   0.045   0.050    2076  0.0169
892          RX       0     500     700     750     800     900    1100    1600
893          RY       6       4       2       0       0       2       4       6
             *

894          KK     X16   BASIN
895          BA   0.277
896          LG    0.10    0.25    4.30    0.64      39
897          UI       0    1023       0       0       0       0       0       0       0       0
898          UI       0       0       0       0       0       0       0       0       0       0
899          UI       0       0       0       0       0       0       0       0       0       0
900          UI       0       0       0       0       0       0       0       0       0       0
901          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
```



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

902          KK  RCPX16
903          KM        Route flow from Basin X16 to CPX17
904          KM        This Route is a typical section for Sheet Flow Route
905          RS       2    FLOW      -1
906          RC   0.050   0.045   0.050    3886  0.0090
907          RX       0     500     700     750     800     900    1100    1600
908          RY       6       4       2       0       0       2       4       6
             *
             *

909          KK     X17   BASIN
910          BA   0.462
911          LG    0.12    0.26    4.65    0.46      74
912          UI       0    1165     593       0       0       0       0       0       0       0
913          UI       0       0       0       0       0       0       0       0       0       0
914          UI       0       0       0       0       0       0       0       0       0       0
915          UI       0       0       0       0       0       0       0       0       0       0
916          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

917          KK   CPX17
918          KM        Combine Basin X17 and RCPX16 and RCPX12
919          HC       3
             *
             *

920          KK     X18   BASIN
921          BA   0.413
922          LG    0.21    0.29    4.60    0.42      38
923          UI       0     880     669       0       0       0       0       0       0       0
924          UI       0       0       0       0       0       0       0       0       0       0
925          UI       0       0       0       0       0       0       0       0       0       0
926          UI       0       0       0       0       0       0       0       0       0       0
927          UI       0       0       0       0       0       0       0       0       0       0
             *

928          KK     X11   BASIN
929          BA   0.295
930          LG    0.10    0.25    4.55    0.55      28
931          UI       0     733     390       0       0       0       0       0       0       0
932          UI       0       0       0       0       0       0       0       0       0       0
933          UI       0       0       0       0       0       0       0       0       0       0
934          UI       0       0       0       0       0       0       0       0       0       0
935          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

936          KK     X13   BASIN
```

```
 937          BA   3.723
 938          LG    0.10    0.25    4.20    0.68      34
 939          UI       0    1305    3852    5486    2626     780     221       0       0       0
 940          UI       0       0       0       0       0       0       0       0       0       0
 941          UI       0       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                                PAGE 26

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

 942          UI       0       0       0       0       0       0       0       0       0       0
 943          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 944          KK     X08   BASIN
 945          KM         Customized XKSAT Values
 946          BA   0.395
 947          LG    0.10    0.25    3.95    0.76      70
 948          UI       0    1325       0       0       0       0       0       0       0       0
 949          UI       0       0       0       0       0       0       0       0       0       0
 950          UI       0       0       0       0       0       0       0       0       0       0
 951          UI       0       0       0       0       0       0       0       0       0       0
 952          UI       0       0       0       0       0       0       0       0       0       0
              *

 953          KK     X09   BASIN
 954          KM         Customized XKSAT Values
 955          BA   0.348
 956          LG    0.12    0.26    3.95    0.74      70
 957          UI       0    1205       0       0       0       0       0       0       0       0
 958          UI       0       0       0       0       0       0       0       0       0       0
 959          UI       0       0       0       0       0       0       0       0       0       0
 960          UI       0       0       0       0       0       0       0       0       0       0
 961          UI       0       0       0       0       0       0       0       0       0       0
              *

 962          KK     X10   BASIN
 963          KM         Customized XKSAT Values
 964          BA   0.213
 965          LG    0.10    0.25    3.95    0.76      70
 966          UI       0     778       0       0       0       0       0       0       0       0
 967          UI       0       0       0       0       0       0       0       0       0       0
 968          UI       0       0       0       0       0       0       0       0       0       0
 969          UI       0       0       0       0       0       0       0       0       0       0
 970          UI       0       0       0       0       0       0       0       0       0       0
              *

 971          KK  DUMMY5
 972          KM         Combine Hydrographs to eliminate errors in output.
 973          HC       8
              *
 974          ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE    (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   32        J04
              .
              .
   43         .------->   DVJ04
   40      DJ04
              V
              V
   46     RCPJ04
              .
              .
   52         .         J07
              .           .
              .           .
   60      CPJ07............
              V
              V
   63     RCPJ07
              .
              .
   69         .         J11
              .           .
              .           .
   77      CPJ11............
              V
              V
   80     RCPJ11
              .
              .
   86         .         J16
              .           .
              .           .
   94      CPJ16............
              V
              V
   97     RCPJ16
              .
              .
  105         .           .<-------   DVJ04
  103         .       DRJ04
              .           V
              .           V
  106         .       RDJ04
              .           .
              .           .
  112         .           .         J06
              .           .           .
              .           .           .
```

```
120          .      CPJ06...........
             .          V
             .          V
123          .      RCPJ06
             .          .
             .          .
130          .          .        J10
             .          .          .
             .          .          .
138          .      CPJ10...........
             .          V
             .          V
141          .      RCPJ10
             .          .
             .          .
147          .          .        J15
             .          .          .
             .          .          .
155          .      CPJ15...........
             .          V
             .          V
158          .      RCPJ15
             .          .
             .          .
164          .          .        J08
             .          .          V
             .          .          V
172          .          .      RCPJ08
             .          .          .
             .          .          .
178          .          .          .        J12
             .          .          .          .
             .          .          .          .
186          .          .      CPJ12...........
             .          .          V
             .          .          V
189          .          .      RCPJ12
             .          .          .
             .          .          .
195          .          .          .        J13
             .          .          .          V
             .          .          .          V
203          .          .          .      RCPJ13
             .          .          .          .
             .          .          .          .
209          .          .          .          .         J17
             .          .          .          .           .
             .          .          .          .           .
217          .          .      CPJ17......................
             .          .          V
             .          .          V
220          .          .      RCPJ17
             .          .          .
             .          .          .
226          .          .          .        J20
             .          .          .          .
             .          .          .          .
234       CPJ20...................................
             V
             V
237       RCPJ20
             .
             .
243          .        J18
             .          V
             .          V
251          .      RCPJ18
             .          .
             .          .
257          .          .        J21
             .          .          .
             .          .          .
265          .      CPJ21...........
             .          V
             .          V
268          .      RCPJ21
             .          .
             .          .
274          .          .        J22
             .          .          .
             .          .          .
282       CPJ22......................
             V
             V
285       RCPJ22
             .
             .
291          .        J39
             .          .
             .          .
299          .          .        J40
             .          .          V
             .          .          V
307          .          .      RCPJ40
             .          .          .
             .          .          .
313       CPJ39......................
             .
             .
316          .        J27
             .          .
             .          .
323          .          .        J28
             .          .          .
             .          .          .
330          .      CPJ27...........
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                 .          V
                 .          V
333              .     RCPJ27
                 .          .
                 .          .
339              .          .        J37
                 .          .          .
                 .          .          .
347              .      CPJ37............
                 .          .
                 .          .
350              .          .        J36
                 .          .          .
                 .          .          .
358              .          .          .        J38
                 .          .          .          .
                 .          .          .          .
365              .          .          .          .        J41
                 .          .          .          .          .
                 .          .          .          .          .
373              .          .          .          .          .        J42
                 .          .          .          .          .          .
                 .          .          .          .          .          .
381         DUMMY1..............................................................
                 .
                 .
384              .        J01
                 .          V
                 .          V
392              .     RCPJ01
                 .          .
                 .          .
398              .          .        J14
                 .          .          .
                 .          .          .
406              .          .          .        J25
                 .          .          .          V
                 .          .          .          V
414              .          .          .     RCPJ25
                 .          .          .          .
                 .          .          .          .
420              .      CPJ14......................
                 .          V
                 .          V
423              .     RCPJ14
                 .          .
                 .          .
429              .          .        J19
                 .          .          V
                 .          .          V
437              .          .     RCPJ19
                 .          .          .
                 .          .          .
443              .          .          .        J24
                 .          .          .          V
                 .          .          .          V
451              .          .          .     RCPJ24
                 .          .          .          .
                 .          .          .          .
457              .          .          .          .        J23
                 .          .          .          .          .
                 .          .          .          .          .
465              .      CPJ23..................................
                 .          V
                 .          V
468              .     RCPJ23
                 .          .
                 .          .
474              .          .       J29A
                 .          .          .
                 .          .          .
482              .          .          .       J29D
                 .          .          .          V
                 .          .          .          V
490              .          .          .     RCJ29D
                 .          .          .          .
                 .          .          .          .
496              .          .          .          .       J29C
                 .          .          .          .          V
                 .          .          .          .          V
504              .          .          .          .     RCJ29C
                 .          .          .          .          .
                 .          .          .          .          .
510              .          .          .          .          .        J29B
                 .          .          .          .          .          .
                 .          .          .          .          .          .
518              .      CPJ29A..............................................
                 .          V
                 .          V
521              .     RCJ29A
                 .          .
                 .          .
527              .          .       J43A
                 .          .          .
                 .          .          .
535              .          .          .       J43B
                 .          .          .          V
                 .          .          .          V
543              .          .          .     RCJ43B
                 .          .          .          .
                 .          .          .          .
549              .          .          .          .       J43C
                 .          .          .          .          V
                 .          .          .          .          V
557              .          .          .          .     RCJ43C
                 .          .          .          .          .
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563          .     CPJ43A...............................
             .
566          .          J30
             .           V
             .           V
574          .      RCPJ30
             .
580          .                  J46
             .
587          .       CPJ46............
             .
590          .                  J53
             .                   V
             .                   V
598          .               RCPJ53
             .
604          .                          J47
             .
612          .                CPJ47............
             .
615          .                          J44
             .
623          .                                   J45
             .
631          .                                            J49
             .
639          .                                                     J50
             .
647     DUMMY2.......................................................................
             .
650          .        J31
             .         V
             .         V
658          .     RCPJ31
             .
664          .          J32
             .           V
             .           V
672          .      RCPJ32
             .
678          .                  J48
             .
686          .      CPJ48........................
             .
689          .          J26
             .           V
             .           V
697          .      RCPJ26
             .
703          .                  J33
             .
711          .       CPJ33............
             .           V
             .           V
714          .      RCPJ33
             .
720          .                  J34
             .
728          .       CPJ34............
             .           V
             .           V
731          .      RCPJ34
             .
737          .                  J35
             .
745          .       CPJ35............
             .
748          .                  J51
             .                   V
             .                   V
756          .               RCPJ51
             .
763          .                          J52
             .
771          .                CPJ52............
             .
774          .                          J54
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782     DUMMY3.............................................
            .
            .
785         .        X01
            .          V
            .          V
793         .     RCPX01
            .          .
            .          .
799         .          .        X02
            .          .          .
            .          .          .
807         .      CPX02...........
            .          .
            .          .
810         .          .        X03
            .          .          V
            .          .          V
818         .          .     RCPX03
            .          .          .
            .          .          .
824         .          .          .        X04
            .          .          .          .
            .          .          .          .
832         .          .      CPX04...........
            .          .          .
            .          .          .
835         .          .          .        X14
            .          .          .          .
            .          .          .          .
843         .          .          .          .        X15
            .          .          .          .          .
            .          .          .          .          .
851         .          .          .          .          .        X06
            .          .          .          .          .          .
            .          .          .          .          .          .
859         .          .          .          .          .          .        X07
            .          .          .          .          .          .          .
            .          .          .          .          .          .          .
868         .          .          .          .          .          .          .        X05
            .          .          .          .          .          .          .          .
            .          .          .          .          .          .          .          .
876         .     DUMMY4.....................................................................
            .          .
            .          .
879         .          .        X12
            .          .          V
            .          .          V
887         .          .     RCPX12
            .          .          .
            .          .          .
894         .          .          .        X16
            .          .          .          V
            .          .          .          V
902         .          .          .     RCPX16
            .          .          .          .
            .          .          .          .
909         .          .          .          .        X17
            .          .          .          .          .
            .          .          .          .          .
917         .          .      CPX17........................
            .          .          .
            .          .          .
920         .          .          .        X18
            .          .          .          .
            .          .          .          .
928         .          .          .          .        X11
            .          .          .          .          .
            .          .          .          .          .
936         .          .          .          .          .        X13
            .          .          .          .          .          .
            .          .          .          .          .          .
944         .          .          .          .          .          .        X08
            .          .          .          .          .          .          .
            .          .          .          .          .          .          .
953         .          .          .          .          .          .          .        X09
            .          .          .          .          .          .          .          .
            .          .          .          .          .          .          .          .
962         .          .          .          .          .          .          .          .        X10
            .          .          .          .          .          .          .          .          .
            .          .          .          .          .          .          .          .          .
971         .     DUMMY5.....................................................................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   05OCT12  TIME  13:50:39  *
*                                      *
****************************************
```

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

Flood Control District of Maricopa County
SUB BASIN J and X - Rainbow Valley ADMP
Major Basin: J and X
100 Year - Return Period
6 Hour Storm
Multiple Storms
Unit Hydrograph: S-Graph
08/20/2010

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

    IT          HYDROGRAPH TIME DATA
                       NMIN          10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1JAN99  STARTING DATE
                      ITIME        1200  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3JAN99  ENDING DATE
                     NDTIME        1350  ENDING TIME
                      ICENT          19  CENTURY MARK

                  COMPUTATION INTERVAL    0.17 HOURS
                       TOTAL TIME BASE   49.83 HOURS

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

 12 JD          INDEX STORM NO. 1
                       STRM        2.67  PRECIPITATION DEPTH
                       TRDA        0.00  TRANSPOSITION DRAINAGE AREA

 13 PI            PRECIPITATION PATTERN
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                    0.05      0.11      0.21      0.30      0.05      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01

 16 JD          INDEX STORM NO. 2
                       STRM        2.65  PRECIPITATION DEPTH
                       TRDA        0.50  TRANSPOSITION DRAINAGE AREA

 17 PI            PRECIPITATION PATTERN
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.03
                    0.05      0.11      0.21      0.30      0.05      0.03      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01

 20 JD          INDEX STORM NO. 3
                       STRM        2.60  PRECIPITATION DEPTH
                       TRDA        2.80  TRANSPOSITION DRAINAGE AREA

 21 PI            PRECIPITATION PATTERN
                    0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.03      0.04
                    0.06      0.13      0.15      0.16      0.10      0.07      0.04      0.03      0.02      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01

 24 JD          INDEX STORM NO. 4
                       STRM        2.46  PRECIPITATION DEPTH
                       TRDA       16.00  TRANSPOSITION DRAINAGE AREA

 25 PI            PRECIPITATION PATTERN
                    0.01      0.01      0.00      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.03      0.04
                    0.05      0.11      0.12      0.13      0.08      0.07      0.05      0.03      0.03      0.02
                    0.01      0.01      0.01      0.01      0.01      0.01

 28 JD          INDEX STORM NO. 5
                       STRM        2.16  PRECIPITATION DEPTH
                       TRDA       90.00  TRANSPOSITION DRAINAGE AREA

 29 PI            PRECIPITATION PATTERN
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.03      0.04
                    0.06      0.09      0.10      0.11      0.08      0.06      0.05      0.03      0.03      0.03
                    0.01      0.01      0.01      0.01      0.01      0.01
          WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO
1
                                                   RUNOFF SUMMARY
                                          FLOW IN CUBIC FEET PER SECOND
                                       TIME IN HOURS,  AREA IN SQUARE MILES

                                   PEAK   TIME OF    AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
          OPERATION       STATION  FLOW    PEAK                                          AREA     STAGE    MAX STAGE
+                                                      6-HOUR     24-HOUR     72-HOUR

          HYDROGRAPH AT
+                            J04    684.   4.17         48.         12.          6.      0.39

          DIVERSION TO
+                          DVJ04    274.   4.17         17.          4.          2.      0.39

          HYDROGRAPH AT
+                           DJ04    410.   4.17         31.          8.          4.      0.39

          ROUTED TO
+                         RCPJ04    200.   5.00         31.          8.          4.      0.39

          HYDROGRAPH AT
+                            J07    675.   4.33         45.         11.          5.      0.45

          2 COMBINED AT
+                          CPJ07    601.   4.33         70.         18.          9.      0.69

          ROUTED TO
+                         RCPJ07    611.   4.33         70.         18.          9.      0.69
```

+	HYDROGRAPH AT	J11	372.	4.33	24.	6.	3.	0.24
+	2 COMBINED AT	CPJ11	838.	4.33	86.	22.	10.	0.94
+	ROUTED TO	RCPJ11	800.	4.33	86.	22.	10.	0.94
+	HYDROGRAPH AT	J16	436.	4.33	29.	7.	4.	0.27
+	2 COMBINED AT	CPJ16	1038.	4.33	105.	27.	13.	1.21
+	ROUTED TO	RCPJ16	678.	4.67	105.	27.	13.	1.21
+	HYDROGRAPH AT	DRJ04	274.	4.17	17.	4.	2.	0.39
+	ROUTED TO	RDJ04	112.	5.00	17.	4.	2.	0.39
+	HYDROGRAPH AT	J06	554.	4.17	37.	9.	5.	0.37
+	2 COMBINED AT	CPJ06	548.	4.17	53.	14.	7.	0.52
+	ROUTED TO	RCPJ06	326.	4.50	53.	14.	7.	0.52
+	HYDROGRAPH AT	J10	449.	4.33	29.	7.	4.	0.29
+	2 COMBINED AT	CPJ10	518.	4.33	73.	18.	9.	0.81
+	ROUTED TO	RCPJ10	310.	5.17	71.	18.	9.	0.81
+	HYDROGRAPH AT	J15	878.	4.33	66.	16.	8.	0.58
+	2 COMBINED AT	CPJ15	648.	4.33	114.	30.	14.	1.39
+	ROUTED TO	RCPJ15	398.	4.83	113.	30.	14.	1.39
+	HYDROGRAPH AT	J08	208.	4.17	13.	3.	2.	0.10
+	ROUTED TO	RCPJ08	179.	4.33	13.	3.	2.	0.10
+	HYDROGRAPH AT	J12	598.	4.33	42.	11.	5.	0.41
+	2 COMBINED AT	CPJ12	774.	4.33	55.	14.	7.	0.51
+	ROUTED TO	RCPJ12	340.	5.17	54.	14.	7.	0.51
+	HYDROGRAPH AT	J13	897.	4.33	78.	20.	9.	0.86
+	ROUTED TO	RCPJ13	585.	4.83	78.	20.	9.	0.86
+	HYDROGRAPH AT	J17	590.	4.50	52.	13.	6.	0.52
+	3 COMBINED AT	CPJ17	595.	5.00	137.	35.	17.	1.89
+	ROUTED TO	RCPJ17	535.	5.33	137.	35.	17.	1.89
+	HYDROGRAPH AT	J20	1361.	4.33	155.	39.	19.	0.71
+	4 COMBINED AT	CPJ20	1071.	4.67	375.	100.	48.	5.20
+	ROUTED TO	RCPJ20	1008.	5.00	374.	100.	48.	5.20
+	HYDROGRAPH AT	J18	861.	4.33	83.	21.	10.	0.86
+	ROUTED TO	RCPJ18	594.	4.83	83.	21.	10.	0.86
+	HYDROGRAPH AT	J21	465.	4.33	46.	11.	6.	0.25
+	2 COMBINED AT	CPJ21	594.	4.83	123.	31.	15.	1.11
+	ROUTED TO	RCPJ21	489.	5.17	120.	31.	15.	1.11

+	HYDROGRAPH AT	J22	1473.	4.50	228.	57.	28.	1.50
+	3 COMBINED AT	CPJ22	1991.	4.67	608.	163.	79.	7.81
+	ROUTED TO	RCPJ22	1776.	5.17	602.	163.	79.	7.81
+	HYDROGRAPH AT	J39	892.	4.67	121.	30.	15.	1.05
+	HYDROGRAPH AT	J40	1269.	4.33	122.	31.	15.	0.90
+	ROUTED TO	RCPJ40	1254.	4.33	122.	31.	15.	0.90
+	3 COMBINED AT	CPJ39	1901.	5.00	738.	201.	97.	9.76
+	HYDROGRAPH AT	J27	1083.	4.67	176.	44.	21.	1.42
+	HYDROGRAPH AT	J28	855.	4.50	115.	29.	14.	0.95
+	2 COMBINED AT	CPJ27	1625.	4.67	266.	67.	32.	2.37
+	ROUTED TO	RCPJ27	1531.	4.67	266.	67.	32.	2.37
+	HYDROGRAPH AT	J37	721.	4.67	91.	23.	11.	0.81
+	2 COMBINED AT	CPJ37	1926.	4.67	327.	82.	40.	3.18
+	HYDROGRAPH AT	J36	707.	4.50	71.	18.	9.	0.53
+	HYDROGRAPH AT	J38	1963.	4.50	260.	65.	31.	2.08
+	HYDROGRAPH AT	J41	487.	4.17	30.	7.	4.	0.18
+	HYDROGRAPH AT	J42	464.	4.17	28.	7.	3.	0.20
+	6 COMBINED AT	DUMMY1	4099.	4.50	1178.	318.	153.	15.92
+	HYDROGRAPH AT	J01	4865.	4.33	844.	212.	102.	7.18
+	ROUTED TO	RCPJ01	3920.	4.83	832.	212.	102.	7.18
+	HYDROGRAPH AT	J14	1679.	4.50	236.	59.	29.	2.13
+	HYDROGRAPH AT	J25	937.	4.33	102.	26.	12.	0.52
+	ROUTED TO	RCPJ25	866.	4.33	102.	26.	12.	0.52
+	3 COMBINED AT	CPJ14	4406.	4.67	1065.	273.	131.	9.83
+	ROUTED TO	RCPJ14	4229.	4.83	1064.	273.	131.	9.83
+	HYDROGRAPH AT	J19	167.	4.33	11.	3.	1.	0.10
+	ROUTED TO	RCPJ19	84.	4.83	11.	3.	1.	0.10
+	HYDROGRAPH AT	J24	426.	4.17	24.	6.	3.	0.19
+	ROUTED TO	RCPJ24	326.	4.17	24.	6.	3.	0.19
+	HYDROGRAPH AT	J23	514.	4.33	45.	11.	5.	0.31
+	4 COMBINED AT	CPJ23	4261.	4.83	1106.	284.	137.	10.43
+	ROUTED TO	RCPJ23	3957.	5.00	1101.	284.	137.	10.43
+	HYDROGRAPH AT	J29A	453.	4.50	48.	12.	6.	0.34
+	HYDROGRAPH AT	J29D	923.	4.17	76.	19.	9.	0.43
+	ROUTED TO	RCJ29D	794.	4.33	76.	19.	9.	0.43
	HYDROGRAPH AT							

+		J29C	1417.	4.33	144.	36.	17.	1.00
+	ROUTED TO	RCJ29C	1289.	4.33	143.	36.	17.	1.00
+	HYDROGRAPH AT	J29B	292.	4.17	24.	6.	3.	0.15
+	5 COMBINED AT	CPJ29A	4063.	5.00	1282.	332.	160.	12.35
+	ROUTED TO	RCJ29A	3846.	5.17	1279.	332.	160.	12.35
+	HYDROGRAPH AT	J43A	624.	4.33	52.	13.	6.	0.37
+	HYDROGRAPH AT	J43B	227.	4.17	19.	5.	2.	0.11
+	ROUTED TO	RCJ43B	172.	4.33	19.	5.	2.	0.11
+	HYDROGRAPH AT	J43C	305.	4.17	17.	4.	2.	0.12
+	ROUTED TO	RCJ43C	155.	4.33	17.	4.	2.	0.12
+	4 COMBINED AT	CPJ43A	3849.	5.17	1327.	345.	166.	12.95
+	HYDROGRAPH AT	J30	658.	4.33	70.	17.	8.	0.33
+	ROUTED TO	RCPJ30	509.	4.50	69.	17.	8.	0.33
+	HYDROGRAPH AT	J46	791.	4.33	88.	22.	11.	0.56
+	2 COMBINED AT	CPJ46	1106.	4.50	150.	38.	18.	0.90
+	HYDROGRAPH AT	J53	118.	4.17	7.	2.	1.	0.05
+	ROUTED TO	RCPJ53	50.	4.67	7.	2.	1.	0.05
+	HYDROGRAPH AT	J47	673.	4.33	51.	13.	6.	0.46
+	2 COMBINED AT	CPJ47	687.	4.33	58.	14.	7.	0.51
+	HYDROGRAPH AT	J44	370.	4.17	18.	5.	2.	0.15
+	HYDROGRAPH AT	J45	653.	4.17	56.	14.	7.	0.32
+	HYDROGRAPH AT	J49	253.	4.33	22.	5.	3.	0.19
+	HYDROGRAPH AT	J50	1045.	4.33	107.	27.	13.	0.59
+	8 COMBINED AT	DUMMY2	6302.	4.67	2366.	634.	305.	31.52
+	HYDROGRAPH AT	J31	874.	4.33	95.	24.	12.	0.45
+	ROUTED TO	RCPJ31	625.	4.67	94.	24.	12.	0.45
+	HYDROGRAPH AT	J32	651.	4.17	48.	12.	6.	0.32
+	ROUTED TO	RCPJ32	390.	4.50	47.	12.	6.	0.32
+	HYDROGRAPH AT	J48	977.	4.33	105.	26.	13.	0.87
+	3 COMBINED AT	CPJ48	1510.	4.50	222.	56.	27.	1.65
+	HYDROGRAPH AT	J26	1295.	4.17	109.	27.	13.	0.51
+	ROUTED TO	RCPJ26	673.	4.67	107.	27.	13.	0.51
+	HYDROGRAPH AT	J33	1771.	4.33	205.	51.	25.	1.34
+	2 COMBINED AT	CPJ33	1791.	4.33	294.	75.	36.	1.85
+	ROUTED TO	RCPJ33	1611.	4.33	293.	75.	36.	1.85
+	HYDROGRAPH AT	J34	1108.	4.17	85.	21.	10.	0.45

+	2 COMBINED AT	CPJ34	1815.	4.33	360.	92.	44.	2.31
+	ROUTED TO	RCPJ34	1827.	4.33	360.	92.	44.	2.31
+	HYDROGRAPH AT	J35	1073.	4.17	88.	22.	11.	0.67
+	2 COMBINED AT	CPJ35	2198.	4.33	419.	107.	52.	2.97
+	HYDROGRAPH AT	J51	388.	4.17	34.	9.	4.	0.17
+	ROUTED TO	RCPJ51	277.	4.33	34.	9.	4.	0.17
+	HYDROGRAPH AT	J52	128.	4.83	18.	5.	2.	0.18
+	2 COMBINED AT	CPJ52	332.	4.33	52.	13.	6.	0.35
+	HYDROGRAPH AT	J54	489.	4.17	28.	7.	3.	0.22
+	5 COMBINED AT	DUMMY3	7766.	4.50	2766.	742.	358.	36.71
+	HYDROGRAPH AT	X01	2046.	4.33	263.	66.	32.	1.51
+	ROUTED TO	RCPX01	1727.	4.33	261.	66.	32.	1.51
+	HYDROGRAPH AT	X02	1857.	4.33	253.	63.	31.	1.50
+	2 COMBINED AT	CPX02	2848.	4.33	484.	122.	59.	3.01
+	HYDROGRAPH AT	X03	1870.	4.17	185.	46.	22.	1.00
+	ROUTED TO	RCPX03	1045.	4.50	184.	46.	22.	1.00
+	HYDROGRAPH AT	X04	1393.	4.33	161.	40.	19.	0.96
+	2 COMBINED AT	CPX04	1852.	4.33	327.	82.	40.	1.97
+	HYDROGRAPH AT	X14	321.	4.17	27.	7.	3.	0.19
+	HYDROGRAPH AT	X15	452.	4.17	34.	9.	4.	0.19
+	HYDROGRAPH AT	X06	1498.	4.33	165.	41.	20.	1.03
+	HYDROGRAPH AT	X07	2288.	4.33	375.	94.	45.	2.10
+	HYDROGRAPH AT	X05	472.	4.33	42.	10.	5.	0.32
+	7 COMBINED AT	DUMMY4	6622.	4.33	1273.	322.	155.	8.81
+	HYDROGRAPH AT	X12	554.	4.17	45.	11.	5.	0.24
+	ROUTED TO	RCPX12	390.	4.33	44.	11.	5.	0.24
+	HYDROGRAPH AT	X16	695.	4.17	45.	11.	5.	0.28
+	ROUTED TO	RCPX16	372.	4.33	45.	11.	5.	0.28
+	HYDROGRAPH AT	X17	1183.	4.17	109.	27.	13.	0.46
+	3 COMBINED AT	CPX17	1490.	4.17	189.	48.	23.	0.98
+	HYDROGRAPH AT	X18	899.	4.17	70.	18.	8.	0.41
+	HYDROGRAPH AT	X11	644.	4.17	45.	11.	5.	0.29
+	HYDROGRAPH AT	X13	2774.	4.33	455.	114.	55.	3.72
+	HYDROGRAPH AT	X08	977.	4.17	78.	19.	9.	0.40
+	HYDROGRAPH AT	X09	888.	4.17	71.	18.	9.	0.35

```
+          HYDROGRAPH AT
                          X10       574.    4.17        46.        11.         5.       0.21
+          8 COMBINED AT
                        DUMMY5     9398.    4.33      1997.       505.       243.      15.18

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

100-Year 24-Hour Storm Study Area 3 HEC-1 Model

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             JUN   1998               *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   05OCT12  TIME  13:48:10  *
*                                      *
****************************************
```

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

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

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

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

```
1                                          HEC-1 INPUT                                                    PAGE  1

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

       1           ID        Flood Control District of Maricopa County
       2           ID        SUB BASIN J - Rainbow Valley ADMP
       3           ID        Major Basin: J  and X
       4           ID        100 Year Return Period
       5           ID         24 Hour Storm
       6           ID        Multiple Storms
       7           ID        Unit Hydrograph: S-Graph
       8           ID        08/20/2010
       9           IT      10  1JAN99    1200     300
      10           IN      15
      11           IO       5
                   *DIAGRAM
                   *
                   *
      12           JD   3.438  0.0001
      13           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
      14           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
      15           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
      16           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
      17           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
      18           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
      19           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
      20           PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
      21           PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
      22           PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
      23           JD   3.266    10.0
      24           JD   3.094    30.0
      25           JD   2.991    60.0
      26           JD   2.929    90.0
                   *
                   *

      27           KK     J04   BASIN
      28           BA   0.394
      29           LG    0.10    0.25    5.10    0.42       5
      30           UI       0     546     858     106       0       0       0       0       0       0
      31           UI       0       0       0       0       0       0       0       0       0       0
      32           UI       0       0       0       0       0       0       0       0       0       0
      33           UI       0       0       0       0       0       0       0       0       0       0
      34           UI       0       0       0       0       0       0       0       0       0       0
                   *
                   *

      35           KK    DJ04
      36           KM      Divert flow from J04
      37           KM        Natural divergence of flow due to a braided channel network.
      38           DT   DVJ04
      39           DI       0      20     138     583    1604    3366
      40           DQ       0       0      28     228     694    1864
                   *
                   *
1                                          HEC-1 INPUT                                                    PAGE  2

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

      41           KK  RCPJ04
      42           KM        Route remainder flow from Basin J04 to CPJ07
      43           RS       7    FLOW      -1
      44           RC   0.050   0.045   0.050    7992  0.0149
      45           RX       0     100     125     150     160     175     200     300
      46           RY    1143    1142    1142    1142    1142    1142    1142    1143
                   *
                   *
                   *

      47           KK     J07   BASIN
      48           BA   0.452
```

```
 49          LG    0.15    0.27    4.00    0.68       4
 50          UI       0     401     984     309      47       0       0       0       0       0
 51          UI       0       0       0       0       0       0       0       0       0       0
 52          UI       0       0       0       0       0       0       0       0       0       0
 53          UI       0       0       0       0       0       0       0       0       0       0
 54          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

 55          KK   CPJ07
 56          KM        Combine Basin J07 with RDJ04
 57          HC       1   0.694
             *
             *

 58          KK  RCPJ07
 59          KM        Route remainder flow from Basin J07 to CPJ11
 60          RS       3    FLOW      -1
 61          RC   0.050   0.045   0.050     630  0.0045
 62          RX       0      20      30     230     430     630     830    1030
 63          RY    1513    1513    1506  1508.8  1511.6  1514.4  1517.2    1520
             *
             *
             *

 64          KK     J11   BASIN
 65          BA   0.244
 66          LG    0.35    0.35    4.10    0.44       0
 67          UI       0     257     548     122       0       0       0       0       0       0
 68          UI       0       0       0       0       0       0       0       0       0       0
 69          UI       0       0       0       0       0       0       0       0       0       0
 70          UI       0       0       0       0       0       0       0       0       0       0
 71          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

 72          KK   CPJ11
 73          KM        Combine Basin J11 with RCPJ07
 74          HC       1    .938
             *
             *
```



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

 75          KK  RCPJ11
 76          KM        Route remainder flow from Basin J11 to CPJ16
 77          RS       5    FLOW      -1
 78          RC   0.050   0.045   0.050     630  0.0045
 79          RX       0      20      30     230     430     630     830    1030
 80          RY    1513    1513    1506  1508.8  1511.6  1514.4  1517.2    1520
             *

 81          KK     J16   BASIN
 82          BA   0.269
 83          LG    0.35    0.35    4.55    0.34       2
 84          UI       0     202     553     233      42       0       0       0       0       0
 85          UI       0       0       0       0       0       0       0       0       0       0
 86          UI       0       0       0       0       0       0       0       0       0       0
 87          UI       0       0       0       0       0       0       0       0       0       0
 88          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

 89          KK   CPJ16
 90          KM        Combine Basin J16 with RCPJ11
 91          HC       2   1.207
             *

 92          KK  RCPJ16
 93          KM        Route flow from CPJ16 to CPJ20
 94          RS       3    FLOW      -1
 95          RC   0.050   0.045   0.050    4489  0.0033
 96          RX       0      50     100     115     200     234     338     400
 97          RY  1025.3  1021.4  1017.5    1016  1020.3    1022  1027.5    1028
             *
             *

 98          KK   DRJ04
 99          KM        Return diverted flow from Basin J04
100          DR   DVJ04
             *

101          KK   RDJ04
102          KM        Route remainder flow from Basin J04 to CPJ06
103          RS       7    FLOW      -1
104          RC   0.050   0.045   0.050    6166  0.0144
105          RX       0      80     112     179     250     352     389     421
106          RY  1202.7    1202  1201.8    1202  1202.3 1202.53  1202.6  1202.7
             *
             *

107          KK     J06   BASIN
108          BA   0.369
109          LG    0.10    0.25    4.00    0.74       5
110          UI       0     547     779      92       0       0       0       0       0       0
111          UI       0       0       0       0       0       0       0       0       0       0
112          UI       0       0       0       0       0       0       0       0       0       0
113          UI       0       0       0       0       0       0       0       0       0       0
```



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

114          UI       0       0       0       0       0       0       0       0       0       0
             *
```

```
                 *

115              KK   CPJ06
116              KM        Combine  RCPJ04 with Basin J06
117              HC       2   0.517
                 *
                 *
                 *

118              KK  RCPJ06
119              KM        Route flow from Basin J06 to CPJ10
120              KM        This Route is a typical section for Sheet Flow Route
121              RS       3    FLOW      -1
122              RC   0.050   0.045   0.050    4851  0.0109
123              RX       0     500     700     750     800     900    1100    1600
124              RY       6       4       2       0       0       2       4       6
                 *
                 *
                 *

125              KK     J10   BASIN
126              BA   0.295
127              LG    0.31    0.33    4.00    0.50       1
128              UI       0     281     653     180      26       0       0       0       0       0
129              UI       0       0       0       0       0       0       0       0       0       0
130              UI       0       0       0       0       0       0       0       0       0       0
131              UI       0       0       0       0       0       0       0       0       0       0
132              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

133              KK   CPJ10
134              KM        Combine Basin J10 with RCPJ06
135              HC       2   0.812
                 *
                 *
                 *

136              KK  RCPJ10
137              KM        Route flow from Basin J10 to CPJ15
138              RS       7    FLOW      -1
139              RC   0.050   0.045   0.050    7255  0.0092
140              RX       0     190     322     350     477     616     620     650
141              RY  1045.3  1044.9  1043.4 1043.45  1043.5    1045    1045    1045
                 *
                 *
                 *
```



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

142              KK     J15   BASIN
143              BA   0.576
144              LG    0.35    0.35    4.55    0.34       6
145              UI       0     351    1057     638     144      34       0       0       0       0
146              UI       0       0       0       0       0       0       0       0       0       0
147              UI       0       0       0       0       0       0       0       0       0       0
148              UI       0       0       0       0       0       0       0       0       0       0
149              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

150              KK   CPJ15
151              KM        Combine Basin J15 with RCPJ10
152              HC       2   1.388
                 *
                 *

153              KK  RCPJ15
154              KM        Route flow from CPJ15 to cPJ20
155              RS       4    FLOW      -1
156              RC   0.050   0.045   0.050    4673  0.0028
157              RX       0      36      80     158     393     405     410     411
158              RY    1022    1020  1018.2    1014    1023  1023.9  1024.1  1024.2
                 *
                 *

159              KK     J08   BASIN
160              BA   0.096
161              LG    0.10    0.25    5.70    0.32       5
162              UI       0     227     137       0       0       0       0       0       0       0
163              UI       0       0       0       0       0       0       0       0       0       0
164              UI       0       0       0       0       0       0       0       0       0       0
165              UI       0       0       0       0       0       0       0       0       0       0
166              UI       0       0       0       0       0       0       0       0       0       0
                 *

167              KK  RCPJ08
168              KM        Route flow from Basin J08 to CPJ12
169              RS       7    FLOW      -1
170              RC   0.050   0.045   0.050    8094  0.0141
171              RX       0      25      50     144     200     205     208     304
172              RY  1152.9 1152.75  1152.5  1151.7 1511.95 1151.98    1152  1152.8
                 *

173              KK     J12   BASIN
174              BA   0.411
175              LG    0.19    0.29    4.25    0.57       3
176              UI       0     250     754     455     103      24       0       0       0       0
177              UI       0       0       0       0       0       0       0       0       0       0
178              UI       0       0       0       0       0       0       0       0       0       0
179              UI       0       0       0       0       0       0       0       0       0       0
180              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *
```

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

 181          KK   CPJ12
 182          KM        Combine Basin J12 with RCPJ08
 183          HC        2
              *
              *

 184          KK  RCPJ12
 185          KM        Route flow from Basin J12 to CPJ17
 186          RS        7    FLOW      -1
 187          RC   0.050   0.045   0.050    6817  0.0092
 188          RX       0     580     685     728     841     943     990    1500
 189          RY  1068.4  1067.2 1066.67  1066.8  1066.7  1067.2  1067.5 1068.52
              *

 190          KK     J13   BASIN
 191          BA   0.859
 192          LG    0.15    0.27    4.30    0.60       4
 193          UI       0     366    1140    1189     454     124      42       0       0       0
 194          UI       0       0       0       0       0       0       0       0       0       0
 195          UI       0       0       0       0       0       0       0       0       0       0
 196          UI       0       0       0       0       0       0       0       0       0       0
 197          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 198          KK  RCPJ13
 199          KM        Route flow from Basin J13 to CPJ17
 200          RS        5    FLOW      -1
 201          RC   0.050   0.045   0.050    6791  0.0081
 202          RX       0      45      60      80      83     186     315     316
 203          RY  1077.3  1076.6    1076    1075    1075    1076  1077.2  1077.2
              *

 204          KK     J17   BASIN
 205          BA   0.522
 206          LG    0.35    0.35    4.35    0.39       0
 207          UI       0     183     540     769     368     109      31       0       0       0
 208          UI       0       0       0       0       0       0       0       0       0       0
 209          UI       0       0       0       0       0       0       0       0       0       0
 210          UI       0       0       0       0       0       0       0       0       0       0
 211          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 212          KK   CPJ17
 213          KM        Combine Basin J17 with RCPJ12 and RCPJ13
 214          HC        3
              *
              *
              *
```



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

 215          KK  RCPJ17
 216          KM        Route flow from CPJ17 to CPJ20
 217          RS        3    FLOW      -1
 218          RC   0.050   0.045   0.050    4419   0.005
 219          RX       0      54     161     168     279     368     435     440
 220          RY  1012.7 1011.26 1010.08    1010    1010    1013  1015.6  1015.6
              *
              *

 221          KK     J20   BASIN
 222          BA   0.715
 223          LG    0.28    0.30    6.00    0.20      58
 224          UI       0     680    1582     436      64       0       0       0       0       0
 225          UI       0       0       0       0       0       0       0       0       0       0
 226          UI       0       0       0       0       0       0       0       0       0       0
 227          UI       0       0       0       0       0       0       0       0       0       0
 228          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 229          KK   CPJ20
 230          KM        Combine Basin J20 with RCPJ17, RCPJ16, RCPJ15
 231          HC        4
              *
              *

 232          KK  RCPJ20
 233          KM        Route flow from CPJ20 to CPJ22
 234          RS        2    FLOW      -1
 235          RC   0.050   0.045   0.050    5772  0.0069
 236          RX       0      39      62     169     170     222     316     317
 237          RY   995.7     996   993.8     990     990   992.6   997.5   997.5
              *
              *

 238          KK     J18   BASIN
 239          BA   0.857
 240          LG    0.32    0.33    4.40    0.41       4
 241          UI       0     309     919    1256     582     176      46       0       0       0
 242          UI       0       0       0       0       0       0       0       0       0       0
 243          UI       0       0       0       0       0       0       0       0       0       0
 244          UI       0       0       0       0       0       0       0       0       0       0
 245          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
```

```
246          KK  RCPJ18
247          KM        Route flow from CPJ18 to CPJ21
248          RS       3    FLOW      -1
249          RC   0.050   0.045   0.050    5109  0.0057
250          RX       0      86     103     110     200     212     254     255
251          RY  1025.3    1024    1023  1023.4    1026  1026.5    1027    1027
             *
             *
```



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

252          KK     J21   BASIN
253          BA   0.251
254          LG    0.26    0.26    4.55    0.42      43
255          UI       0     286     566     104       0       0       0       0       0       0
256          UI       0       0       0       0       0       0       0       0       0       0
257          UI       0       0       0       0       0       0       0       0       0       0
258          UI       0       0       0       0       0       0       0       0       0       0
259          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

260          KK   CPJ21
261          KM        Combine Basin J21 with RCPJ18
262          HC       2
             *
             *
             *

263          KK  RCPJ21
264          KM        Route flow from CPJ21 to CPJ22
265          RS       4    FLOW      -1
266          RC   0.050   0.045   0.050    6057  0.0054
267          RX       0      39      62     169     170     171     222     316
268          RY   995.7     996   993.8     990     990     990  992.57   997.5
             *

269          KK     J22   BASIN
270          BA   1.503
271          LG    0.30    0.32    5.20    0.29      31
272          UI       0     261     826    1456    1581     943     422     198      61      49
273          UI       0       0       0       0       0       0       0       0       0       0
274          UI       0       0       0       0       0       0       0       0       0       0
275          UI       0       0       0       0       0       0       0       0       0       0
276          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

277          KK   CPJ22
278          KM        Combine Basin J22 with RCPJ21 and RCPJ20
279          HC       3
             *
             *

280          KK  RCPJ22
281          KM        Route flow from CPJ22 to CPJ39
282          RS       4    FLOW      -1
283          RC   0.050   0.045   0.050   11989  0.0073
284          RX       0      66     139     159     199     297     309     428
285          RY   945.4   944.6   940.7  936.95     938     938   939.5   945.9
             *
             *
```



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

286          KK     J39   BASIN
287          BA   1.046
288          LG    0.32    0.32    4.65    0.33      10
289          UI       0     156     514     846    1133     709     389     162      74      32
290          UI      32       0       0       0       0       0       0       0       0       0
291          UI       0       0       0       0       0       0       0       0       0       0
292          UI       0       0       0       0       0       0       0       0       0       0
293          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

294          KK     J40   BASIN
295          BA   0.900
296          LG    0.33    0.33    4.90    0.29      19
297          UI       0     468    1469    1118     324      74       0       0       0       0
298          UI       0       0       0       0       0       0       0       0       0       0
299          UI       0       0       0       0       0       0       0       0       0       0
300          UI       0       0       0       0       0       0       0       0       0       0
301          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

302          KK  RCPJ40
303          KM        Route flow from CPJ40 to CPJ39
304          RS       1    FLOW      -1
305          RC   0.050   0.045   0.050     608  0.0132
306          RX       0       0      25      34      50      81      95     120
307          RY   888.2  888.15  882.97   883.2   882.7   881.8  883.75     887
             *
             *

308          KK   CPJ39
309          KM        Combine Basin J39 with RCPJ22 and RCPJ40
310          HC       3
             *
             *
```

```
311          KK     J27   BASIN
312          BA   1.417
313          LG    0.30    0.27    4.80    0.30      12
314          UI       0     116     461     692    1085    1197     809     547     256     152
315          UI      77      34      34       0       0       0       0       0       0       0
316          UI       0       0       0       0       0       0       0       0       0       0
317          UI       0       0       0       0       0       0       0       0       0       0
             *

318          KK     J28   BASIN
319          BA   0.950
320          LG    0.32    0.31    4.70    0.31      10
321          UI       0     146     477     795    1026     635     336     143      62      29
322          UI      29       0       0       0       0       0       0       0       0       0
323          UI       0       0       0       0       0       0       0       0       0       0
324          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
```



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

325          KK   CPJ27
326          KM        Combine Basin J27 and J28
327          HC       2
             *
             *

328          KK  RCPJ27
329          KM        Route flow from Basins J27 and J28 to CPJ37
330          RS       1    FLOW      -1
331          RC   0.050   0.045   0.050    1992  0.0065
332          RX       0      87     129     169     197     279     400     600
333          RY   888.4   885.7   884.6   881.2   882.1   884.9   885.9   886.9
             *
             *

334          KK     J37   BASIN
335          BA   0.813
336          LG    0.33    0.31    4.60    0.33       5
337          UI       0     119     393     640     883     557     314     128      60      25
338          UI      25       0       0       0       0       0       0       0       0       0
339          UI       0       0       0       0       0       0       0       0       0       0
340          UI       0       0       0       0       0       0       0       0       0       0
341          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

342          KK   CPJ37
343          KM        Combine Basin J37 and RCPJ27
344          HC       2
             *
             *

345          KK     J36   BASIN
346          BA   0.526
347          LG    0.31    0.27    4.90    0.28       8
348          UI       0     152     446     749     437     164      55      22       0       0
349          UI       0       0       0       0       0       0       0       0       0       0
350          UI       0       0       0       0       0       0       0       0       0       0
351          UI       0       0       0       0       0       0       0       0       0       0
352          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

353          KK     J38   BASIN
354          BA   2.079
355          LG    0.24    0.29    4.65    0.30      15
356          UI       0     543    1614    2842    1818     782     298      81       0       0
357          UI       0       0       0       0       0       0       0       0       0       0
358          UI       0       0       0       0       0       0       0       0       0       0
359          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
```



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

360          KK     J41   BASIN
361          BA   0.182
362          LG    0.14    0.14    4.45    0.31      19
363          UI       0     668       0       0       0       0       0       0       0       0
364          UI       0       0       0       0       0       0       0       0       0       0
365          UI       0       0       0       0       0       0       0       0       0       0
366          UI       0       0       0       0       0       0       0       0       0       0
367          UI       0       0       0       0       0       0       0       0       0       0
             *

368          KK     J42   BASIN
369          BA   0.201
370          LG    0.33    0.33    4.35    0.38      31
371          UI       0     674       0       0       0       0       0       0       0       0
372          UI       0       0       0       0       0       0       0       0       0       0
373          UI       0       0       0       0       0       0       0       0       0       0
374          UI       0       0       0       0       0       0       0       0       0       0
375          UI       0       0       0       0       0       0       0       0       0       0
             *

376          KK  DUMMY1
377          KM        Combine Basins J36,J38,J41,J42 AND CONCENTRATION POINTS CPJ37 AND CPJ39
378          HC       6
             *

379          KK     J01   BASIN
```

```
380          BA   7.184
381          LG    0.10    0.25    4.25    0.66      35
382          UI       0    2728    8239   10428    4513    1372     336       0       0       0
383          UI       0       0       0       0       0       0       0       0       0       0
384          UI       0       0       0       0       0       0       0       0       0       0
385          UI       0       0       0       0       0       0       0       0       0       0
386          UI       0       0       0       0       0       0       0       0       0       0
             *

387          KK  RCPJ01
388          KM        Route flow from Basin J01 to CPJ14
389          RS       4    FLOW      -1
390          RC   0.050   0.045   0.050   11561  0.0099
391          RX       0      91     247     344     395     491     568     616
392          RY  1100.8  1100.6 1098.25  1098.6  1096.7  1097.3  1102.5  1102.8
             *
             *

393          KK     J14   BASIN
394          BA   2.126
395          LG    0.19    0.29    4.30    0.55      23
396          UI       0     546    1627    2883    1875     823     317      83       0       0
397          UI       0       0       0       0       0       0       0       0       0       0
398          UI       0       0       0       0       0       0       0       0       0       0
399          UI       0       0       0       0       0       0       0       0       0       0
400          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
```



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

401          KK     J25   BASIN
402          BA   0.518
403          LG    0.24    0.31    4.30    0.50      54
404          UI       0     275     860     636     178      40       0       0       0       0
405          UI       0       0       0       0       0       0       0       0       0       0
406          UI       0       0       0       0       0       0       0       0       0       0
407          UI       0       0       0       0       0       0       0       0       0       0
408          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

409          KK  RCPJ25
410          KM        Route flow from Basin J25 to CPJ14
411          RS       3    FLOW      -1
412          RC   0.050   0.045   0.050    1255  0.0135
413          RX       0       6      52     155     287     339     351     356
414          RY    1038    1038  1036.3  1035.1    1038    1038  1038.4  1038.6
             *
             *

415          KK   CPJ14
416          KM        Combine Basin J14, RCPJ25, and RCPJ01
417          HC       3
             *
             *
             *

418          KK  RCPJ14
419          KM        Route flow from CPJ14 to CP J23
420          RS       1    FLOW      -1
421          RC   0.050   0.045   0.050    3192  0.0116
422          RX       0      14     210     230     270     290     490     504
423          RY    1018 1015.25    1013    1010    1010    1013 1015.25    1018
             *
             *
             *

424          KK     J19   BASIN
425          BA   0.104
426          LG    0.35    0.35    4.45    0.37       2
427          UI       0      90     225      74      11       0       0       0       0       0
428          UI       0       0       0       0       0       0       0       0       0       0
429          UI       0       0       0       0       0       0       0       0       0       0
430          UI       0       0       0       0       0       0       0       0       0       0
431          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

432          KK  RCPJ19
433          KM        Route flow from CPJ19 to CPJ23
434          RS       5    FLOW      -1
435          RC   0.050   0.045   0.050    5003  0.0072
436          RX       0     100     190     220     250     280     370     470
437          RY    1000     999     998     997     997     998     999    1000
             *
             *
             *
             *
```



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

438          KK     J24   BASIN
439          BA   0.193
440          LG    0.35    0.39    5.70    0.20       5
441          UI       0     487     248       0       0       0       0       0       0       0
442          UI       0       0       0       0       0       0       0       0       0       0
443          UI       0       0       0       0       0       0       0       0       0       0
444          UI       0       0       0       0       0       0       0       0       0       0
445          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
```

```
                 *

446              KK  RCPJ24
447              KM        Route flow from CPJ24 to CPJ23
448              RS       1    FLOW      -1
449              RC   0.050   0.045   0.050    2069  0.0193
450              RX       0      90     200     210     230     240     310     420
451              RY    1027    1025    1023    1020    1020    1023    1025    1027
                 *
                 *

452              KK     J23   BASIN
453              BA   0.308
454              LG    0.29    0.30    4.55    0.38      22
455              UI       0     168     524     371      99      22       0       0       0       0
456              UI       0       0       0       0       0       0       0       0       0       0
457              UI       0       0       0       0       0       0       0       0       0       0
458              UI       0       0       0       0       0       0       0       0       0       0
459              UI       0       0       0       0       0       0       0       0       0       0
                 *

460              KK   CPJ23
461              KM        Combine Basin J23, RCPJ27, RCPJ24, and RCPJ19
462              HC       4
                 *
                 *
                 *

463              KK  RCPJ23
464              KM        Route flow from Basin J23 to CPJ29A
465              RS       1    FLOW      -1
466              RC   0.050   0.045   0.050    5917  0.0101
467              RX       0      45      68     124     135     150     167     252
468              RY   977.5  977.35  977.25   974.6   974.5   974.4   975.5   980.9
                 *

469              KK    J29A   BASIN
470              BA   0.340
471              LG    0.29    0.29    4.70    0.35      18
472              UI       0      90     266     467     296     126      48      13       0       0
473              UI       0       0       0       0       0       0       0       0       0       0
474              UI       0       0       0       0       0       0       0       0       0       0
475              UI       0       0       0       0       0       0       0       0       0       0
476              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *
```



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

477              KK    J29D   BASIN
478              BA   0.434
479              LG    0.26    0.29    5.20    0.30      34
480              UI       0     788     810      79       0       0       0       0       0       0
481              UI       0       0       0       0       0       0       0       0       0       0
482              UI       0       0       0       0       0       0       0       0       0       0
483              UI       0       0       0       0       0       0       0       0       0       0
484              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

485              KK  RCJ29D
486              KM        Route flow from Basin J29D to CPJ29A
487              RS       1    FLOW      -1
488              RC   0.050   0.045   0.050    2171  0.0157
489              RX       0      26     130     190     274     408     430     432
490              RY   964.5     965     960   952.3     960  972.54  973.25  973.25
                 *
                 *

491              KK    J29C   BASIN
492              BA   1.001
493              LG    0.31    0.33    4.65    0.34      26
494              UI       0     578    1770    1159     290      58       0       0       0       0
495              UI       0       0       0       0       0       0       0       0       0       0
496              UI       0       0       0       0       0       0       0       0       0       0
497              UI       0       0       0       0       0       0       0       0       0       0
498              UI       0       0       0       0       0       0       0       0       0       0
                 *

499              KK  RCJ29C
500              KM        Route flow from Basin J29C to CPJ29A
501              RS       1    FLOW      -1
502              RC   0.050   0.045   0.050    1816  0.0171
503              RX       0      45      68     124     135     150     167     252
504              RY   977.5  977.35  977.25   974.6   974.5   974.4   975.5   980.9
                 *

505              KK    J29B   BASIN
506              BA   0.146
507              LG    0.32    0.33    4.30    0.42      35
508              UI       0     259     277      28       0       0       0       0       0       0
509              UI       0       0       0       0       0       0       0       0       0       0
510              UI       0       0       0       0       0       0       0       0       0       0
511              UI       0       0       0       0       0       0       0       0       0       0
512              UI       0       0       0       0       0       0       0       0       0       0
                 *

513              KK  CPJ29A
514              KM        Combine Basin J29A and J29B with RCJ29C, RCJ29D, and RCPJ23
515              HC       5
                 *
                 *
```

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

 516          KK  RCJ29A
 517          KM        Route flow from CPJ29A to CPJ43A
 518          RS       2    FLOW      -1
 519          RC   0.050   0.045   0.050    6019  0.0086
 520          RX       0     118     141     144     145     146     232     419
 521          RY     941   935.6     934     934     934     934   936.6   940.6
              *

 522          KK    J43A   BASIN
 523          BA   0.365
 524          LG    0.30    0.30    4.45    0.41      22
 525          UI       0     409     823     158       0       0       0       0       0       0
 526          UI       0       0       0       0       0       0       0       0       0       0
 527          UI       0       0       0       0       0       0       0       0       0       0
 528          UI       0       0       0       0       0       0       0       0       0       0
 529          UI       0       0       0       0       0       0       0       0       0       0
              *

 530          KK    J43B   BASIN
 531          BA   0.108
 532          LG    0.29    0.29    4.45    0.41      41
 533          UI       0     196     202      20       0       0       0       0       0       0
 534          UI       0       0       0       0       0       0       0       0       0       0
 535          UI       0       0       0       0       0       0       0       0       0       0
 536          UI       0       0       0       0       0       0       0       0       0       0
 537          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 538          KK  RCJ43B
 539          KM        Route flow from Basin J43B to CPJ43A
 540          RS       1    FLOW      -1
 541          RC   0.050   0.045   0.050    2527  0.0119
 542          RX       0      45      83     102     116     232     233     234
 543          RY   918.7   915.5  913.14  909.95  910.55  916.06  916.06  916.06
              *
              *

 544          KK    J43C   BASIN
 545          BA   0.122
 546          LG    0.29    0.31    4.55    0.39      24
 547          UI       0     450       0       0       0       0       0       0       0       0
 548          UI       0       0       0       0       0       0       0       0       0       0
 549          UI       0       0       0       0       0       0       0       0       0       0
 550          UI       0       0       0       0       0       0       0       0       0       0
 551          UI       0       0       0       0       0       0       0       0       0       0
              *

 552          KK  RCJ43C
 553          KM        Route flow from Basin J43C to CPJ43A
 554          RS       3    FLOW      -1
 555          RC   0.050   0.045   0.050    4797  0.0113
 556          RX       0      37     135     157     159     315     413     414
 557          RY   936.3   933.8   923.9   922.1   922.2   931.9   934.8  934.81
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 558          KK  CPJ43A
 559          KM        Combine Basin J43A and RCJ43C, RCJ43B, and RCJ29A
 560          HC       4
              *

 561          KK     J30   BASIN
 562          BA   0.333
 563          LG    0.35    0.35    4.00    0.46      61
 564          UI       0     250     684     288      52       0       0       0       0       0
 565          UI       0       0       0       0       0       0       0       0       0       0
 566          UI       0       0       0       0       0       0       0       0       0       0
 567          UI       0       0       0       0       0       0       0       0       0       0
 568          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 569          KK  RCPJ30
 570          KM        Route flow from Basin J30 to CPJ46
 571          RS       2    FLOW      -1
 572          RC   0.050   0.045   0.050    8950  0.0200
 573          RX       0      25      50      60      70      80      90     100
 574          RY    1040    1038    1035    1030    1030    1035    1038    1040
              *
              *

 575          KK     J46   BASIN
 576          BA   0.564
 577          LG    0.35    0.35    4.60    0.33      29
 578          UI       0     210     634     821     364     112      26       0       0       0
 579          UI       0       0       0       0       0       0       0       0       0       0
 580          UI       0       0       0       0       0       0       0       0       0       0
 581          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 582          KK   CPJ46
 583          KM        Combine Basin J46 and RCPJ30
 584          HC       2
              *
              *

 585          KK     J53   BASIN
 586          BA   0.050
```

```
 587          LG    0.35    0.35    4.55    0.34      25
 588          UI       0     173       0       0       0       0       0       0       0       0
 589          UI       0       0       0       0       0       0       0       0       0       0
 590          UI       0       0       0       0       0       0       0       0       0       0
 591          UI       0       0       0       0       0       0       0       0       0       0
 592          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
              *
1                                          HEC-1 INPUT                                          PAGE 17

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

 593          KK  RCPJ53
 594          KM        Route flow from Basin J53 to CPJ47
 595          RS       5    FLOW      -1
 596          RC   0.050   0.045   0.050    8651  0.0201
 597          RX       0     160     305     320     335     350     400     440
 598          RY     975     974     973     970     970     973     974     975
              *
              *

 599          KK     J47   BASIN
 600          BA   0.456
 601          LG    0.35    0.35    4.90    0.28       1
 602          UI       0     218     691     591     198      46       0       0       0       0
 603          UI       0       0       0       0       0       0       0       0       0       0
 604          UI       0       0       0       0       0       0       0       0       0       0
 605          UI       0       0       0       0       0       0       0       0       0       0
 606          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 607          KK   CPJ47
 608          KM        Combine Basin J47 and RCPJ53 and RDJ30
 609          HC       2
              *
              *

 610          KK     J44   BASIN
 611          BA   0.147
 612          LG    0.33    0.33    4.70    0.32      10
 613          UI       0     557       0       0       0       0       0       0       0       0
 614          UI       0       0       0       0       0       0       0       0       0       0
 615          UI       0       0       0       0       0       0       0       0       0       0
 616          UI       0       0       0       0       0       0       0       0       0       0
 617          UI       0       0       0       0       0       0       0       0       0       0
              *

 618          KK     J45   BASIN
 619          BA   0.322
 620          LG    0.32    0.32    4.60    0.35      37
 621          UI       0     532     641      68       0       0       0       0       0       0
 622          UI       0       0       0       0       0       0       0       0       0       0
 623          UI       0       0       0       0       0       0       0       0       0       0
 624          UI       0       0       0       0       0       0       0       0       0       0
 625          UI       0       0       0       0       0       0       0       0       0       0
              *

 626          KK     J49   BASIN
 627          BA   0.191
 628          LG    0.45    0.29    4.25    0.56      14
 629          UI       0      91     290     248      83      19       0       0       0       0
 630          UI       0       0       0       0       0       0       0       0       0       0
 631          UI       0       0       0       0       0       0       0       0       0       0
 632          UI       0       0       0       0       0       0       0       0       0       0
 633          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 18

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

 634          KK     J50   BASIN
 635          BA   0.588
 636          LG    0.37    0.34    4.10    0.48      47
 637          UI       0     592    1313     326      45       0       0       0       0       0
 638          UI       0       0       0       0       0       0       0       0       0       0
 639          UI       0       0       0       0       0       0       0       0       0       0
 640          UI       0       0       0       0       0       0       0       0       0       0
 641          UI       0       0       0       0       0       0       0       0       0       0
              *
              *

 642          KK  DUMMY2
 643          KM        Combine Hydrographs to prevent an error in output.
 644          HC       8
              *

 645          KK     J31   BASIN
 646          BA   0.454
 647          LG    0.27    0.32    4.00    0.55      61
 648          UI       0     279     839     498     110      27       0       0       0       0
 649          UI       0       0       0       0       0       0       0       0       0       0
 650          UI       0       0       0       0       0       0       0       0       0       0
 651          UI       0       0       0       0       0       0       0       0       0       0
 652          UI       0       0       0       0       0       0       0       0       0       0
              *
              *
              *

 653          KK  RCPJ31
 654          KM        Route flow from Basin J31 to CPJ48
 655          RS       3    FLOW      -1
 656          RC   0.050   0.045   0.050    9063  0.0123
```

```
657          RX       0      60     110     120     150     160     280     310
658          RY     970     966     963     960     960     963     966     970
             *
             *

659          KK     J32   BASIN
660          BA   0.324
661          LG    0.30    0.33    4.15    0.48      29
662          UI       0     678     535       0       0       0       0       0       0       0
663          UI       0       0       0       0       0       0       0       0       0       0
664          UI       0       0       0       0       0       0       0       0       0       0
665          UI       0       0       0       0       0       0       0       0       0       0
666          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

667          KK  RCPJ32
668          KM        Route flow from Basin J32 to CPJ48
669          RS       3    FLOW      -1
670          RC   0.050   0.045   0.050    8460  0.0122
671          RX       0      60     110     120     150     160     280     310
672          RY     970     966     963     960     960     963     966     970
             *
             *
             *
```



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

673          KK     J48   BASIN
674          BA   0.869
675          LG    0.35    0.35    4.55    0.34      14
676          UI       0     316     944    1271     583     177      44       0       0       0
677          UI       0       0       0       0       0       0       0       0       0       0
678          UI       0       0       0       0       0       0       0       0       0       0
679          UI       0       0       0       0       0       0       0       0       0       0
680          UI       0       0       0       0       0       0       0       0       0       0
             *

681          KK   CPJ48
682          KM        Combine Basin J48, RCPJ32 and RCPJ31
683          HC       3
             *
             *

684          KK     J26   BASIN
685          BA   0.514
686          LG    0.10    0.25    4.10    0.72      63
687          UI       0    1524     451       0       0       0       0       0       0       0
688          UI       0       0       0       0       0       0       0       0       0       0
689          UI       0       0       0       0       0       0       0       0       0       0
690          UI       0       0       0       0       0       0       0       0       0       0
691          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

692          KK  RCPJ26
693          KM        Route flow from Basin J26 to CPJ33
694          RS       5    FLOW      -1
695          RC   0.050   0.045   0.050   11383  0.0099
696          RX       0     150     325     365     420     460     580     660
697          RY    1013    1008    1004    1000    1000    1004    1008    1013
             *
             *

698          KK     J33   BASIN
699          BA   1.338
700          LG    0.16    0.27    4.35    0.57      39
701          UI       0     968    2703    1214     230       0       0       0       0       0
702          UI       0       0       0       0       0       0       0       0       0       0
703          UI       0       0       0       0       0       0       0       0       0       0
704          UI       0       0       0       0       0       0       0       0       0       0
705          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

706          KK   CPJ33
707          KM        Combine Basin J33 and RCPJ26
708          HC       2
             *
             *
             *
```



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

709          KK  RCPJ33
710          KM        Route flow from Basin J33 to CPJ34
711          RS       1    FLOW      -1
712          RC   0.050   0.045   0.050    2290  0.0057
713          RX       0      40      85     105     180     200     310     420
714          RY     950     942     935     930     930     935     937     940
             *

715          KK     J34   BASIN
716          BA   0.454
717          LG    0.10    0.25    4.25    0.66      49
718          UI       0    1346     399       0       0       0       0       0       0       0
719          UI       0       0       0       0       0       0       0       0       0       0
720          UI       0       0       0       0       0       0       0       0       0       0
721          UI       0       0       0       0       0       0       0       0       0       0
722          UI       0       0       0       0       0       0       0       0       0       0
             *
             *
```

```
723          KK   CPJ34
724          KM        Combine Basin J34 and RCPJ33
725          HC       2
             *
             *
             *

726          KK  RCPJ34
727          KM        Route flow from Basin J34 to CPJ35
728          RS       1    FLOW      -1
729          RC   0.050   0.045   0.050     880  0.0069
730          RX       0      30      45      70     170     195     310     500
731          RY     940     930     925     920     920     925     928     930
             *

732          KK     J35   BASIN
733          BA   0.668
734          LG    0.13    0.26    4.45    0.56      20
735          UI       0     990    1409     166       0       0       0       0       0       0
736          UI       0       0       0       0       0       0       0       0       0       0
737          UI       0       0       0       0       0       0       0       0       0       0
738          UI       0       0       0       0       0       0       0       0       0       0
739          UI       0       0       0       0       0       0       0       0       0       0
             *

740          KK   CPJ35
741          KM        Combine Basin J35 and RCPJ34
742          HC       2
             *
             *
```



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

743          KK     J51   BASIN
744          BA   0.166
745          LG    0.34    0.34    4.00    0.48      61
746          UI       0     380     248       0       0       0       0       0       0       0
747          UI       0       0       0       0       0       0       0       0       0       0
748          UI       0       0       0       0       0       0       0       0       0       0
749          UI       0       0       0       0       0       0       0       0       0       0
750          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

751          KK  RCPJ51
752          KM        Route flow from Basin J51 to CPJ52
753          KM        This Route is a typical section for Sheet Flow Farmland
754          RS       2    FLOW      -1
755          RC   0.050   0.045   0.050    2201  0.0045
756          RX       0     500     600     620     720     740     840    1340
757          RY       5       3       1       0       0       1       3       5
             *

758          KK     J52   BASIN
759          BA   0.182
760          LG    0.46    0.28    4.45    0.51       5
761          UI       0      13      51      78     113     157     110      78      48      23
762          UI      15       6       4       4       0       0       0       0       0       0
763          UI       0       0       0       0       0       0       0       0       0       0
764          UI       0       0       0       0       0       0       0       0       0       0
765          UI       0       0       0       0       0       0       0       0       0       0
             *

766          KK   CPJ52
767          KM        Combine Basin J52 and RCPJ51
768          HC       2
             *
             *

769          KK     J54   BASIN
770          BA   0.219
771          LG    0.10    0.25    4.40    0.60      16
772          UI       0     667     177       0       0       0       0       0       0       0
773          UI       0       0       0       0       0       0       0       0       0       0
774          UI       0       0       0       0       0       0       0       0       0       0
775          UI       0       0       0       0       0       0       0       0       0       0
776          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

777          KK  DUMMY3
778          KM        Combine Hydrographs to eliminate errors in output.
779          HC       5
             *
             *
```



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

780          KK     X01   BASIN
781          BA   1.514
782          LG    0.10    0.25    4.50    0.57      48
783          UI       0    1441    3350     923     135       0       0       0       0       0
784          UI       0       0       0       0       0       0       0       0       0       0
785          UI       0       0       0       0       0       0       0       0       0       0
786          UI       0       0       0       0       0       0       0       0       0       0
787          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

788          KK  RCPX01
789          KM        Route flow from Basin X01 to CPX02
```

```
790          RS       1    FLOW      -1
791          RC   0.050   0.045   0.050    4035  0.0124
792          RX       0      59      91     191     252     319     419     475
793          RY   976.2     970     970     970     970   973.3   977.6     980
             *

794          KK     X02   BASIN
795          BA   1.497
796          LG    0.18    0.28    4.50    0.50      45
797          UI       0     676    2132    2005     722     180      76       0       0       0
798          UI       0       0       0       0       0       0       0       0       0       0
799          UI       0       0       0       0       0       0       0       0       0       0
800          UI       0       0       0       0       0       0       0       0       0       0
801          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

802          KK   CPX02
803          KM        Combine Basin X02 and RCPX01
804          HC       2
             *

805          KK     X03   BASIN
806          BA   1.003
807          LG    0.10    0.25    4.20    0.68      54
808          UI       0    2530    1288       0       0       0       0       0       0       0
809          UI       0       0       0       0       0       0       0       0       0       0
810          UI       0       0       0       0       0       0       0       0       0       0
811          UI       0       0       0       0       0       0       0       0       0       0
812          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

813          KK  RCPX03
814          KM        Route flow from Basin X03 to CPX04
815          RS       3    FLOW      -1
816          RC   0.050   0.045   0.050   12155  0.0177
817          RX       0     125     227     257     421     424     636     720
818          RY    1150    1120    1086    1080    1061    1060  1074.9    1080
             *
```



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

819          KK     X04   BASIN
820          BA   0.965
821          LG    0.21    0.28    4.65    0.41      39
822          UI       0     462    1463    1251     418      97       0       0       0       0
823          UI       0       0       0       0       0       0       0       0       0       0
824          UI       0       0       0       0       0       0       0       0       0       0
825          UI       0       0       0       0       0       0       0       0       0       0
826          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

827          KK   CPX04
828          KM        Combine Basin X04 and RCPX03
829          HC       2
             *
             *

830          KK     X14   BASIN
831          BA   0.193
832          LG    0.13    0.26    4.20    0.64      23
833          UI       0     257     425      56       0       0       0       0       0       0
834          UI       0       0       0       0       0       0       0       0       0       0
835          UI       0       0       0       0       0       0       0       0       0       0
836          UI       0       0       0       0       0       0       0       0       0       0
837          UI       0       0       0       0       0       0       0       0       0       0
             *

838          KK     X15   BASIN
839          BA   0.194
840          LG    0.10    0.25    4.10    0.72      44
841          UI       0     552     191       0       0       0       0       0       0       0
842          UI       0       0       0       0       0       0       0       0       0       0
843          UI       0       0       0       0       0       0       0       0       0       0
844          UI       0       0       0       0       0       0       0       0       0       0
845          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

846          KK     X06   BASIN
847          BA   1.027
848          LG    0.15    0.27    4.30    0.58      41
849          UI       0     700    2013    1002     203       0       0       0       0       0
850          UI       0       0       0       0       0       0       0       0       0       0
851          UI       0       0       0       0       0       0       0       0       0       0
852          UI       0       0       0       0       0       0       0       0       0       0
853          UI       0       0       0       0       0       0       0       0       0       0
             *

854          KK     X07   BASIN
855          KM        Customized XKSAT Values
856          BA   2.104
857          LG    0.11    0.25    3.95    0.74      56
858          UI       0     821    2496    3034    1268     377     100       0       0       0
859          UI       0       0       0       0       0       0       0       0       0       0
```



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

860          UI       0       0       0       0       0       0       0       0       0       0
861          UI       0       0       0       0       0       0       0       0       0       0
862          UI       0       0       0       0       0       0       0       0       0       0
```

```
                 *
863              KK     X05   BASIN
864              BA   0.316
865              LG    0.28    0.31    5.70    0.21       2
866              UI       0     128     394     448     180      52      15       0       0       0
867              UI       0       0       0       0       0       0       0       0       0       0
868              UI       0       0       0       0       0       0       0       0       0       0
869              UI       0       0       0       0       0       0       0       0       0       0
870              UI       0       0       0       0       0       0       0       0       0       0
                 *

871              KK  DUMMY4
872              KM        Combine Hydrographs to eliminate errors in output.
873              HC       7
                 *
                 *

874              KK     X12   BASIN
875              BA   0.237
876              LG    0.10    0.25    4.00    0.74      51
877              UI       0     636     269       0       0       0       0       0       0       0
878              UI       0       0       0       0       0       0       0       0       0       0
879              UI       0       0       0       0       0       0       0       0       0       0
880              UI       0       0       0       0       0       0       0       0       0       0
881              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

882              KK  RCPX12
883              KM        Route flow from Basin X12 to CPX17
884              KM        This Route is a typical section for Sheet Flow Route
885              RS       1    FLOW      -1
886              RC   0.050   0.045   0.050    2076  0.0169
887              RX       0     500     700     750     800     900    1100    1600
888              RY       6       4       2       0       0       2       4       6
                 *

889              KK     X16   BASIN
890              BA   0.277
891              LG    0.10    0.25    4.30    0.64      39
892              UI       0    1023       0       0       0       0       0       0       0       0
893              UI       0       0       0       0       0       0       0       0       0       0
894              UI       0       0       0       0       0       0       0       0       0       0
895              UI       0       0       0       0       0       0       0       0       0       0
896              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *
```



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

897              KK  RCPX16
898              KM        Route flow from Basin X16 to CPX17
899              KM        This Route is a typical section for Sheet Flow Route
900              RS       2    FLOW      -1
901              RC   0.050   0.045   0.050    3886  0.0090
902              RX       0     500     700     750     800     900    1100    1600
903              RY       6       4       2       0       0       2       4       6
                 *
                 *

904              KK     X17   BASIN
905              BA   0.462
906              LG    0.12    0.26    4.65    0.46      74
907              UI       0    1165     593       0       0       0       0       0       0       0
908              UI       0       0       0       0       0       0       0       0       0       0
909              UI       0       0       0       0       0       0       0       0       0       0
910              UI       0       0       0       0       0       0       0       0       0       0
911              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

912              KK   CPX17
913              KM        Combine Basin X17 and RCPX16 and RCPX12
914              HC       3
                 *
                 *

915              KK     X18   BASIN
916              BA   0.413
917              LG    0.21    0.29    4.60    0.42      38
918              UI       0     880     669       0       0       0       0       0       0       0
919              UI       0       0       0       0       0       0       0       0       0       0
920              UI       0       0       0       0       0       0       0       0       0       0
921              UI       0       0       0       0       0       0       0       0       0       0
922              UI       0       0       0       0       0       0       0       0       0       0
                 *

923              KK     X11   BASIN
924              BA   0.295
925              LG    0.10    0.25    4.55    0.55      28
926              UI       0     733     390       0       0       0       0       0       0       0
927              UI       0       0       0       0       0       0       0       0       0       0
928              UI       0       0       0       0       0       0       0       0       0       0
929              UI       0       0       0       0       0       0       0       0       0       0
930              UI       0       0       0       0       0       0       0       0       0       0
                 *
                 *

931              KK     X13   BASIN
932              BA   3.723
933              LG    0.10    0.25    4.20    0.68      34
934              UI       0    1305    3852    5486    2626     780     221       0       0       0
935              UI       0       0       0       0       0       0       0       0       0       0
```

```
936          UI       0       0       0       0       0       0       0       0       0       0
1                                                HEC-1 INPUT                                          PAGE 26

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

937          UI       0       0       0       0       0       0       0       0       0       0
938          UI       0       0       0       0       0       0       0       0       0       0
             *
             *

939          KK     X08   BASIN
940          KM         Customized XKSAT Values
941          BA   0.395
942          LG    0.10    0.25    3.95    0.76      70
943          UI       0    1325       0       0       0       0       0       0       0       0
944          UI       0       0       0       0       0       0       0       0       0       0
945          UI       0       0       0       0       0       0       0       0       0       0
946          UI       0       0       0       0       0       0       0       0       0       0
947          UI       0       0       0       0       0       0       0       0       0       0
             *

948          KK     X09   BASIN
949          KM         Customized XKSAT Values
950          BA   0.348
951          LG    0.12    0.26    3.95    0.74      70
952          UI       0    1205       0       0       0       0       0       0       0       0
953          UI       0       0       0       0       0       0       0       0       0       0
954          UI       0       0       0       0       0       0       0       0       0       0
955          UI       0       0       0       0       0       0       0       0       0       0
956          UI       0       0       0       0       0       0       0       0       0       0
             *

957          KK     X10   BASIN
958          KM         Customized XKSAT Values
959          BA   0.213
960          LG    0.10    0.25    3.95    0.76      70
961          UI       0     778       0       0       0       0       0       0       0       0
962          UI       0       0       0       0       0       0       0       0       0       0
963          UI       0       0       0       0       0       0       0       0       0       0
964          UI       0       0       0       0       0       0       0       0       0       0
965          UI       0       0       0       0       0       0       0       0       0       0
             *

966          KK  DUMMY5
967          KM         Combine Hydrographs to eliminate errors in output.
968          HC       8
             *
969          ZZ
1
             SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW

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

   27         J04
              .
              .
   38         .------->   DVJ04
   35       DJ04
              V
              V
   41      RCPJ04
              .
              .
   47         .         J07
              .           .
              .           .
   55       CPJ07............
              V
              V
   58      RCPJ07
              .
              .
   64         .         J11
              .           .
              .           .
   72       CPJ11............
              V
              V
   75      RCPJ11
              .
              .
   81         .         J16
              .           .
              .           .
   89       CPJ16............
              V
              V
   92      RCPJ16
              .
              .
  100         .           .<-------   DVJ04
   98         .       DRJ04
              .          V
              .          V
  101         .       RDJ04
              .          .
              .          .
  107         .          .         J06
              .          .           .
              .          .           .
  115         .       CPJ06............
              .          V
              .          V
  118         .      RCPJ06
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                .          .
                .          .
125             .          .        J10
                .          .          .
                .          .          .
133             .      CPJ10...........
                .          V
                .          V
136             .     RCPJ10
                .          .
                .          .
142             .          .        J15
                .          .          .
                .          .          .
150             .      CPJ15...........
                .          V
                .          V
153             .     RCPJ15
                .          .
                .          .
159             .          .        J08
                .          .          V
                .          .          V
167             .          .     RCPJ08
                .          .          .
                .          .          .
173             .          .          .        J12
                .          .          .          .
                .          .          .          .
181             .          .      CPJ12...........
                .          .          V
                .          .          V
184             .          .     RCPJ12
                .          .          .
                .          .          .
190             .          .          .        J13
                .          .          .          V
                .          .          .          V
198             .          .          .     RCPJ13
                .          .          .          .
                .          .          .          .
204             .          .          .          .        J17
                .          .          .          .          .
                .          .          .          .          .
212             .          .      CPJ17......................
                .          .          V
                .          .          V
215             .          .     RCPJ17
                .          .          .
                .          .          .
221             .          .          .        J20
                .          .          .          .
                .          .          .          .
229         CPJ20..................................
                V
                V
232         RCPJ20
                .
                .
238             .        J18
                .          V
                .          V
246             .     RCPJ18
                .          .
                .          .
252             .          .        J21
                .          .          .
                .          .          .
260             .      CPJ21...........
                .          V
                .          V
263             .     RCPJ21
                .          .
                .          .
269             .          .        J22
                .          .          .
                .          .          .
277         CPJ22......................
                V
                V
280         RCPJ22
                .
                .
286             .        J39
                .          .
                .          .
294             .          .        J40
                .          .          V
                .          .          V
302             .          .     RCPJ40
                .          .          .
                .          .          .
308         CPJ39......................
                .
                .
311             .        J27
                .          .
                .          .
318             .          .        J28
                .          .          .
                .          .          .
325             .      CPJ27...........
                .          V
                .          V
328             .     RCPJ27
                .          .
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334          .           .        J37
             .           .          .
342          .      CPJ37............
             .           .
345          .           .        J36
             .           .          .
353          .           .          .        J38
             .           .          .          .
360          .           .          .          .        J41
             .           .          .          .          .
368          .           .          .          .          .        J42
             .           .          .          .          .          .
376     DUMMY1...........................................................
             .
             .
379          .        J01
             .         V
             .         V
387          .     RCPJ01
             .           .
             .           .        J14
             .           .          .
401          .           .          .        J25
             .           .          .         V
             .           .          .         V
409          .           .          .     RCPJ25
             .           .          .          .
             .           .          .          .
415          .      CPJ14........................
             .         V
             .         V
418          .     RCPJ14
             .           .
             .           .        J19
             .           .         V
             .           .         V
432          .           .     RCPJ19
             .           .          .
             .           .          .
438          .           .          .        J24
             .           .          .         V
             .           .          .         V
446          .           .          .     RCPJ24
             .           .          .          .
             .           .          .          .
452          .           .          .          .        J23
             .           .          .          .          .
             .           .          .          .          .
460          .      CPJ23...................................
             .         V
             .         V
463          .     RCPJ23
             .           .
             .           .
469          .           .       J29A
             .           .          .
             .           .          .
477          .           .          .       J29D
             .           .          .         V
             .           .          .         V
485          .           .          .     RCJ29D
             .           .          .          .
             .           .          .          .
491          .           .          .          .       J29C
             .           .          .          .         V
             .           .          .          .         V
499          .           .          .          .     RCJ29C
             .           .          .          .          .
             .           .          .          .          .
505          .           .          .          .          .        J29B
             .           .          .          .          .          .
             .           .          .          .          .          .
513          .     CPJ29A...............................................
             .         V
             .         V
516          .     RCJ29A
             .           .
             .           .
522          .           .       J43A
             .           .          .
             .           .          .
530          .           .          .       J43B
             .           .          .         V
             .           .          .         V
538          .           .          .     RCJ43B
             .           .          .          .
             .           .          .          .
544          .           .          .          .       J43C
             .           .          .          .         V
             .           .          .          .         V
552          .           .          .          .     RCJ43C
             .           .          .          .          .
             .           .          .          .          .
558          .     CPJ43A...................................
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561          .           .        J30
             .           .         V
             .           .         V
569          .           .     RCPJ30
             .           .          .
             .           .          .
575          .           .          .        J46
             .           .          .          .
             .           .          .          .
582          .           .      CPJ46............
             .           .          .
             .           .          .
585          .           .          .        J53
             .           .          .          V
             .           .          .          V
593          .           .          .      RCPJ53
             .           .          .          .
             .           .          .          .
599          .           .          .          .        J47
             .           .          .          .          .
             .           .          .          .          .
607          .           .          .      CPJ47............
             .           .          .          .
             .           .          .          .
610          .           .          .          .        J44
             .           .          .          .          .
             .           .          .          .          .
618          .           .          .          .          .        J45
             .           .          .          .          .          .
             .           .          .          .          .          .
626          .           .          .          .          .          .        J49
             .           .          .          .          .          .          .
             .           .          .          .          .          .          .
634          .           .          .          .          .          .          .        J50
             .           .          .          .          .          .          .          .
             .           .          .          .          .          .          .          .
642     DUMMY2.......................................................................................
             .
             .
645          .        J31
             .         V
             .         V
653          .     RCPJ31
             .          .
             .          .
659          .           .        J32
             .           .         V
             .           .         V
667          .           .     RCPJ32
             .           .          .
             .           .          .
673          .           .          .        J48
             .           .          .          .
             .           .          .          .
681          .      CPJ48........................
             .           .
             .           .
684          .           .        J26
             .           .         V
             .           .         V
692          .           .     RCPJ26
             .           .          .
             .           .          .
698          .           .          .        J33
             .           .          .          .
             .           .          .          .
706          .           .      CPJ33............
             .           .         V
             .           .         V
709          .           .     RCPJ33
             .           .          .
             .           .          .
715          .           .          .        J34
             .           .          .          .
             .           .          .          .
723          .           .      CPJ34............
             .           .         V
             .           .         V
726          .           .     RCPJ34
             .           .          .
             .           .          .
732          .           .          .        J35
             .           .          .          .
             .           .          .          .
740          .           .      CPJ35............
             .           .          .
             .           .          .
743          .           .          .        J51
             .           .          .          V
             .           .          .          V
751          .           .          .      RCPJ51
             .           .          .          .
             .           .          .          .
758          .           .          .          .        J52
             .           .          .          .          .
             .           .          .          .          .
766          .           .          .      CPJ52............
             .           .          .          .
             .           .          .          .
769          .           .          .          .        J54
             .           .          .          .          .
             .           .          .          .          .
777     DUMMY3.............................................
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780          .        X01
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                 .          V
                 .          V
  788            .      RCPX01
                 .          .
  794            .          .        X02
                 .          .          .
                 .          .          .
  802            .       CPX02...........
                 .          .
  805            .          .        X03
                 .          .          V
                 .          .          V
  813            .          .      RCPX03
                 .          .          .
                 .          .          .
  819            .          .          .        X04
                 .          .          .          .
                 .          .          .          .
  827            .          .       CPX04...........
                 .          .          .
                 .          .          .
  830            .          .          .        X14
                 .          .          .          .
                 .          .          .          .
  838            .          .          .          .        X15
                 .          .          .          .          .
                 .          .          .          .          .
  846            .          .          .          .          .        X06
                 .          .          .          .          .          .
                 .          .          .          .          .          .
  854            .          .          .          .          .          .        X07
                 .          .          .          .          .          .          .
                 .          .          .          .          .          .          .
  863            .          .          .          .          .          .          .        X05
                 .          .          .          .          .          .          .          .
                 .          .          .          .          .          .          .          .
  871            .      DUMMY4.......................................................................
                 .          .
                 .          .
  874            .          .        X12
                 .          .          V
                 .          .          V
  882            .          .      RCPX12
                 .          .          .
                 .          .          .
  889            .          .          .        X16
                 .          .          .          V
                 .          .          .          V
  897            .          .          .      RCPX16
                 .          .          .          .
                 .          .          .          .
  904            .          .          .          .        X17
                 .          .          .          .          .
                 .          .          .          .          .
  912            .          .       CPX17........................
                 .          .          .
                 .          .          .
  915            .          .          .        X18
                 .          .          .          .
                 .          .          .          .
  923            .          .          .          .        X11
                 .          .          .          .          .
                 .          .          .          .          .
  931            .          .          .          .          .        X13
                 .          .          .          .          .          .
                 .          .          .          .          .          .
  939            .          .          .          .          .          .        X08
                 .          .          .          .          .          .          .
                 .          .          .          .          .          .          .
  948            .          .          .          .          .          .          .        X09
                 .          .          .          .          .          .          .          .
                 .          .          .          .          .          .          .          .
  957            .          .          .          .          .          .          .          .        X10
                 .          .          .          .          .          .          .          .          .
                 .          .          .          .          .          .          .          .          .
  966            .      DUMMY5.......................................................................
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```
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************                                    *****************************************
 *                                       *                                    *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                    *    U.S. ARMY CORPS OF ENGINEERS       *
 *              JUN   1998               *                                    *    HYDROLOGIC ENGINEERING CENTER      *
 *            VERSION 4.1                *                                    *          609 SECOND STREET            *
 *                                       *                                    *       DAVIS, CALIFORNIA 95616         *
 *  RUN DATE   05OCT12  TIME  13:48:10   *                                    *           (916) 756-1104              *
 *                                       *                                    *                                       *
 *****************************************                                    *****************************************
```

Flood Control District of Maricopa County
SUB BASIN J - Rainbow Valley ADMP
Major Basin: J and X
100 Year Return Period
24 Hour Storm
Multiple Storms
Unit Hydrograph: S-Graph
08/20/2010

```
  11 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
```

```
                QSCAL          0.  HYDROGRAPH PLOT SCALE

 IT          HYDROGRAPH TIME DATA
                 NMIN         10  MINUTES IN COMPUTATION INTERVAL
                IDATE      1JAN99  STARTING DATE
                ITIME       1200  STARTING TIME
                   NQ        300  NUMBER OF HYDROGRAPH ORDINATES
               NDDATE      3JAN99  ENDING DATE
               NDTIME       1350  ENDING TIME
               ICENT          19  CENTURY MARK

            COMPUTATION INTERVAL    0.17 HOURS
                 TOTAL TIME BASE   49.83 HOURS

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

12 JD       INDEX STORM NO. 1
                 STRM        3.44  PRECIPITATION DEPTH
                 TRDA        0.00  TRANSPOSITION DRAINAGE AREA

13 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

23 JD       INDEX STORM NO. 2
                 STRM        3.27  PRECIPITATION DEPTH
                 TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

24 JD       INDEX STORM NO. 3
                 STRM        3.09  PRECIPITATION DEPTH
                 TRDA       30.00  TRANSPOSITION DRAINAGE AREA

 0 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

25 JD       INDEX STORM NO. 4
                 STRM        2.99  PRECIPITATION DEPTH
                 TRDA       60.00  TRANSPOSITION DRAINAGE AREA

 0 PI         PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00
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26 JD          INDEX STORM NO. 5
                     STRM        2.93  PRECIPITATION DEPTH
                     TRDA       90.00  TRANSPOSITION DRAINAGE AREA

 0 PI            PRECIPITATION PATTERN
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                   0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                   0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                   0.00      0.00      0.00      0.00
1
                                          RUNOFF SUMMARY
                                   FLOW IN CUBIC FEET PER SECOND
                                 TIME IN HOURS,  AREA IN SQUARE MILES
```

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	J04	502.	12.17	37.	10.	5.	0.39		
+	DIVERSION TO	DVJ04	192.	12.17	12.	3.	1.	0.39		
+	HYDROGRAPH AT	DJ04	311.	12.17	25.	7.	3.	0.39		
+	ROUTED TO	RCPJ04	142.	13.00	24.	7.	3.	0.39		
+	HYDROGRAPH AT	J07	472.	12.33	33.	9.	4.	0.45		
+	2 COMBINED AT	CPJ07	472.	12.33	56.	15.	7.	0.69		
+	ROUTED TO	RCPJ07	470.	12.33	56.	15.	7.	0.69		
+	HYDROGRAPH AT	J11	270.	12.33	18.	4.	2.	0.24		
+	2 COMBINED AT	CPJ11	736.	12.33	74.	19.	9.	0.94		
+	ROUTED TO	RCPJ11	694.	12.33	74.	19.	9.	0.94		
+	HYDROGRAPH AT	J16	322.	12.33	23.	6.	3.	0.27		
+	2 COMBINED AT	CPJ16	1011.	12.33	96.	25.	12.	1.21		
+	ROUTED TO	RCPJ16	629.	12.67	96.	25.	12.	1.21		
+	HYDROGRAPH AT	DRJ04	192.	12.17	12.	3.	1.	0.39		
+	ROUTED TO	RDJ04	72.	13.17	12.	3.	1.	0.39		
+	HYDROGRAPH AT	J06	383.	12.17	27.	7.	3.	0.37		
+	2 COMBINED AT	CPJ06	382.	12.17	38.	10.	5.	0.52		
+	ROUTED TO	RCPJ06	212.	12.67	38.	10.	5.	0.52		
+	HYDROGRAPH AT	J10	323.	12.33	21.	5.	3.	0.29		
+	2 COMBINED AT	CPJ10	410.	12.33	59.	15.	7.	0.81		
+	ROUTED TO	RCPJ10	231.	13.17	58.	15.	7.	0.81		
+	HYDROGRAPH AT	J15	678.	12.33	53.	14.	7.	0.58		
+	2 COMBINED AT	CPJ15	675.	12.33	108.	29.	14.	1.39		
+	ROUTED TO	RCPJ15	382.	12.83	107.	29.	14.	1.39		
+	HYDROGRAPH AT	J08	155.	12.17	10.	3.	1.	0.10		
	ROUTED TO									

+		RCPJ08	132.	12.33	10.	3.	1.	0.10
+	HYDROGRAPH AT	J12	426.	12.33	31.	8.	4.	0.41
+	2 COMBINED AT	CPJ12	556.	12.33	40.	11.	5.	0.51
+	ROUTED TO	RCPJ12	230.	13.17	40.	11.	5.	0.51
+	HYDROGRAPH AT	J13	758.	12.33	65.	17.	8.	0.86
+	ROUTED TO	RCPJ13	465.	12.83	65.	17.	8.	0.86
+	HYDROGRAPH AT	J17	437.	12.50	40.	10.	5.	0.52
+	3 COMBINED AT	CPJ17	633.	13.00	143.	37.	18.	1.89
+	ROUTED TO	RCPJ17	564.	13.33	142.	37.	18.	1.89
+	HYDROGRAPH AT	J20	1111.	12.33	135.	44.	21.	0.71
+	4 COMBINED AT	CPJ20	1370.	12.83	466.	134.	65.	5.20
+	ROUTED TO	RCPJ20	1278.	13.00	465.	134.	65.	5.20
+	HYDROGRAPH AT	J18	748.	12.33	71.	19.	9.	0.86
+	ROUTED TO	RCPJ18	492.	12.83	71.	19.	9.	0.86
+	HYDROGRAPH AT	J21	351.	12.17	39.	12.	6.	0.25
+	2 COMBINED AT	CPJ21	515.	12.83	109.	31.	15.	1.11
+	ROUTED TO	RCPJ21	417.	13.17	108.	31.	15.	1.11
+	HYDROGRAPH AT	J22	1412.	12.50	208.	64.	31.	1.50
+	3 COMBINED AT	CPJ22	2572.	12.67	770.	226.	110.	7.81
+	ROUTED TO	RCPJ22	2239.	13.17	763.	226.	110.	7.81
+	HYDROGRAPH AT	J39	793.	12.67	107.	29.	14.	1.05
+	HYDROGRAPH AT	J40	1120.	12.33	107.	31.	15.	0.90
+	ROUTED TO	RCPJ40	1104.	12.33	107.	31.	15.	0.90
+	3 COMBINED AT	CPJ39	2390.	13.17	961.	284.	138.	9.76
+	HYDROGRAPH AT	J27	1015.	12.67	158.	44.	21.	1.42
+	HYDROGRAPH AT	J28	753.	12.50	100.	27.	13.	0.95
+	2 COMBINED AT	CPJ27	1738.	12.67	256.	71.	34.	2.37
+	ROUTED TO	RCPJ27	1625.	12.67	256.	71.	34.	2.37
+	HYDROGRAPH AT	J37	606.	12.67	77.	20.	10.	0.81
+	2 COMBINED AT	CPJ37	2222.	12.67	332.	91.	44.	3.18
+	HYDROGRAPH AT	J36	535.	12.50	57.	15.	7.	0.53
+	HYDROGRAPH AT	J38	2121.	12.50	241.	68.	33.	2.08
+	HYDROGRAPH AT	J41	364.	12.17	24.	7.	3.	0.18
+	HYDROGRAPH AT	J42	342.	12.17	23.	7.	3.	0.20
+	6 COMBINED AT	DUMMY1	6110.	12.50	1561.	453.	220.	15.92
+	HYDROGRAPH AT	J01	7284.	12.33	927.	295.	142.	7.18

+	ROUTED TO	RCPJ01	5326.	12.83	925.	294.	142.	7.18
+	HYDROGRAPH AT	J14	1930.	12.50	234.	71.	34.	2.13
+	HYDROGRAPH AT	J25	703.	12.33	87.	29.	14.	0.52
+	ROUTED TO	RCPJ25	651.	12.33	87.	29.	14.	0.52
+	3 COMBINED AT	CPJ14	6068.	12.67	1239.	391.	190.	9.83
+	ROUTED TO	RCPJ14	5859.	12.83	1239.	391.	190.	9.83
+	HYDROGRAPH AT	J19	124.	12.33	9.	2.	1.	0.10
+	ROUTED TO	RCPJ19	60.	12.83	9.	2.	1.	0.10
+	HYDROGRAPH AT	J24	320.	12.17	19.	5.	2.	0.19
+	ROUTED TO	RCPJ24	249.	12.17	19.	5.	2.	0.19
+	HYDROGRAPH AT	J23	383.	12.33	37.	11.	5.	0.31
+	4 COMBINED AT	CPJ23	5931.	12.83	1298.	407.	198.	10.43
+	ROUTED TO	RCPJ23	5473.	13.00	1297.	407.	198.	10.43
+	HYDROGRAPH AT	J29A	340.	12.50	39.	11.	6.	0.34
+	HYDROGRAPH AT	J29D	694.	12.17	63.	20.	9.	0.43
+	ROUTED TO	RCJ29D	586.	12.33	63.	20.	9.	0.43
+	HYDROGRAPH AT	J29C	1284.	12.33	127.	38.	18.	1.00
+	ROUTED TO	RCJ29C	1156.	12.33	127.	38.	18.	1.00
+	HYDROGRAPH AT	J29B	219.	12.17	20.	6.	3.	0.15
+	5 COMBINED AT	CPJ29A	5568.	13.00	1522.	475.	231.	12.35
+	ROUTED TO	RCJ29A	5182.	13.17	1521.	475.	231.	12.35
+	HYDROGRAPH AT	J43A	458.	12.33	42.	13.	6.	0.37
+	HYDROGRAPH AT	J43B	171.	12.17	16.	5.	3.	0.11
+	ROUTED TO	RCJ43B	128.	12.33	16.	5.	3.	0.11
+	HYDROGRAPH AT	J43C	225.	12.17	14.	4.	2.	0.12
+	ROUTED TO	RCJ43C	111.	12.50	14.	4.	2.	0.12
+	4 COMBINED AT	CPJ43A	5200.	13.17	1585.	494.	241.	12.95
+	HYDROGRAPH AT	J30	492.	12.33	60.	20.	10.	0.33
+	ROUTED TO	RCPJ30	372.	12.50	60.	20.	10.	0.33
+	HYDROGRAPH AT	J46	617.	12.33	74.	23.	11.	0.56
+	2 COMBINED AT	CPJ46	930.	12.50	133.	43.	21.	0.90
+	HYDROGRAPH AT	J53	88.	12.17	6.	2.	1.	0.05
+	ROUTED TO	RCPJ53	37.	12.67	6.	2.	1.	0.05
+	HYDROGRAPH AT	J47	509.	12.33	40.	10.	5.	0.46
+	2 COMBINED AT	CPJ47	518.	12.33	46.	12.	6.	0.51

+	HYDROGRAPH AT	J44	273.	12.17	15.	4.	2.	0.15
+	HYDROGRAPH AT	J45	491.	12.17	47.	15.	7.	0.32
+	HYDROGRAPH AT	J49	186.	12.33	17.	5.	2.	0.19
+	HYDROGRAPH AT	J50	805.	12.33	91.	30.	14.	0.59
+	8 COMBINED AT	DUMMY2	9921.	12.50	3273.	993.	483.	31.52
+	HYDROGRAPH AT	J31	651.	12.33	82.	28.	13.	0.45
+	ROUTED TO	RCPJ31	460.	12.67	81.	27.	13.	0.45
+	HYDROGRAPH AT	J32	480.	12.17	39.	12.	6.	0.32
+	ROUTED TO	RCPJ32	266.	12.50	39.	12.	6.	0.32
+	HYDROGRAPH AT	J48	854.	12.33	91.	26.	12.	0.87
+	3 COMBINED AT	CPJ48	1472.	12.50	209.	65.	31.	1.65
+	HYDROGRAPH AT	J26	962.	12.17	93.	32.	15.	0.51
+	ROUTED TO	RCPJ26	472.	12.67	93.	31.	15.	0.51
+	HYDROGRAPH AT	J33	1758.	12.33	186.	60.	29.	1.34
+	2 COMBINED AT	CPJ33	1896.	12.33	277.	91.	44.	1.85
+	ROUTED TO	RCPJ33	1655.	12.33	277.	91.	44.	1.85
+	HYDROGRAPH AT	J34	811.	12.17	71.	24.	11.	0.45
+	2 COMBINED AT	CPJ34	1918.	12.33	347.	114.	55.	2.31
+	ROUTED TO	RCPJ34	1966.	12.33	347.	114.	55.	2.31
+	HYDROGRAPH AT	J35	848.	12.17	72.	21.	10.	0.67
+	2 COMBINED AT	CPJ35	2677.	12.33	417.	135.	65.	2.97
+	HYDROGRAPH AT	J51	292.	12.17	30.	10.	5.	0.17
+	ROUTED TO	RCPJ51	197.	12.33	30.	10.	5.	0.17
+	HYDROGRAPH AT	J52	94.	12.83	14.	4.	2.	0.18
+	2 COMBINED AT	CPJ52	237.	12.33	43.	14.	7.	0.35
+	HYDROGRAPH AT	J54	351.	12.17	22.	6.	3.	0.22
+	5 COMBINED AT	DUMMY3	12942.	12.33	3858.	1181.	575.	36.71
+	HYDROGRAPH AT	X01	2101.	12.33	239.	78.	38.	1.51
+	ROUTED TO	RCPX01	1623.	12.33	239.	78.	38.	1.51
+	HYDROGRAPH AT	X02	1847.	12.33	230.	75.	36.	1.50
+	2 COMBINED AT	CPX02	3454.	12.33	467.	153.	74.	3.01
+	HYDROGRAPH AT	X03	1715.	12.17	164.	55.	26.	1.00
+	ROUTED TO	RCPX03	879.	12.50	164.	55.	26.	1.00
+	HYDROGRAPH AT	X04	1229.	12.33	142.	45.	22.	0.96
+	2 COMBINED AT	CPX04	1893.	12.33	304.	99.	48.	1.97
	HYDROGRAPH AT							

+		X14	233.	12.17	21.	6.	3.	0.19
+	HYDROGRAPH AT	X15	330.	12.17	28.	9.	4.	0.19
+	HYDROGRAPH AT	X06	1354.	12.33	146.	47.	23.	1.03
+	HYDROGRAPH AT	X07	2459.	12.33	351.	118.	57.	2.10
+	HYDROGRAPH AT	X05	363.	12.33	32.	8.	4.	0.32
+	7 COMBINED AT	DUMMY4	9760.	12.33	1339.	437.	211.	8.81
+	HYDROGRAPH AT	X12	406.	12.17	38.	12.	6.	0.24
+	ROUTED TO	RCPX12	283.	12.33	37.	12.	6.	0.24
+	HYDROGRAPH AT	X16	506.	12.17	37.	12.	6.	0.28
+	ROUTED TO	RCPX16	255.	12.33	37.	12.	6.	0.28
+	HYDROGRAPH AT	X17	888.	12.17	95.	32.	16.	0.46
+	3 COMBINED AT	CPX17	1298.	12.17	168.	56.	27.	0.98
+	HYDROGRAPH AT	X18	667.	12.17	59.	19.	9.	0.41
+	HYDROGRAPH AT	X11	470.	12.17	36.	11.	5.	0.29
+	HYDROGRAPH AT	X13	3580.	12.33	471.	150.	72.	3.72
+	HYDROGRAPH AT	X08	722.	12.17	67.	23.	11.	0.40
+	HYDROGRAPH AT	X09	658.	12.17	61.	21.	10.	0.35
+	HYDROGRAPH AT	X10	425.	12.17	39.	14.	7.	0.21
+	8 COMBINED AT	DUMMY5	14626.	12.33	2173.	710.	342.	15.18

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

100-Year 24-Hour Storm Study Area 4 HEC-1 Model

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*             JUN  1998                *
*           VERSION 4.1                *
*                                      *
*  RUN DATE   14JUN12  TIME  11:51:33  *
*                                      *
****************************************
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```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (916) 756-1104             *
*                                      *
****************************************
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
```

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

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

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1                                    HEC-1 INPUT                                    PAGE  1

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

   1          ID   Rainbow Valley ADMP Areas 1,2,3,4 FDS
   2          ID   Filename: StudyArea4.hc1
   3          ID   Revised: 06/14/12
   4          ID   Prepared by RBF and Baker
   5          ID   Description: Study Area 4 contains sub-basins from Watershed I
   6          ID   Modified Sub-basin I67 (I67A), RCPI66 (RCPI66), and CPI67 (CPI67A)
   7          ID
   8          ID   FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
   9          ID   WATERMAN WASH - Contract # FCD 2006C029
  10          ID
  11          ID   Prepared by:
  12          ID   URS Corporation
  13          ID   7720 N. 16th Street, Suite 100
  14          ID   Phoenix, Arizona   85020
  15          ID
  16          ID   01/09/09  Filename:  With Railroad.IH1
  17          ID            Last Revised: 06/01/11
  18          ID
  19          ID   1. The following model is modeled with the Union Pacific railroad
  20          ID      embankment located adjacent to SR-238.
  21          ID   2. The storm used was 100-year, 24-hour.
  22          ID   3. S-graph was the unit hydrograph.
  23          ID   4. Time step of 10 minutes.
  24          ID   5. A point rainfall of 3.4 inches from NOAA 14 with Maricopa County Areal
  25          ID      reduction.
  26          ID   6. Green-Ampt loss methods were used. Normal depth Channel routing.
  27          ID   7. The sub-basin parameters were generated using FCDMC's DDMSW software.
  28          ID   8. The contributing area was calculated by estimating the amount of flow
  29          ID      in each routing reach.
              *DIAGRAM
  30          IT      10                    300
  31          IO       5
  32          IN      15
              *
  33          JD   3.438  0.0001
  34          PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
  35          PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
  36          PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
  37          PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
  38          PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
  39          PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
  40          PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
  41          PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
  42          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
  43          PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
  44          JD   3.266    10.0
  45          JD   3.094    30.0
  46          JD   2.991    60.0
  47          JD   2.929    90.0
              * ******************************************************************************
              * Begin Watershed I
              * ******************************************************************************
1                                    HEC-1 INPUT                                    PAGE  2

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

  48          KK     I51
  49          KM        Runoff subbasin I51
  50          BA   0.144
  51          LG    0.25    0.31    4.30    0.50       0
  52          UI       0     172     324      53       0       0       0       0       0       0
              *
  53          KM    URS 2009

  54          KK  RCPI51
  55          KM        Route flow from CP I51 to CP I53
  56          RS       3    FLOW      -1
```

```
 57          RC   0.050   0.045   0.050    4034  0.0134
 58          KM       Typical Sheet Flow Route
 59          RX       0     500     700     750     800     900    1100    1600
 60          RY       6       4       2       0       0       2       4       6
             *
 61          KM    URS 2009

 62          KK     I53
 63          KM        Runoff subbasin I53
 64          BA   0.515
 65          LG    0.15    0.27    4.25    0.61       0
 66          UI       0     433    1104     383      60       0       0       0       0       0
             *

 67          KK   CPI53
 68          KM       Combine I51 with I53
 69          HC       2   0.659
             *
 70          KM    URS 2009

 71          KK  RCPI53
 72          KM       Route flow from CP I53 to CP I55
 73          RS       3    FLOW      -1
 74          RC   0.050   0.045   0.050    5589  0.0107
 75          KM       Typical Sheet Flow Route
 76          RX       0     500     700     750     800     900    1100    1600
 77          RY       6       4       2       0       0       2       4       6
             *
 78          KM    URS 2009

 79          KK     I55
 80          KM        Runoff subbasin I55
 81          BA   0.249
 82          LG    0.30    0.33    4.10    0.50       0
 83          UI       0     207     532     189      30       0       0       0       0       0
             *

 84          KK   CPI55
 85          KM       Combine I53 with I55
 86          HC       2   0.908
             *
 87          KM    URS 2009
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1 HEC-1 INPUT PAGE 3

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

 88          KK  RCPI55
 89          KM       Route flow from CP I55 to CP I57
 90          RS       2    FLOW      -1
 91          RC   0.050   0.045   0.050    3210  0.0093
 92          KM       Typical Sheet Flow Route
 93          RX       0     500     700     750     800     900    1100    1600
 94          RY       6       4       2       0       0       2       4       6
             *
 95          KM    URS 2009

 96          KK     I57
 97          KM        Runoff subbasin I57
 98          BA   0.190
 99          LG    0.35    0.35    4.70    0.30      23
100          UI       0     287     397      46       0       0       0       0       0       0
             *

101          KK   CPI57
102          KM       Combine I55 with I57
103          HC       2   1.098
             *
104          KM    URS 2009

105          KK  RCPI57
106          KM       Route flow from CP I57 to CP I72
107          RS       2    FLOW      -1
108          RC   0.050   0.045   0.050    2914  0.0086
109          KM       Typical Sheet Flow Route
110          RX       0     500     700     750     800     900    1100    1600
111          RY       6       4       2       0       0       2       4       6
             *
112          KM    URS 2009

113          KK     I72
114          KM        Runoff subbasin I72
115          BA   0.206
116          LG    0.35    0.35    4.50    0.35      12
117          UI       0     332     416      45       0       0       0       0       0       0
             *

118          KK   CPI72
119          KM       Combine I57 with I72
120          HC       2   1.304
             *
121          KM    URS 2009

122          KK  RCPI72
123          KM       Route flow from CP I72 to CP I60C
124          RS       4    FLOW      -1
125          RC   0.050   0.045   0.050    5793  0.0074
126          KM       Typical Sheet Flow Route
127          RX       0     500     700     750     800     900    1100    1600
128          RY       6       4       2       0       0       2       4       6
             *
```

1 HEC-1 INPUT PAGE 4

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

129          KM    URS 2009
```

```
130          KK    I60C
131          KM        Runoff subbasin I60C
132          BA   0.270
133          LG    0.35    0.35    4.30    0.40       0
134          UI       0     153     470     318      81      17       0       0       0       0
             *

135          KK  CPI60C
136          KM        Combine I60C with I72
137          HC       2
             *
138          KM    URS 2009

139          KK    I59
140          KM        Runoff subbasin I59
141          BA   0.099
142          LG    0.35    0.39    5.70    0.20      23
143          UI       0     242     134       0       0       0       0       0       0       0
             *
144          KM    URS 2009

145          KK  RCPI59
146          KM        Route flow from CP I59 to CP I60A
147          RS      12    FLOW      -1
148          RC   0.050   0.045   0.050    9289  0.0058
149          KM       Typical Sheet Flow Route
150          RX       0     500     700     750     800     900    1100    1600
151          RY       6       4       2       0       0       2       4       6
             *
152          KM    URS 2009

153          KK    I60B
154          KM        Runoff subbasin I60B
155          BA   0.102
156          LG    0.35    0.37    6.60    0.14      40
157          UI       0     357       0       0       0       0       0       0       0       0
             *
158          KM    URS 2009

159          KK  RCI60B
160          KM        Route flow from CP I60B to CP I60A
161          RS       4    FLOW      -1
162          RC   0.050   0.045   0.050    9401  0.0074
163          KM       Typical Sheet Flow Route
164          RX       0     500     700     750     800     900    1100    1600
165          RY       6       4       2       0       0       2       4       6
             *
166          KM    URS 2009
```



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

167          KK    I60A
168          KM        Runoff subbasin I60A
169          BA   0.976
170          LG    0.31    0.32    5.00    0.29      27
171          UI       0     355    1060    1427     655     199      50       0       0       0
             *

172          KK  CPI60B
173          KM        Combine I60A, I59, I60 with I60C
174          HC       4
             *

175          KK     I52
176          KM     URS 2009
177          KM     Runoff subbasin I52
178          BA   0.318
179          LG    0.13    0.26    4.10    0.68       3
180          UI       0     678     515       0       0       0       0       0       0       0
             *
181          KM    URS 2009

182          KK  RCPI52
183          KM        Route flow from CP I52 to CP I54
184          RS       3    FLOW      -1
185          RC   0.050   0.045   0.050    5121  0.0162
186          KM       Typical Sheet Flow Route
187          RX       0     500     700     750     800     900    1100    1600
188          RY       6       4       2       0       0       2       4       6
             *
189          KM    URS 2009

190          KK     I54
191          KM        Runoff subbasin I54
192          BA   0.352
193          LG    0.11    0.25    4.00    0.73       0
194          UI       0     792     537       0       0       0       0       0       0       0
             *

195          KK   CPI54
196          KM        Combine I52 with I54
197          HC       2   0.613
             *
198          KM    URS 2009

199          KK  RCPI54
200          KM        Route flow from CP I54 to CP I56
201          RS       3    FLOW      -1
202          RC   0.050   0.045   0.050    5373  0.0114
203          KM       Typical Sheet Flow Route
204          RX       0     500     700     750     800     900    1100    1600
205          RY       6       4       2       0       0       2       4       6
             *
```

```
206          KM    URS 2009
1                                        HEC-1 INPUT                                                    PAGE  6
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

207          KK     I56
208          KM        Runoff subbasin I56
209          BA   0.432
210          LG    0.27    0.32    4.10    0.53       0
211          UI       0     417     958     257      37       0       0       0       0       0
             *

212          KK   CPI56
213          KM        Combine I54 with I56
214          HC       2   1.045
             *
215          KM    URS 2009

216          KK  RCPI56
217          KM        Route flow from CP I56 to CP I58B
218          RS      10    FLOW      -1
219          RC   0.050   0.045   0.050   11740  0.0080
220          RX       0     188     231     367     386     484     647     764
221          RY  1079.6  1076.5  1076.0  1076.0  1076.1  1076.1  1077.1  1077.6
             *
222          KM    URS 2009

223          KK    I58B
224          KM        Runoff subbasin I58B
225          BA   0.585
226          LG    0.35    0.35    4.35    0.39       9
227          UI       0     211     628     857     397     120      31       0       0       0
             *

228          KK  CPI58B
229          KM        Combine I56 with I58B
230          HC       2
             *
231          KM    URS 2009

232          KK  RCI58B
233          KM        Route flow from CP I58B to CP I58A
234          RS       9    FLOW      -1
235          RC   0.050   0.045   0.050    3103  0.0071
236          RX       0      75     125     187     200     210     218     386
237          RY  1031.3  1031.2  1031.1  1030.0  1030.0  1030.0  1030.2  1033.4
             *
238          KM    URS 2009

239          KK    I58A
240          KM        Runoff subbasin I58A
241          BA   0.129
242          LG    0.35    0.39    6.20    0.16      27
243          UI       0     191     272      32       0       0       0       0       0       0
             *
1                                        HEC-1 INPUT                                                    PAGE  7
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

244          KK  CPI58A
245          KM        Combine I58B with I58A
246          HC       2   1.790
             *
247          KM    URS 2009

248          KK  RCI58A
249          KM        Route flow from CP I58A to CP I64
250          RS       9    FLOW      -1
251          RC   0.050   0.045   0.050    1040  0.0058
252          KM        Typical Sheet Flow Small Wash
253          RX       0     600     700     706     711     717     817    1417
254          RY       6       4       3       0       0       3       4       6
             *
255          KM    URS 2009

256          KK     I64
257          KM        Runoff subbasin I64
258          BA   0.267
259          LG    0.31    0.30    6.60    0.15      32
260          UI       0     349     591      81       0       0       0       0       0       0
             *
261          KM    URS 2009

262          KK   CPI64
263          KM        Combine I58, with I64
264          HC       2
             *
265          KM    URS 2009

266          KK  RCPI64
267          KM        Route flow from CP I64 to CP I65
268          RS       3    FLOW      -1
269          RC   0.050   0.045   0.050    3559  0.0062
270          RX       0     140     253     353     391     441     499     536
271          RY  1009.4  1009.4  1009.2  1008.5  1008.3  1009.0  1009.6  1010.0
             *
272          KM    URS 2009

273          KK     I65
274          KM        Runoff subbasin I65
275          BA   0.307
276          LG    0.34    0.36    5.20    0.25       7
277          UI       0     217     613     287      56       0       0       0       0       0
             *
```

```
 278          KK   CPI65
 279          KM        Combine I64 with I65
 280          HC       2   2.792
              *
1                                          HEC-1 INPUT                                                    PAGE  8

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


 281          KK  CPI60A
 282          KM        COMBINE I65 WITH I60
 283          HC       2   5.120
              *
 284          KM    URS 2009

 285          KK  RCI60A
 286          KM        Route flow from CP I60A to CP I66
 287          RS       1    FLOW      -1
 288          RC   0.050   0.045   0.050    2269  0.0031
 289          RX       0    1131    1168    1321    1374    1419    1584    2623
 290          RY   995.3   994.0   993.8   992.6   992.0   992.0   994.9   995.5
              *
 291          KM    URS 2009

 292          KK     I66
 293          KM        Runoff subbasin I66
 294          BA   0.907
 295          LG    0.34    0.38    5.70    0.20      25
 296          UI       0     386    1204    1255     480     131      45       0       0       0
              *

 297          KK   CPI66
 298          KM        Combine I60 with I66
 299          HC       2   6.027
              *
 300          KM    URS 2009

 301          KK  RCPI66
 302          KM        Route flow from CP I66 to CP I67A
 303          KM        RBF/Baker Revised length and slope
 304          RS       5    FLOW      -1
 305          RC   0.050   0.045   0.050    4240  0.0038
 306          RX       0    2068    2180    2201    2309    2356    2454    4485
 307          RY   980.0   978.0   976.8   976.7   978.0   978.4   978.9   980.1
              *
 308          KM    URS 2009

 309          KK    I67A
 310          KM        Runoff subbasin I67A
 311          KM        RBF/Baker Revised BA, LG, and UI
 312          BA   0.835
 313          LG    0.35    0.36    5.00    0.27      14
 314          UI       0     412    1303    1066     339      79       0       0       0       0
              *

 315          KK  CPI67A
 316          KM        COMBINE RCPI66 WITH I67A
 317          KM        RBF/Baker Revised
 318          HC       2
              *
 319          ZZ
1
              SCHEMATIC DIAGRAM OF STREAM NETWORK
 INPUT
  LINE     (V) ROUTING          (--->) DIVERSION OR PUMP FLOW
                                 .
   NO.     (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   48         I51
               V
               V
   54       RCPI51
               .
               .
   62           .         I53
               .            .
               .            .
   67        CPI53............
               V
               V
   71       RCPI53
               .
               .
   79           .         I55
               .            .
               .            .
   84        CPI55............
               V
               V
   88       RCPI55
               .
               .
   96           .         I57
               .            .
               .            .
  101        CPI57............
               V
               V
  105       RCPI57
               .
               .
  113           .         I72
               .            .
               .            .
  118        CPI72............
```

```
                V
                V
122        RCPI72
                .
                .
130             .        I60C
                .           .
                .           .
135        CPI60C............
                .
                .
139             .        I59
                .          V
                .          V
145             .      RCPI59
                .           .
                .           .
153             .           .        I60B
                .           .          V
                .           .          V
159             .           .      RCI60B
                .           .           .
                .           .           .
167             .           .           .        I60A
                .           .           .          .
                .           .           .          .
172        CPI60B...................................
                .
                .
175             .         I52
                .          V
                .          V
182             .      RCPI52
                .           .
                .           .
190             .           .         I54
                .           .           .
                .           .           .
195             .       CPI54............
                .          V
                .          V
199             .      RCPI54
                .           .
                .           .
207             .           .         I56
                .           .           .
                .           .           .
212             .       CPI56............
                .          V
                .          V
216             .      RCPI56
                .           .
                .           .
223             .           .        I58B
                .           .           .
                .           .           .
228             .      CPI58B............
                .          V
                .          V
232             .      RCI58B
                .           .
                .           .
239             .           .        I58A
                .           .           .
                .           .           .
244             .      CPI58A............
                .          V
                .          V
248             .      RCI58A
                .           .
                .           .
256             .           .         I64
                .           .           .
                .           .           .
262             .       CPI64............
                .          V
                .          V
266             .      RCPI64
                .           .
                .           .
273             .           .         I65
                .           .           .
                .           .           .
278             .       CPI65............
                .           .
                .           .
281        CPI60A............
                V
                V
285        RCI60A
                .
                .
292             .         I66
                .           .
                .           .
297         CPI66............
                V
                V
301        RCPI66
                .
                .
309             .        I67A
                .           .
                .           .
315        CPI67A............
```

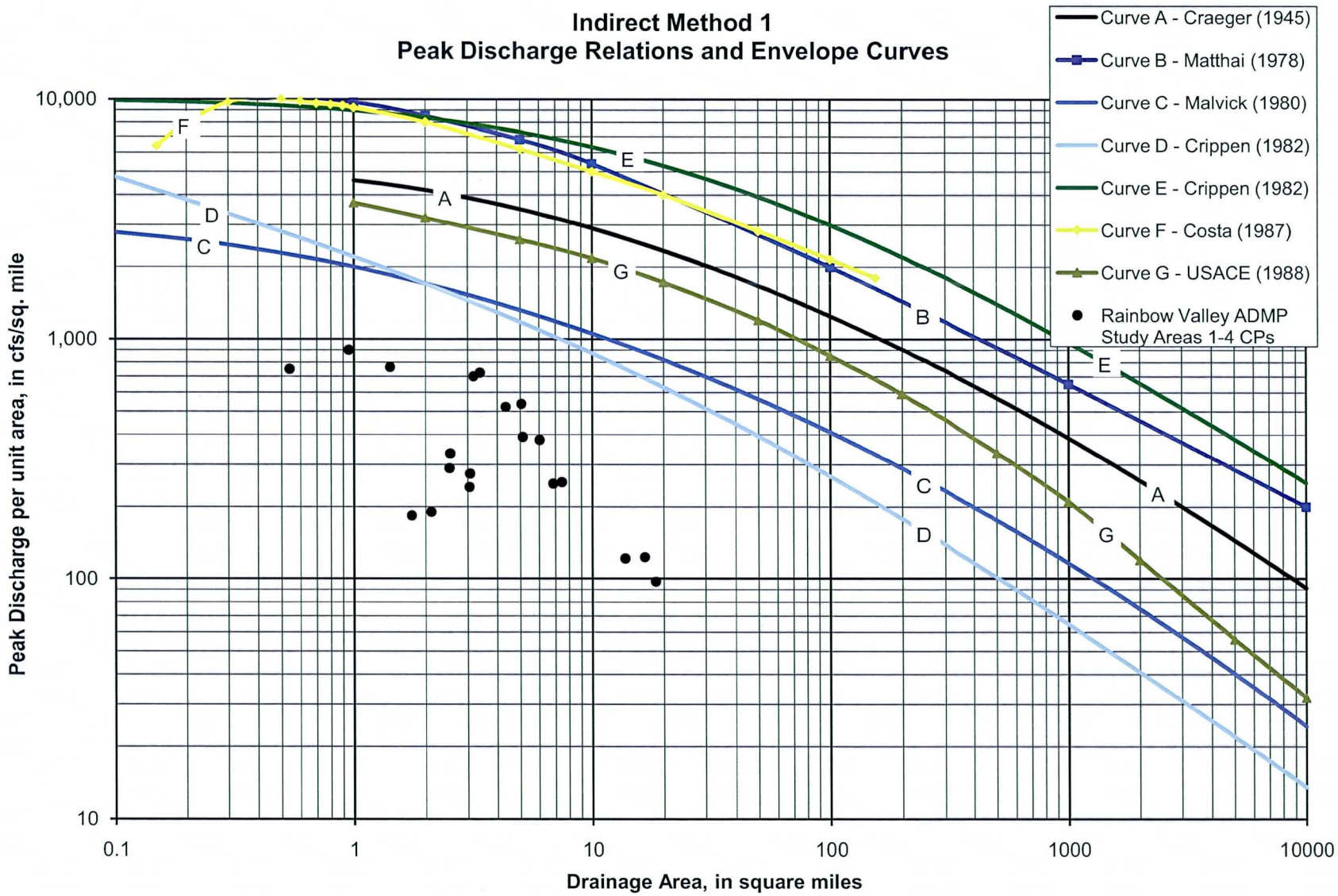
```
 (***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1*****************************************
 *                                       *
 *   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
 *              JUN  1998                *
 *            VERSION 4.1                *
 *                                       *
 *  RUN DATE   14JUN12  TIME  11:51:33   *
 *                                       *
 *****************************************

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

                    Rainbow Valley ADMP Areas 1,2,3,4 FDS
                    Filename: StudyArea4.hc1
                    Revised: 06/14/12
                    Prepared by RBF and Baker
                    Description: Study Area 4 contains sub-basins from Watershed I
                    Modified Sub-basin I67 (I67A), RCPI66 (RCPI66), and CPI67 (CPI67A)

                    FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
                    WATERMAN WASH - Contract # FCD 2006C029

                    Prepared by:
                    URS Corporation
                    7720 N. 16th Street, Suite 100
                    Phoenix, Arizona   85020

                    01/09/09  Filename:  with Railroad.IH1
                              Last Revised: 06/01/11

                    1. The following model is modeled with the Union Pacific railroad
                       embankment located adjacent to SR-238.
                    2. The storm used was 100-year, 24-hour.
                    3. S-graph was the unit hydrograph.
                    4. Time step of 10 minutes.
                    5. A point rainfall of 3.4 inches from NOAA 14 with Maricopa County Areal
                       reduction.
                    6. Green-Ampt loss methods were used. Normal depth Channel routing.
                    7. The sub-basin parameters were generated using FCDMC's DDMSW software.
                    8. The contributing area was calculated by estimating the amount of flow
                       in each routing reach.

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

    IT          HYDROGRAPH TIME DATA
                       NMIN         10  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME       0000  STARTING TIME
                         NQ        300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      3    0  ENDING DATE
                     NDTIME       0150  ENDING TIME
                      ICENT         19  CENTURY MARK

                 COMPUTATION INTERVAL    0.17 HOURS
                      TOTAL TIME BASE   49.83 HOURS

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

 33 JD          INDEX STORM NO. 1
                       STRM       3.44  PRECIPITATION DEPTH
                       TRDA       0.00  TRANSPOSITION DRAINAGE AREA

 34 PI            PRECIPITATION PATTERN
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                    0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00

 44 JD          INDEX STORM NO. 2
                       STRM       3.27  PRECIPITATION DEPTH
                       TRDA      10.00  TRANSPOSITION DRAINAGE AREA

  0 PI            PRECIPITATION PATTERN
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                    0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                    0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                    0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
```

```
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

45 JD         INDEX STORM NO. 3
                STRM        3.09  PRECIPITATION DEPTH
                TRDA       30.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

46 JD         INDEX STORM NO. 4
                STRM        2.99  PRECIPITATION DEPTH
                TRDA       60.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

47 JD         INDEX STORM NO. 5
                STRM        2.93  PRECIPITATION DEPTH
                TRDA       90.00  TRANSPOSITION DRAINAGE AREA

 0 PI           PRECIPITATION PATTERN
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.01      0.01      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.02      0.02      0.07
                0.13      0.18      0.03      0.02      0.02      0.02      0.01      0.01      0.01      0.01
                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

1
                                    RUNOFF SUMMARY
                              FLOW IN CUBIC FEET PER SECOND
                           TIME IN HOURS,  AREA IN SQUARE MILES

                                          PEAK    TIME OF     AVERAGE FLOW FOR MAXIMUM PERIOD      BASIN    MAXIMUM    TIME OF
          OPERATION        STATION       FLOW     PEAK                                           AREA     STAGE    MAX STAGE
+                                                            6-HOUR     24-HOUR     72-HOUR
          HYDROGRAPH AT
+                             I51        153.    12.33        10.          3.          1.       0.14
          ROUTED TO
+                           RCPI51        88.    12.67        10.          3.          1.       0.14
          HYDROGRAPH AT
+                             I53        544.    12.33        35.          9.          4.       0.51
          2 COMBINED AT
+                           CPI53        573.    12.33        45.         11.          5.       0.66
          ROUTED TO
+                           RCPI53       321.    12.67        45.         11.          5.       0.66
          HYDROGRAPH AT
+                             I55        271.    12.33        17.          4.          2.       0.25
          2 COMBINED AT
+                           CPI55        333.    12.33        62.         16.          7.       0.91
          ROUTED TO
+                           RCPI55       308.    12.83        62.         16.          7.       0.91
          HYDROGRAPH AT
+                             I57        272.    12.17        24.          7.          3.       0.19
          2 COMBINED AT
```

+		CPI57	317.	12.83	85.	22.	11.	1.10
+	ROUTED TO	RCPI57	303.	13.00	85.	22.	11.	1.10
+	HYDROGRAPH AT	I72	277.	12.17	21.	6.	3.	0.21
+	2 COMBINED AT	CPI72	395.	12.33	105.	28.	14.	1.30
+	ROUTED TO	RCPI72	301.	13.00	104.	28.	14.	1.30
+	HYDROGRAPH AT	I60C	289.	12.33	20.	5.	2.	0.27
+	2 COMBINED AT	CPI60C	321.	12.33	124.	33.	16.	1.57
+	HYDROGRAPH AT	I59	171.	12.17	13.	4.	2.	0.10
+	ROUTED TO	RCPI59	54.	13.50	13.	4.	2.	0.10
+	HYDROGRAPH AT	I60B	200.	12.17	15.	5.	2.	0.10
+	ROUTED TO	RCI60B	41.	13.17	15.	5.	2.	0.10
+	HYDROGRAPH AT	I60A	1084.	12.33	129.	39.	19.	0.98
+	4 COMBINED AT	CPI60B	1405.	12.33	275.	80.	39.	2.75
+	HYDROGRAPH AT	I52	388.	12.17	22.	6.	3.	0.32
+	ROUTED TO	RCPI52	197.	12.50	22.	6.	3.	0.32
+	HYDROGRAPH AT	I54	422.	12.17	22.	5.	3.	0.35
+	2 COMBINED AT	CPI54	443.	12.17	44.	11.	5.	0.61
+	ROUTED TO	RCPI54	259.	12.67	44.	11.	5.	0.61
+	HYDROGRAPH AT	I56	461.	12.33	30.	7.	4.	0.43
+	2 COMBINED AT	CPI56	545.	12.33	73.	18.	9.	1.04
+	ROUTED TO	RCPI56	222.	14.00	70.	18.	9.	1.04
+	HYDROGRAPH AT	I58B	531.	12.33	54.	15.	7.	0.58
+	2 COMBINED AT	CPI58B	526.	12.33	118.	33.	16.	1.63
+	ROUTED TO	RCI58B	465.	12.67	117.	33.	16.	1.63
+	HYDROGRAPH AT	I58A	200.	12.17	18.	5.	3.	0.13
+	2 COMBINED AT	CPI58A	475.	12.67	133.	38.	18.	1.79
+	ROUTED TO	RCI58A	458.	13.00	133.	38.	18.	1.79
+	HYDROGRAPH AT	I64	420.	12.17	41.	12.	6.	0.27
+	2 COMBINED AT	CPI64	580.	12.33	171.	50.	24.	2.06
+	ROUTED TO	RCPI64	419.	13.17	169.	50.	24.	2.06
+	HYDROGRAPH AT	I65	394.	12.33	31.	8.	4.	0.31
+	2 COMBINED AT	CPI65	605.	12.33	198.	58.	28.	2.79
+	2 COMBINED AT	CPI60A	2001.	12.33	469.	137.	67.	5.12
+	ROUTED TO	RCI60A	1459.	12.67	467.	137.	67.	5.12
+	HYDROGRAPH AT	I66	1109.	12.33	121.	36.	17.	0.91
+	2 COMBINED AT	CPI66	2290.	12.50	581.	172.	84.	6.03

```
+          ROUTED TO
                        RCPI66     1693.   13.17       580.       172.       84.      6.03
+          HYDROGRAPH AT
                          I67A      997.   12.33        91.        26.       12.      0.83
+          2 COMBINED AT
                        CPI67A     1713.   13.17       664.       197.       96.      6.86

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

Indirect Method Comparison Graphs

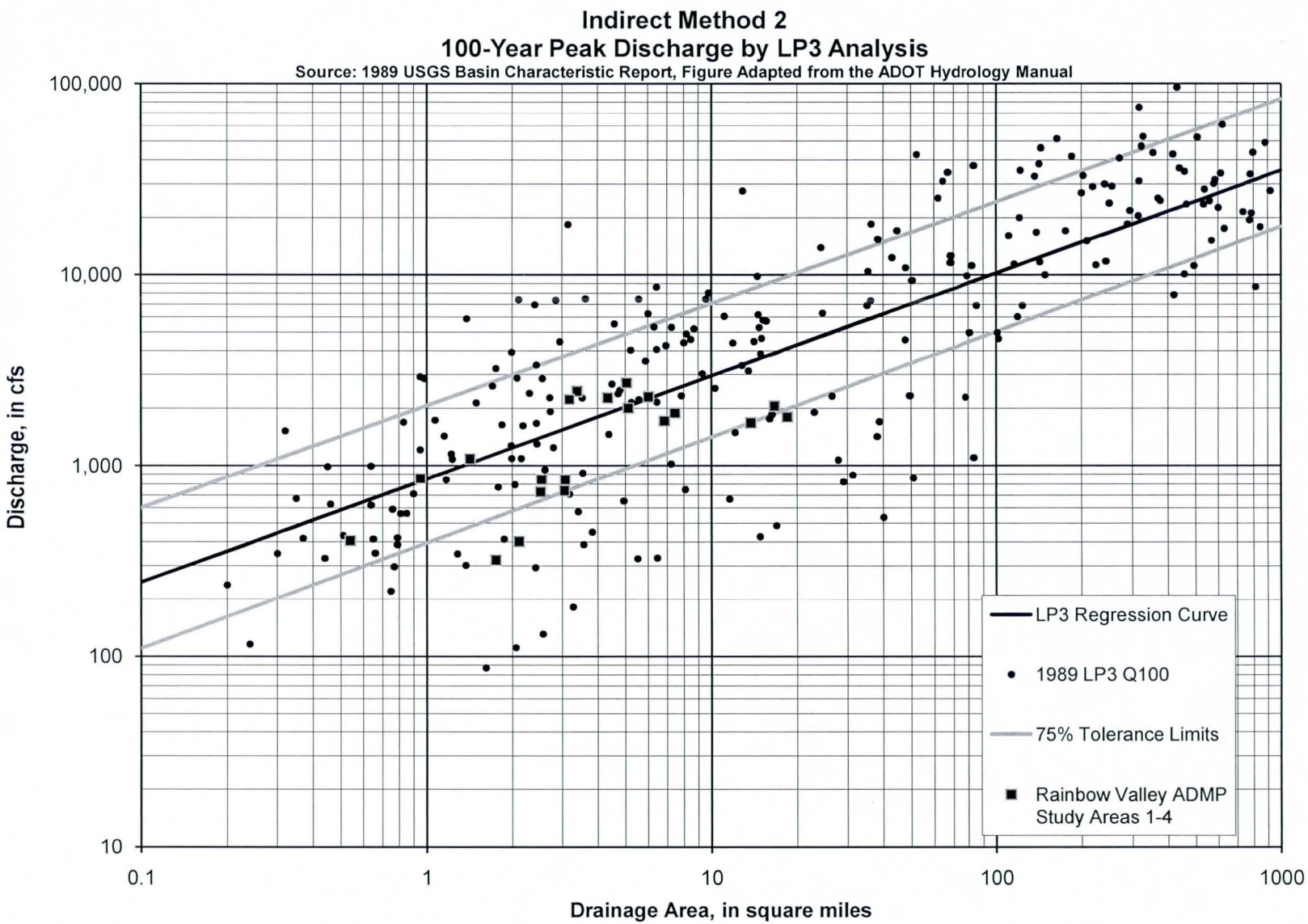

Indirect Method 1
Peak Discharge Relations and Envelope Curves
Curve A - Craeger (1945)
Curve B - Matthai (1978)
Curve C - Malvick (1980)
Curve D - Crippen (1982)
Curve E - Crippen (1982)
Curve F - Costa (1987)
Curve G - USACE (1988)
Rainbow Valley ADMP Study Areas 1-4 CPs
Peak Discharge per unit area, in cfs/sq. mile
10,000
1,000
100
10
0.1
1
10
100
1000
10000
Drainage Area, in square miles
A
B
C
D
E
F
G

Indirect Method No. 1 – Unit Peak Discharge Curves

Brief description of each curve:

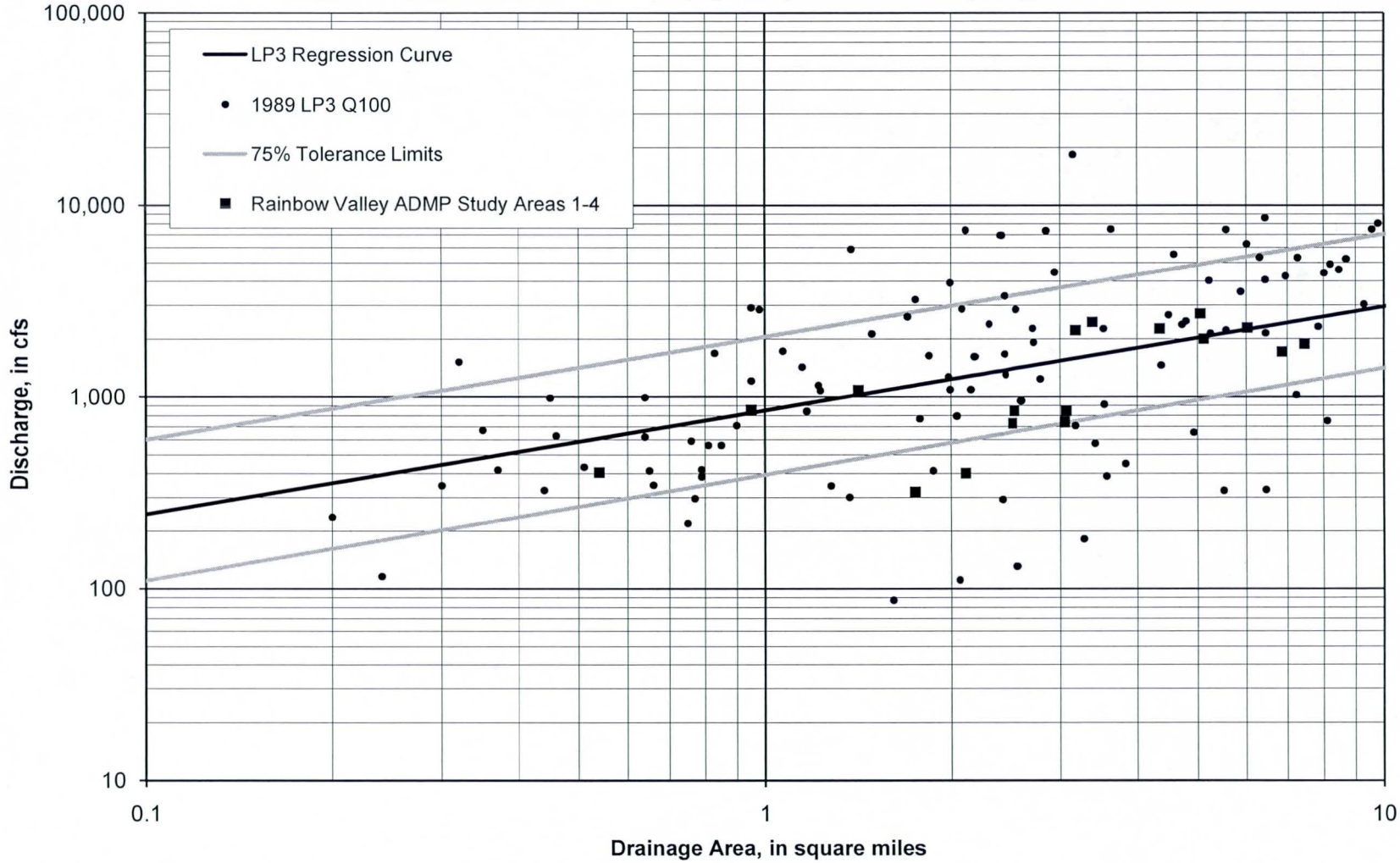
A. An envelope curve, based on a compilation of unusual flood discharges in the United States and abroad (data prior to 1941), by Craeger et al. (1945).
B. An envelope curve of extreme floods in Arizona and the Rocky Mountain region developed by Matthai and published by Roeske (1978).
C. An envelope curve of peak streamflow data developed for Arizona by Malvick (1980).
D. An envelope curve of peak streamflow data for the Little Colorado River basin in Northern Arizona developed by Crippen (1982).
E. An envelope curve of peak streamflow data for Central and Southern Arizona developed by Crippen (1982).
F. An envelope curve of the largest floods in the semi-arid Western United States developed by Costa (1987).
G. An envelope curve of peak discharges for Arizona, Nevada, and New Mexico developed by the U.S. Army Corps of Engineers (1988).

Please note that the curves represent envelopes of maximum observed flood discharges for different hydrologic regions.


Indirect Method 2
100-Year Peak Discharge by LP3 Analysis
Source: 1989 USGS Basin Characteristic Report, Figure Adapted from the ADOT Hydrology Manual
100,000
10,000
1,000
100
10
Discharge, in cfs
0.1
1
10
100
1000
Drainage Area, in square miles
LP3 Regression Curve
1989 LP3 Q100
75% Tolerance Limits
Rainbow Valley ADMP Study Areas 1-4

Indirect Method 2 (Enlarged)
100-Year Peak Discharge by LP3 Analysis

Source: 1989 USGS Basin Characteristic Report, Figure Adapted from the ADOT Hydrology Manual



Appendix E Hydraulic Analysis Supporting Documentation

E.1 Roughness Coefficient Estimation

MANNING'S n VALUE DETERMINATIONS

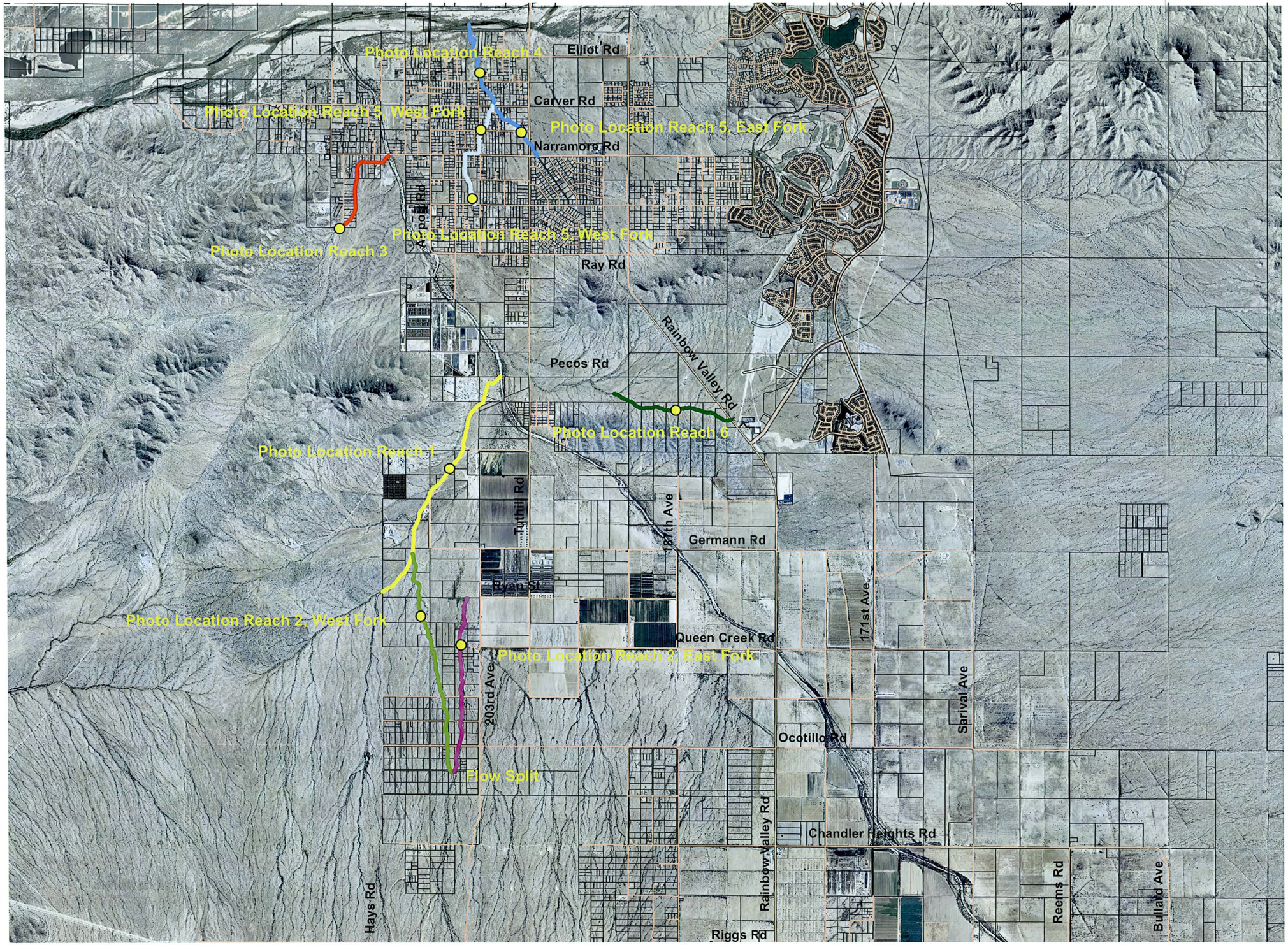
I. INTRODUCTION

The Manning's *n* values chosen for the channel and the overbanks of Study Areas 1, 2, 3, and 4 are based on the methodology outlined in the *Selection of Manning's Roughness Coefficient for Natural and Constructed Vegetated and Non-Vegetated Channels, and Vegetation Maintenance Plan Guidelines for Vegetated Channels in Central Arizona* (the *Manning's Manual*) prepared by the United States Geological Survey (USGS) for the Flood Control District of Maricopa County (FCDMC) dated 2006.

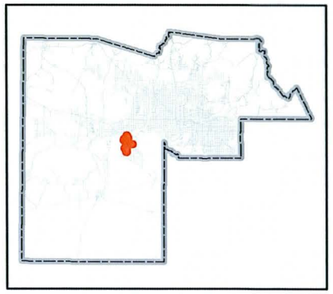
RBF and Baker staff conducted a field visit on April 26, 2012 to determine the Manning's n values used for this Floodplain Delineation Study. Contained within this section is a sampling of some of the photos that were used to establish the Manning's *n* values.

II. METHODOLOGY

The Manning's *n* values were based on inspection of the field conditions, aerial imagery, and field photographs. Six hydraulically differentiable reaches (referred to as Reaches 1 through 6) were identified within the four study areas. Overall, the characteristics of each of the channels vary by the amount of braiding and meandering, erosion, and the amount of vegetation in the overbanks. Most of the channel material consists of gravel with little exposed bedrock and sparse vegetation. Study Areas 1, 2, and 4 have washes composed of coarse gravel. Only Study Area 3 is composed of firm soil. The overbanks are fairly consistent with firm soils and moderate vegetation. The extents of each reach are depicted on Figure 1, along with the locations of the selected photographs that represent typical cross-sections of each of the reaches.



Flood Control District of Maricopa County



Rainbow Valley ADMP Areas 1-4
Floodplain Delineation Study

Legend

- Photo Locations
- Wash 1S2WS18A (J27)
- Wash 1S2WS18B (J37)
- Wash 1S2WS31 (A56)
- Wash 1S2WS31B (I70)
- Wash 1S3WS24A (A60)
- Wash 2S2WS7A (A52)
- Wash 2S2WS7B (A51)
- Streets
- Parcels

0 1,2502,500 5,000 Feet

1 inch = 5,000 feet

Photo Locations n Value Determination

RBF CONSULTING
PLANNING ▪ DESIGN ▪ CONSTRUCTION
2929 NORTH CENTRAL AVENUE, SUITE 800
PHOENIX, ARIZONA 85012-2794
602-279-1234 FAX 602-279-1411 www.RBF.com

Flood Control District of Maricopa County

DRAFTED	CHECKED
DLP	NEF

PROJECT NUMBER 45104771

DATE 8.22.12

FIGURE 1

File: H:\PDATA\45104771\GIS\n_Value_Locations.mxd

As specified in the *Manning's Manual*, the Manning's coefficient is comprised of coefficients that describe the bed material (n_0), irregularity of the channel (n_1), the variation in channel cross-section (n_2), the effect of obstructions (n_3), the amount of vegetation (n_4), and the degree of meandering (m). The degree of meandering ranges from 1 to 1.3 and is multiplied to the sum of the rest of the coefficients to compute the final n-value for the reach. This determination is made once for the channel and once for the overbanks. The equation for the composite n value is: $n = (n_0 + n_1 + n_2 + n_3 + n_4)\, m$.

Table 2 of the *Manning's Manual* was used to select base n-value (n_0) coefficients as a function of bed material for stable channels. Overall, the grain sizes range from fines and sand to coarse gravel and no rocks greater than 1-foot in diameter within the washes were identified, therefore this value remained fairly consistent throughout the reaches. In addition, because of the presence of rock fragments greater than ½ inch in diameter, these channels were not considered to be unstable. Overall, n_0 values ranged between 0.025 and 0.030.

The selection of the adjustment factors for channel n_1 through n_4 and m values were extrapolated from Table 3 from the *Manning's Manual*. For the channels, smooth bank conditions were met for all the reaches except for Reach 2; for the smooth reaches n_1 was set to 0.001. Reach 2 showed evidence of erosion and therefore the value was set to 0.004. Where channels were braided, the variation in the cross-section shapes (n_2) within the reaches was set to 0.005. This occurred mostly in Reaches 1 through 3. Study Areas 3 and 4, or the remaining reaches, braiding and channel variation was not as pronounced and therefore this value was set between 0.002 and 0.003. The obstruction value, n_3, varies between 0.002 and 0.005, depending on whether obstructions were encountered in the field and how large the obstruction. Most obstructions were located within Reach 5, or the developed area of Study Area 3. Here, the value was set to 0.005. Vegetation within the wash bottoms was negligible but along the channel banks some trees and tall brush were present. To account for this variation, the n_4 value was determined at the bottom and along the banks separately and then weighted linearly to determine a total value. The n_4 value within the channels was set to 0.001 for Reaches 2 and 6, and set to 0.005 for Reach 5 because of the amount of planted trees within

the developed areas. The degree of meandering was fairly high among all of the reaches, varying between 1.10 and 1.20.

Overbank n_0 values were determined from Table 2 of the *Manning's Manual*. This value was consistent at 0.025 for all the reaches because of the presence of similar firm soils. Irregularity in the overbanks was minimal; therefore n_1 was set to 0.001 for all the reaches. Per the *Manning's Manual* n_2 was not used as it represents variation in channel cross-section. For n_3, because occasional obstructions such as logs and exposed tree roots were located within the overbanks, value of 0.004 was used for all reaches. Table 4 of the *Manning's Manual* was used to determine the n_4-value in the overbanks. The n_4-value of vegetation ranged between 0.020 and 0.035. The lowest value was applied to Reach 5, as it meanders through developed areas and vegetation appeared to be removed from the overbanks. The highest value was applied to Reach 4, which is downstream of Reach 5. Reach 4 exhibited thicker vegetation in the overbanks than was present on any other reach. The degree of meandering for the overbanks was minor and the m factor was kept to 1.0 for the overbanks, not affecting the computed n-values. The Manning's n values calculated for each reach are listed in Table 1 along with the wash names and study areas.

In summary, Study Area 1 is divided into Reaches 1 and 2, Study Area 2 is Reach 3, Study Area 3 is divided into Reaches 4 and 5, and Study Area 4 is Reach 6.

Table 1: Channel and Overbank Manning's n Values

Reach	Wash Name(s)	Study Area	Channel n	Overbank n
1	1S2WS31 (A56)	1	0.048	0.050
2	2S2WS7A (A52) and 2S2WS7B (A51)	West and East Forks of Study Area 1	0.048	0.050
3	1S3WS24A (A60)	2	0.050	0.056
4	1S2WS18B (J37)	3	0.041	0.065
5	1S2WS18B (J37) and 1S2WS18A (J27)	East and West Forks of Study Area 3	0.048	0.050
6	1S2WS31B (I70)	4	0.036	0.050

Table 2: Comparison of EEC Manning's n Values on the next page references and compares the n-values used in the previous study that were part of the 2006 Zone A floodplain delineations prepared by Engineering and Environmental Consultants, Inc. (EEC) with the

proposed *n*-values for this study. Overall, the Manning's *n*-values reflected for this analysis are lower within the channel and higher within the overbanks.

Table 2: Comparison of EEC Manning's *n* Values

Reach	Wash Name	Portion of Cross-Section	*n*-Value used in EEC Model	Selected *n*-Value*
1	1S2WS31 (A56)	Channel	0.043	0.048
		Overbank	0.050	0.050
2	2S2WS7A (A52)	Channel	0.049	0.048
		Overbank	0.044	0.050
	2S2WS7B (A51)	Channel	0.049	0.048
		Overbank	0.044	0.050
3	1S3WS24A (A60)	Channel	0.043	0.050
		Overbank	0.050	0.056
4	1S2WS18B (J37)	Channel	0.054	0.041
		Overbank	0.051	0.065
5	1S2WS18B (J37)	Channel	0.054	0.048
		Overbank	0.051	0.050
	1S2WS18A (J27)	Channel	0.054	0.048
		Overbank	0.051	0.050
6	1S2WS31B (I70)	Channel	0.043	0.036
		Overbank	0.042	0.050

Value taken from Table 1*

III. PHOTOGRAPHS AND N VALUE ASSIGNMENTS

The remainder of this document describes in further detail the six reaches for which the Manning's *n* values were determined along with representative photographs of the channels and the overbanks. The Manning's *n* values that were determined in this section will be applied to the HEC-RAS modeling for the floodplain delineation of washes in Study Areas 1, 2, 3, and 4.

Study Area 1 is divided into Reaches 1 and 2. Reach 1 represents Wash 1S2WS31 (A56). Reach 1 is located south of Pecos Road and extends southwest to the BLM property boundary.

The channel bed within Reach 1 is mostly composed of cobbles and gravels with little vegetation. For reference, the grid depicted in many of the photographs is composed of 1-inch squares and is 1-square foot in area. Because of the absence of large rock material within the channel, n_0 was set to 0.030, the lower-end value for gravel. The channel banks are fairly smooth, with few obstructions and only minor sporadic patches of grass therefore n_1, n_3, and n_4 are kept low. Because there is variation in channel cross-section and meandering, the n_2 value and *m*-factor were elevated. Refer to Photo 1 on the following page.

The overbanks are fine, firm soil with few rounded cobbles composing less than 5% of the base material with moderately covered vegetation. Refer to Photos 2 and 3 on the next page.

Table 3: Channel and Overbank Assignments for Reach 1

Reach 1	n_0 – channel	n_1- irregularity	n_2- variation	n_3- obstructions	n_4- vegetation	m	Composite n-Value
Channel	0.030	0.001	0.005	0.004	0.002	1.15	0.048
Overbanks	0.025	0.001	0	0.004	0.020	1	0.050

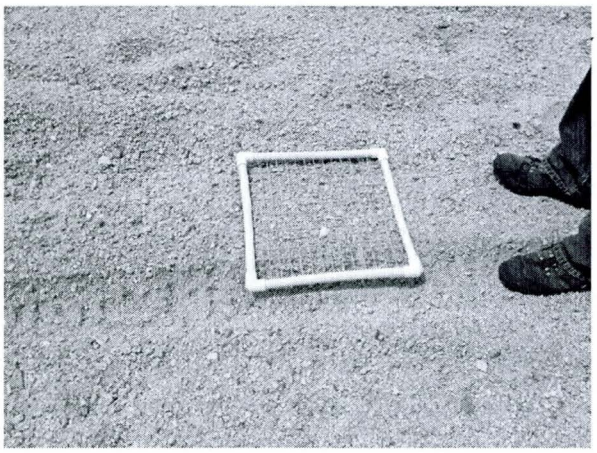


Photo 1: Channel Bottom of Study Area 1, Reach 1

Photo 2: Channel and Overbank Area of Study Area 1, Reach 1

Photo 3: Overbank Area of Study Area 1, Reach 1

Reach 2 is representative of the east and the west forks of Study Area 1. The east fork is comprised of Wash 2S2WS7B (A51) and our limit of study terminates near West Ryan Street. The west fork is comprised of Wash 2S2WS7A (A52) downstream of the flow split, which terminates at Wash 1S2WS31 (A56) near West Germann Road. The channel bottom for both forks is composed of similar material, see Photos 4 and 5 below. The differentiating factor for this reach is the erosion along the channel banks that can be seen in Photos 6 and 7. The overbanks are depicted in Photos 8 and 9.

Table 4: Channel and Overbank Assignments for Reach 2

Reach 2	n_0 – channel	n_1- irregularity	n_2- variation	n_3- obstructions	n_4- vegetation	m	Composite n-Value
Channel	0.030	0.004	0.005	0.002	0.001	1.15	0.048
Overbanks	0.025	0.001	0	0.004	0.020	1	0.050

Photo 4: Channel Bottom of the East Fork of Study Area 1, Reach 2

Photo 5: Channel Bottom of the West Fork of Study Area 1, Reach 2

Photo 6: Channel, Overbanks, and Erosion of East Fork of Study Area 1, Reach 2

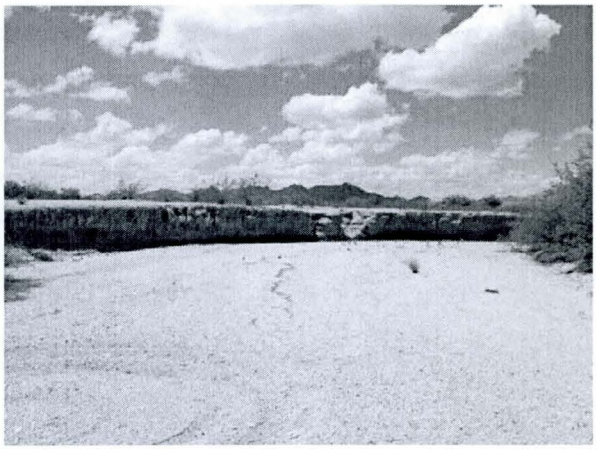


Photo 7: Channel Banks and Erosion Location within West Fork of Study Area 1, Reach 2

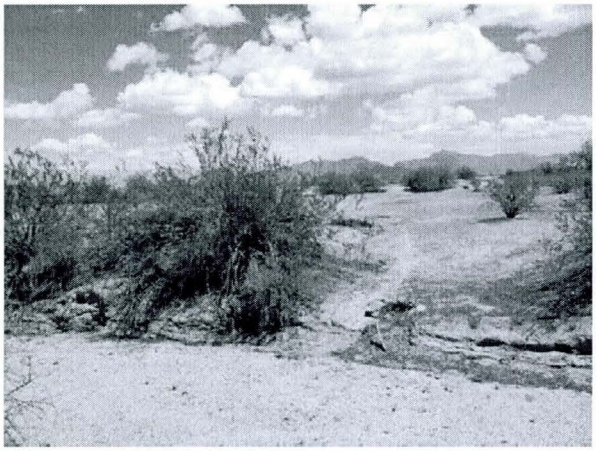


Photo 8: Overbank Area within the East Fork of Study Area 1, Reach 2

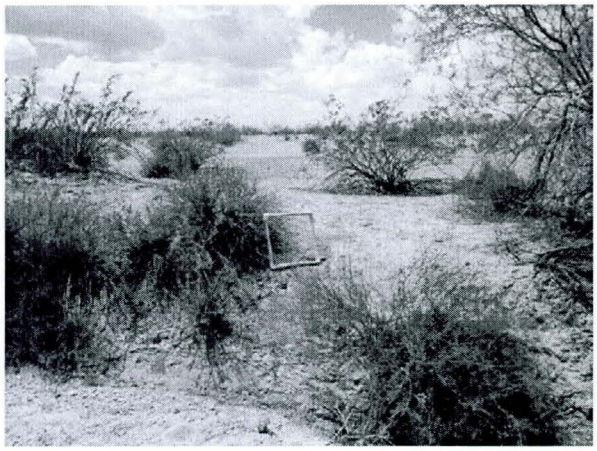


Photo 9: Overbank Area within West Fork of Study Area 1, Reach 2

Reach 3 is representative of Study Area 2 or Wash 1S3WS24A (A60) downstream of the BLM limits. Similar to Reach 1, the channel bottom of this reach is composed of large sands, gravel, and cobble with little debris, although some large vegetation is located within the wash and along the banks, so the n_3 and n_4 values are higher than previously calculated. The m-value accounts for the two 90-degree bends within the small reach. Large trees and some obstructions are located within the channel bottom, and the banks are firm soil with sparse, but large vegetation. The overbanks have fairly smooth sides with minor evidence of erosion. Refer to Photos 10 and 11 below.

Table 5: Channel and Overbank Assignments for Reach 3

Reach 3	n_0 – channel	n_1- irregularity	n_2- variation	n_3- obstructions	n_4- vegetation	m	Composite n-Value
Channel	0.030	0.001	0.005	0.004	0.002	1.20	0.050
Overbanks	0.025	0.001	0	0.004	0.026	1	0.056

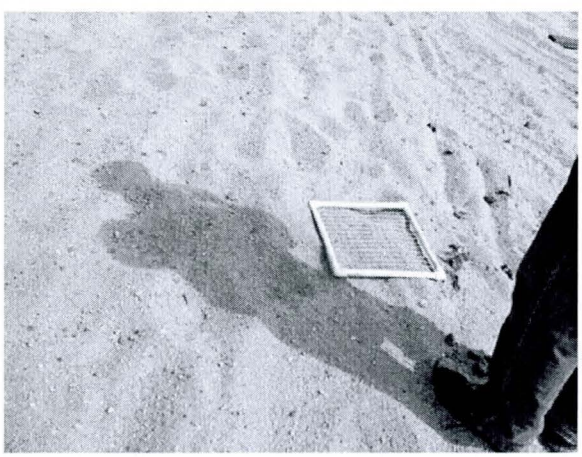


Photo 10: Channel Bottom of Study Area 2, Reach 3

Photo 11: Channel and Overbanks for Study Area 2, Reach 3

Study Area 3 is divided into Reaches 4 and 5. Reach 4 is representative of the downstream reach of Study Area 3 or wash 1S2WS18B (J37), located north of Carver Road. The channel bottom of this reach is composed of firm soil with little amounts of sand and few obstructions. The m-value is

higher to account for braiding. The overbanks have more vegetation than the previous reaches and therefore this value was set much higher. See Photos 12 through 14 below.

Table 6: Channel and Overbank Assignments for Reach 4

Reach 4	$n_{0-\text{channel}}$	$n_{1-\text{irregularity}}$	$n_{2-\text{variation}}$	$n_{3-\text{obstructions}}$	$n_{4-\text{vegetation}}$	m	Composite n-Value
Channel	0.027	0.001	0.003	0.004	0.002	1.10	0.041
Overbanks	0.025	0.001	0	0.004	0.035	1	0.065

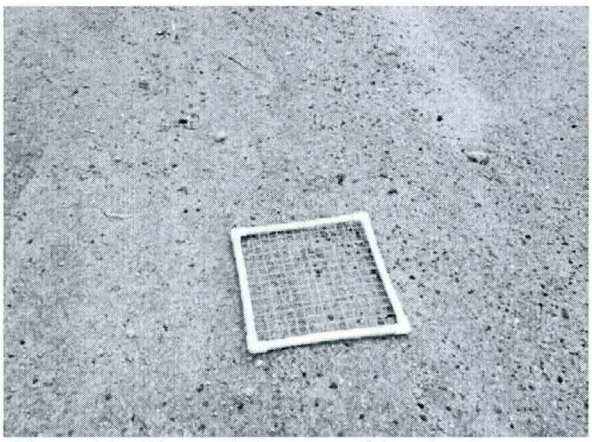


Photo 12: Channel Bottom of Study Area 3, Reach 4

Photo 13: Channel and Overbanks of Study Area 3, Reach 4

Photo 14: Channel and Overbanks of Study Area 3, Reach 4

Reach 5 represents the west and the east forks of Study Area 3 or 1S2WS18A (J27) and 1S2WS18B (J37), the segments that are south of Carver Road. These reaches meander through private residential properties on compacted soil. Because of the constructed nature of these channels, the channel bottom for both forks is firm earth with smooth sides; therefore the n_0 is set to the same value as Reach 4. As a result of the washes being on private property, there is more vegetation within the channels, less vegetation on the overbanks, cross-section variation is minimized, and meandering is higher. Refer to Photos 15 through 18 below.

Table 7: Channel and Overbank Assignments for Reach 5

Reach 5	$n_{0\text{ – channel}}$	$n_{1\text{- irregularity}}$	$n_{2\text{- variation}}$	$n_{3\text{- obstructions}}$	$n_{4\text{- vegetation}}$	m	Composite n-Value
Channel	0.027	0.001	0.002	0.005	0.005	1.2	0.048
Overbanks	0.025	0.001	0	0.004	0.020	1	0.050

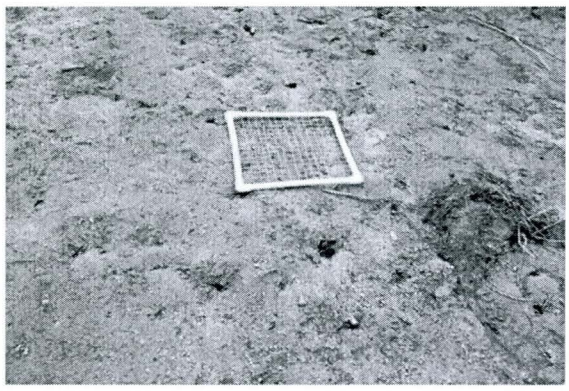


Photo 15: Channel Bottom of the East Fork of Study Area 3, Reach 5.

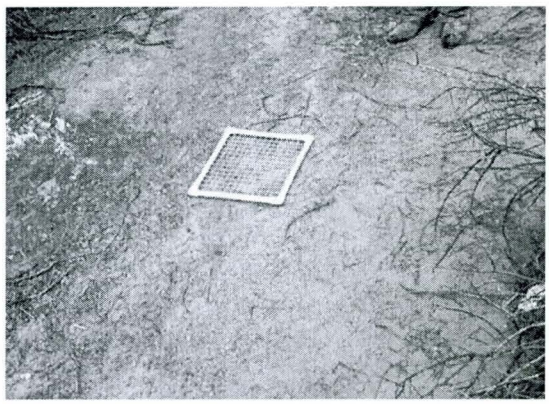


Photo 16: Channel Bottom of West Fork of Area 3, Reach 5.

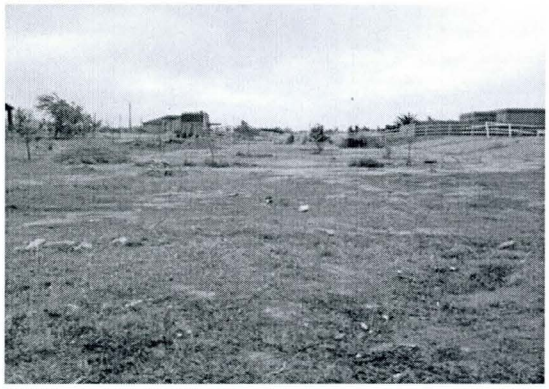


Photo 17: Channel Bottom and Overbank of West Fork of Study Area 3, Reach 5

Photo 18: Channel, Overbank Areas of East Fork of Study Area 3, Reach 5.

Reach 6 is representative of Study Area 4 or wash 1S2WS31B (I70). Similar to the first reach, the channel bed within this reach is mostly composed of cobbles and gravels with very little vegetation. The base value for bed material, n_0 was set to 0.030, the lower-end value for gravel. The channel banks are smooth, with few obstructions and no vegetation. Minimal meandering and cross-section variation justify keeping n_2 and m low. The overbanks are fine, firm soil with minimal vegetation consisting of a few large trees and mostly bushes. See Photos 19 and 20 below.

Table 8: Channel and Overbank Assignments for Reach 6

Reach 6	n_0 – channel	n_1- irregularity	n_2- variation	n_3- obstructions	n_4- vegetation	m	Composite n-Value
Channel	0.030	0.001	0.002	0.002	0.001	1	0.036
Overbanks	0.025	0.001	0	0.004	0.020	1	0.050

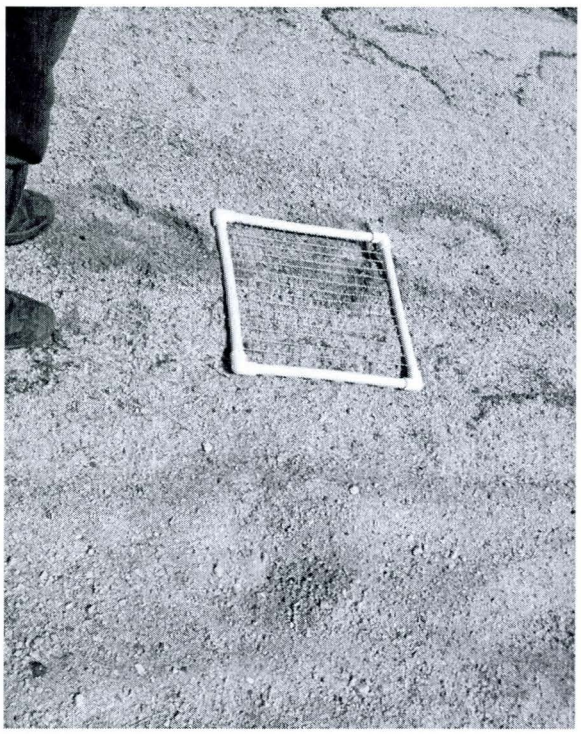
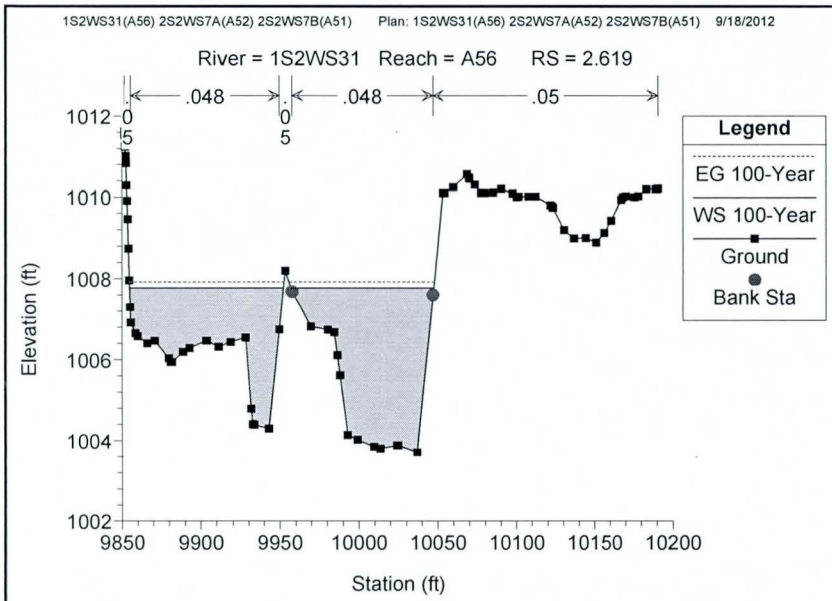
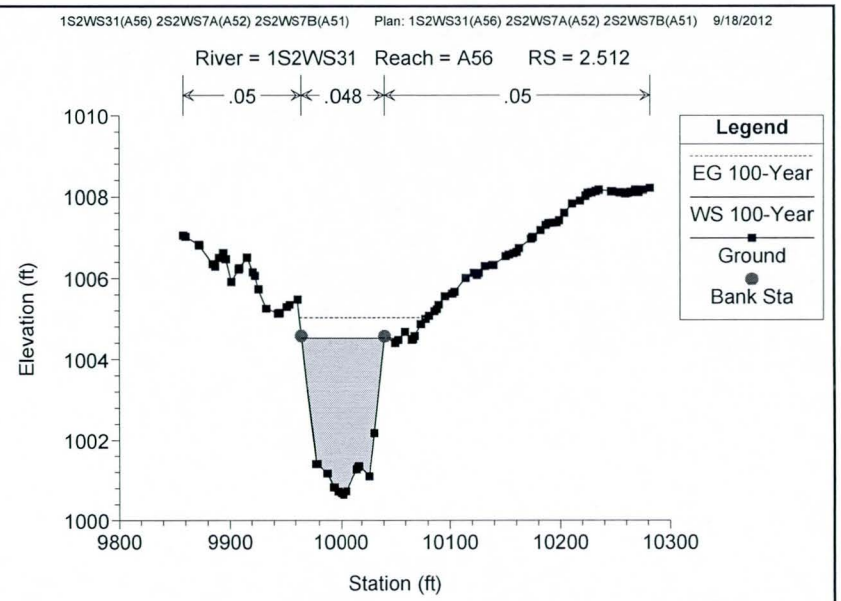


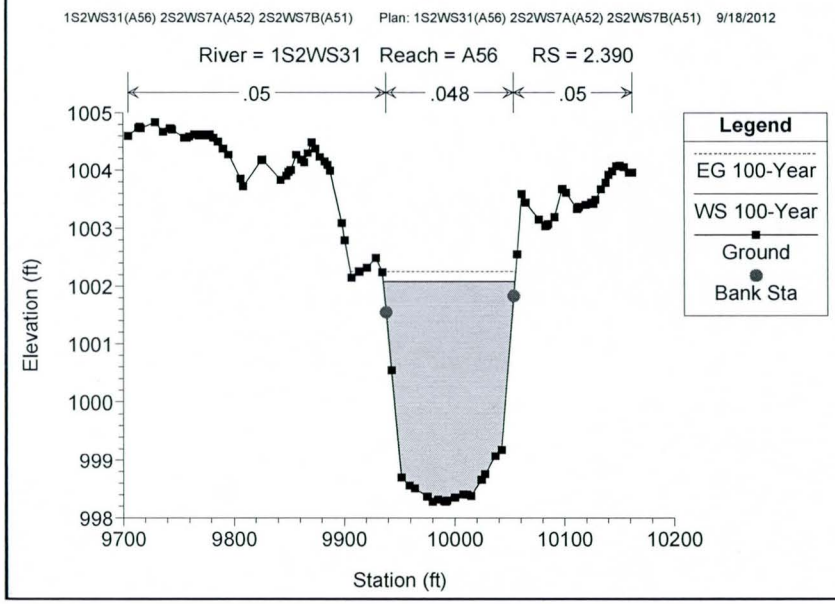
Photo 19: Channel Bottom of Study Area 4, Reach 6.

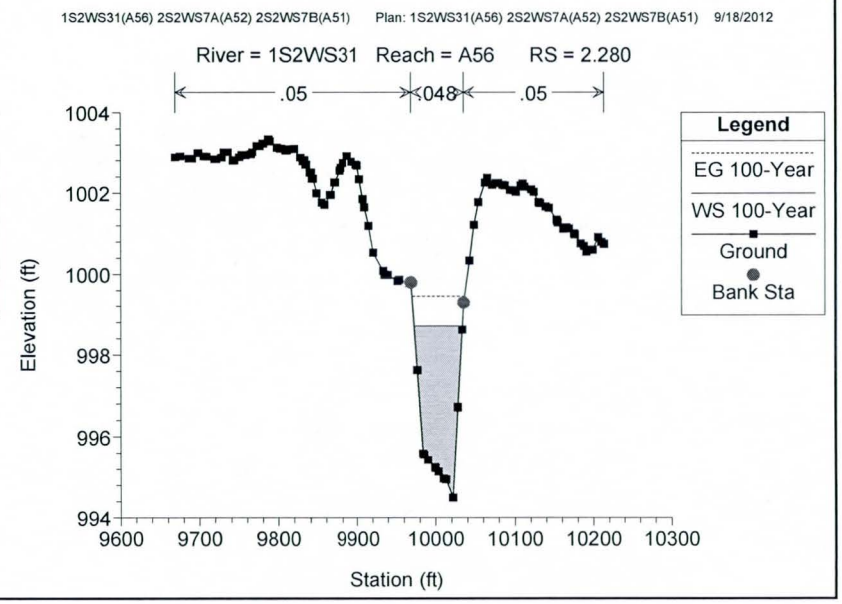
Photo 20: Left Overbank of Study Area 4, Reach 6.

E.2 Cross Section Plots


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 2.619
.05
.048
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 2.512
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 2.390
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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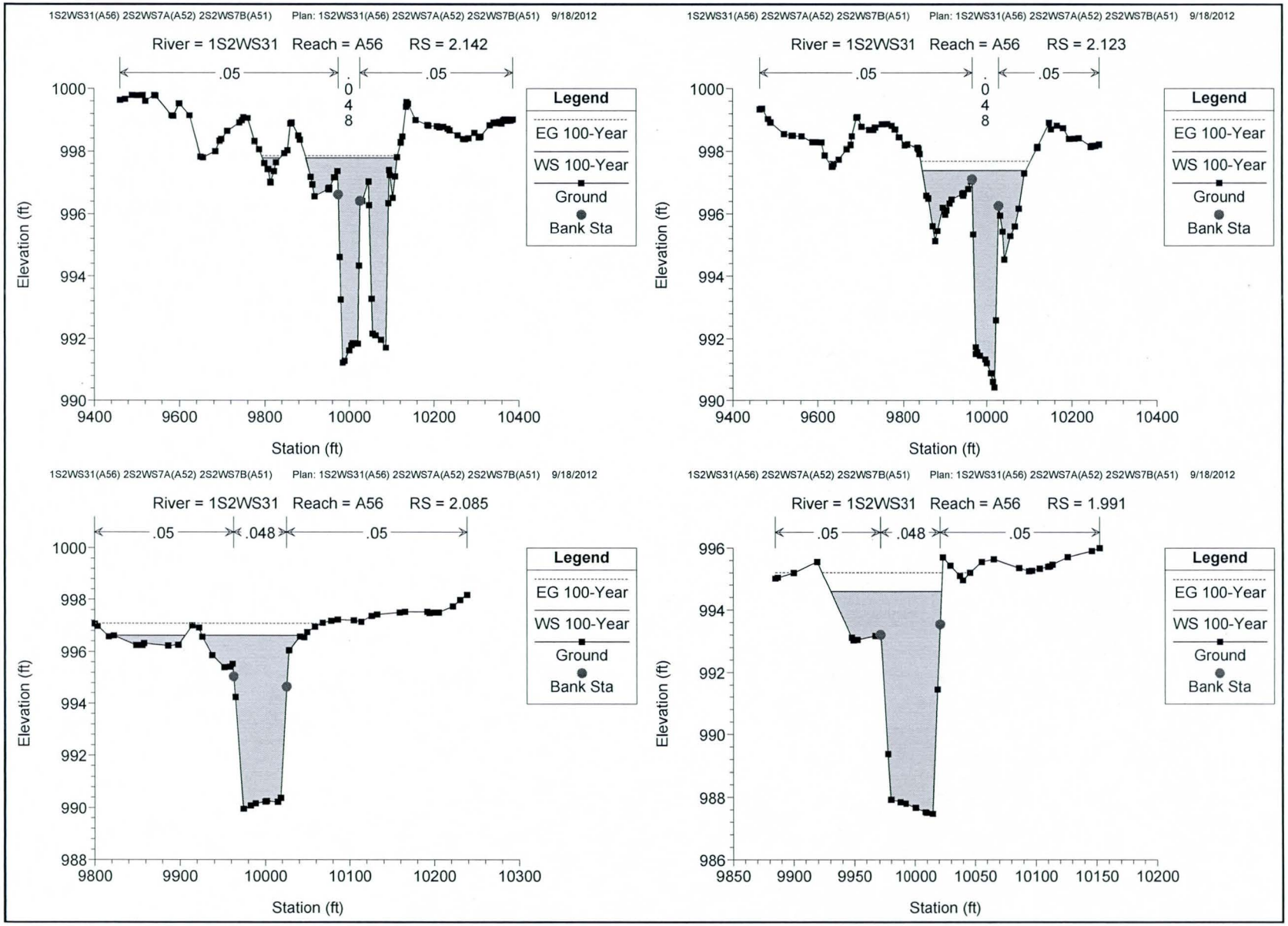
River = 1S2WS31 Reach = A56 RS = 2.280
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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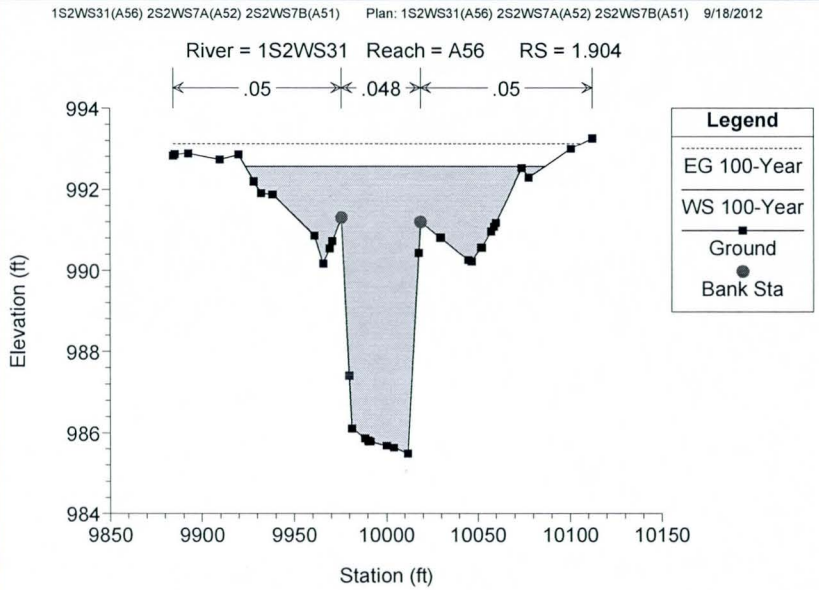
River = 1S2WS31 Reach = A56 RS = 2.142
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 2.123
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 2.085
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 1.991
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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River = 1S2WS31 Reach = A56 RS = 1.904
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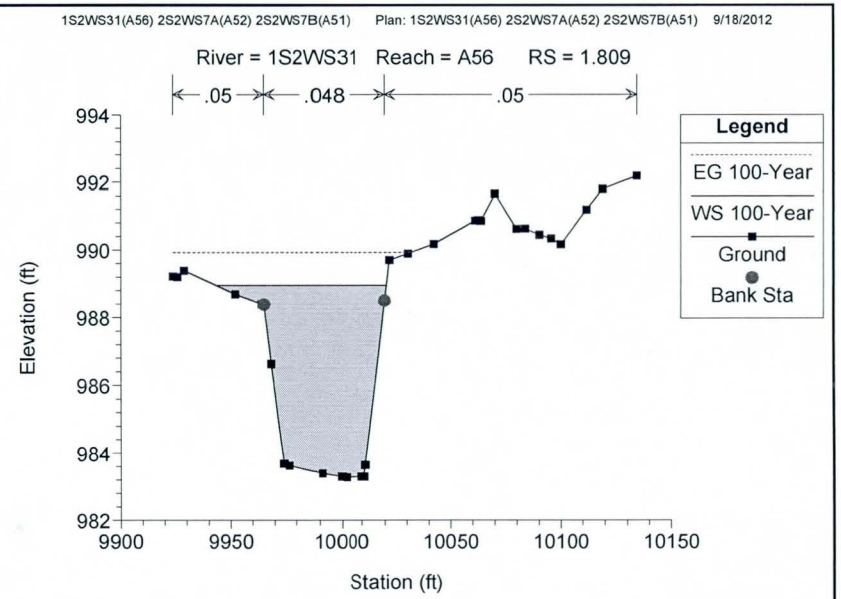
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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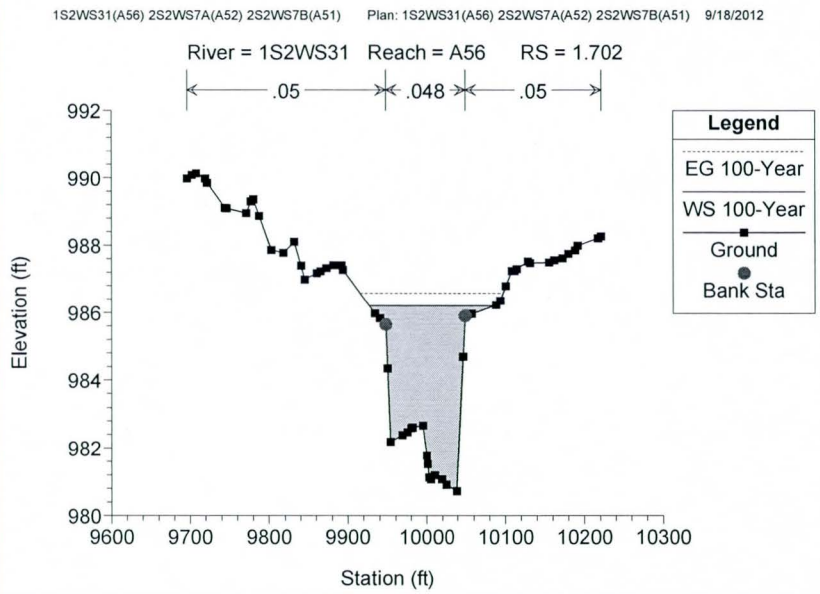
River = 1S2WS31 Reach = A56 RS = 1.809
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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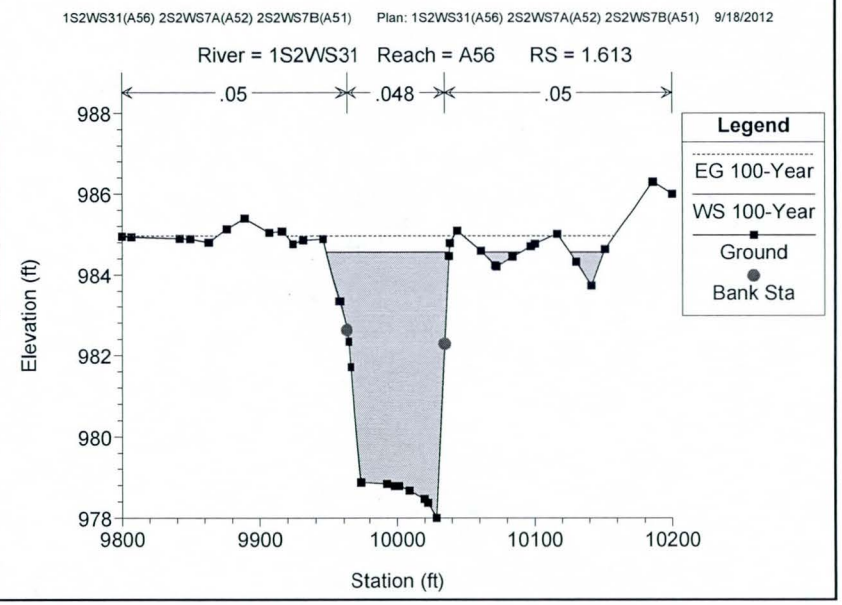
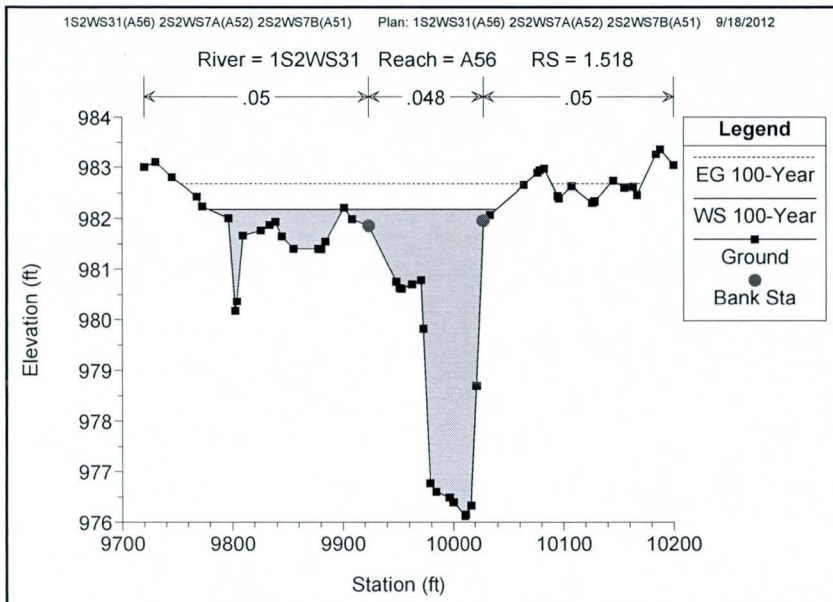
River = 1S2WS31 Reach = A56 RS = 1.702
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 1.613
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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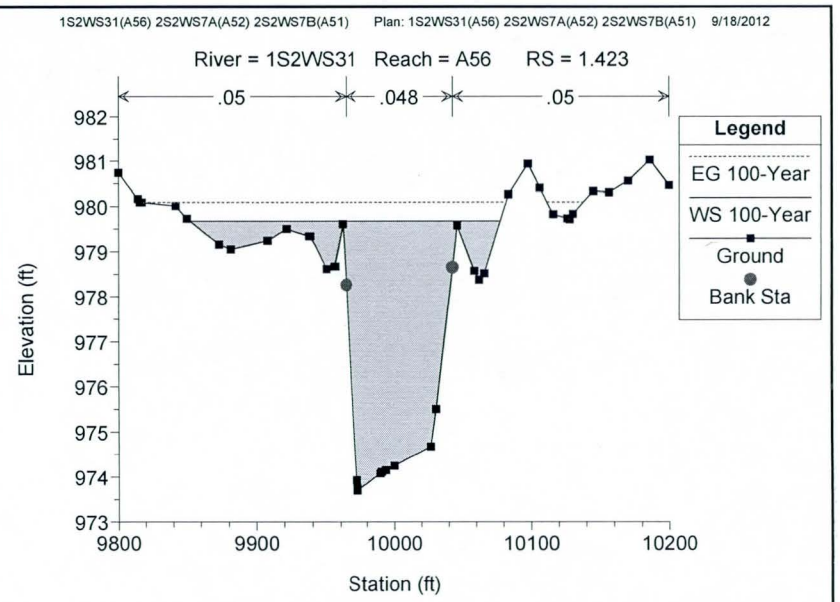
River = 1S2WS31 Reach = A56 RS = 1.518
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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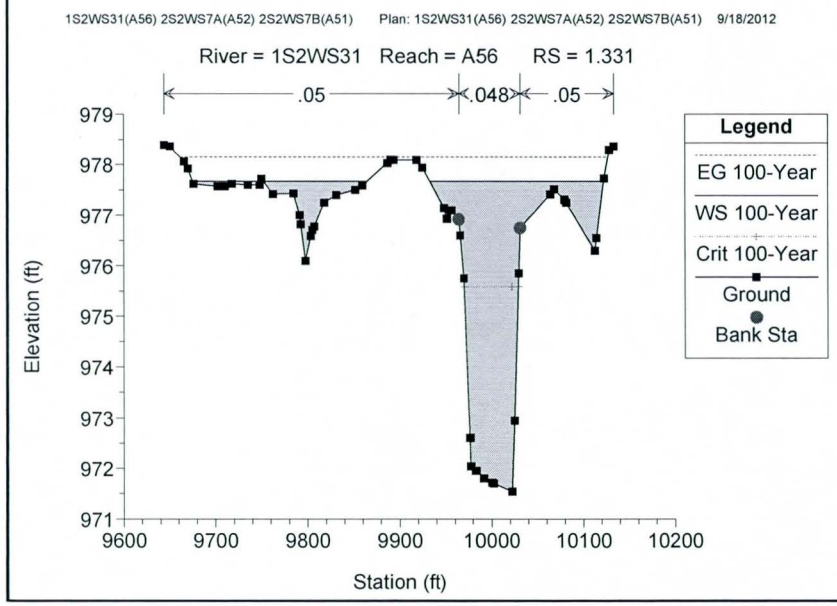
River = 1S2WS31 Reach = A56 RS = 1.423
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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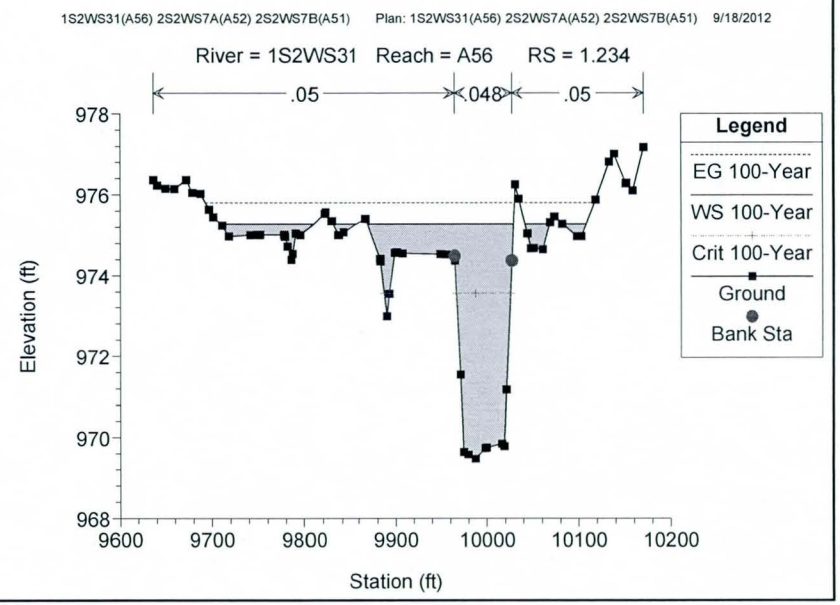
River = 1S2WS31 Reach = A56 RS = 1.331
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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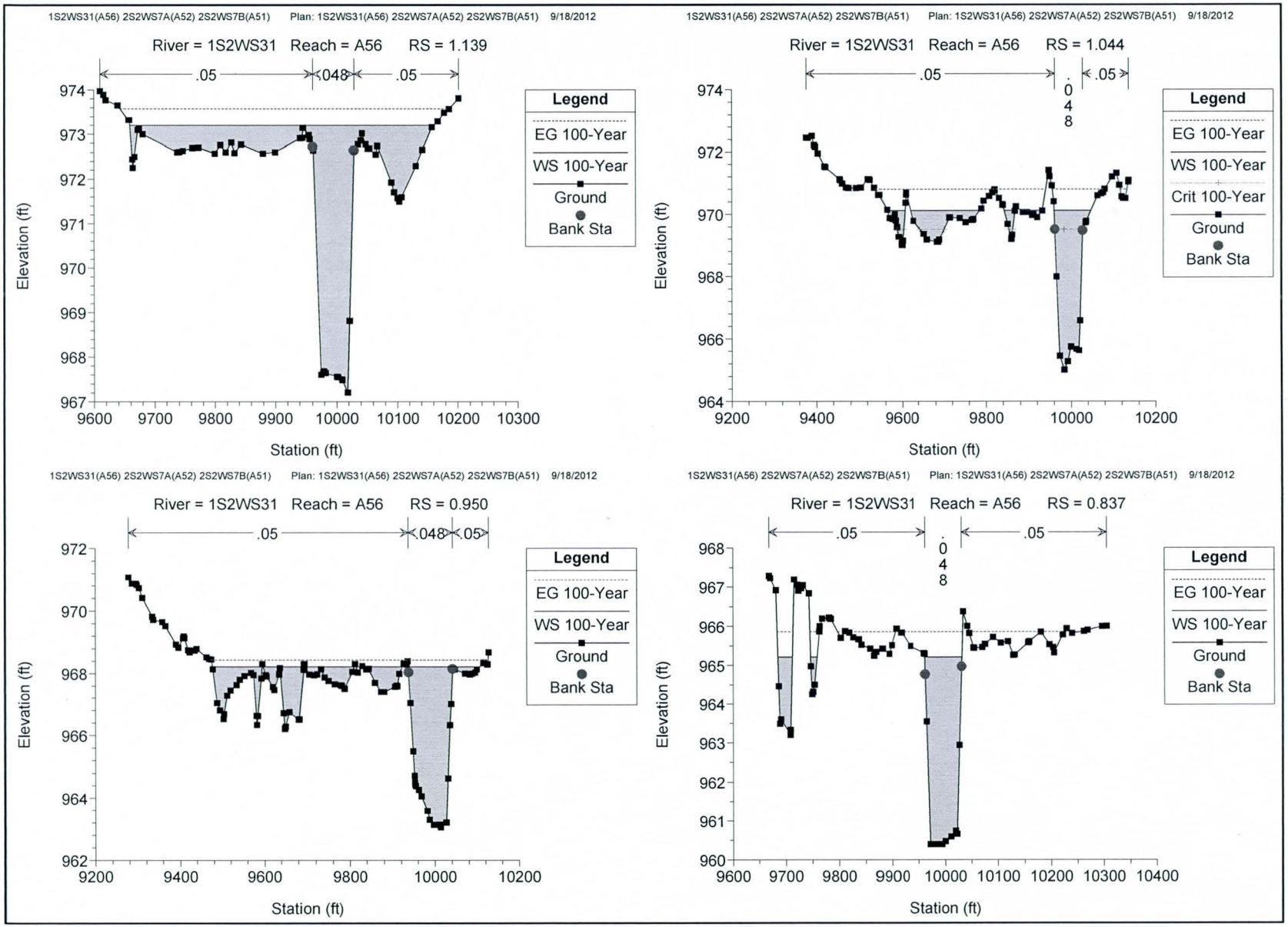
River = 1S2WS31 Reach = A56 RS = 1.234
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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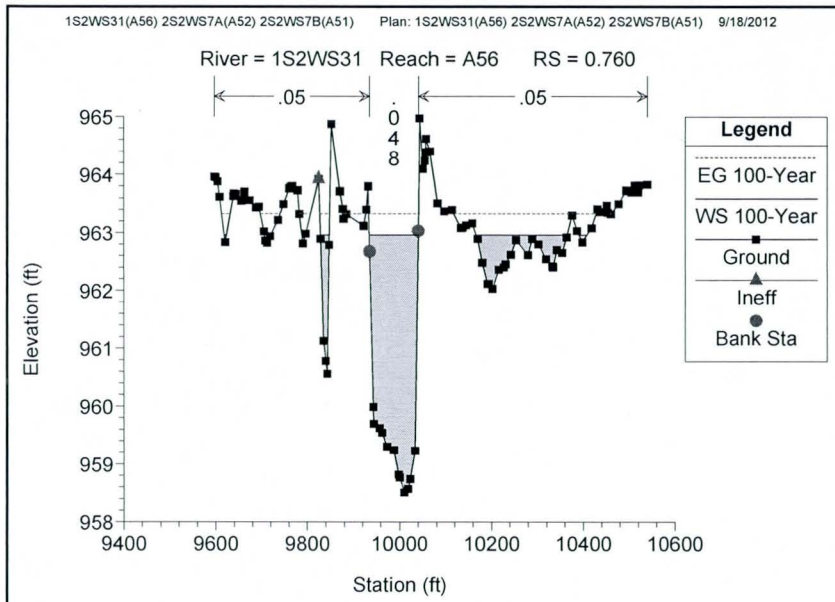
River = 1S2WS31 Reach = A56 RS = 1.139
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 1.044
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 0.950
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 0.837
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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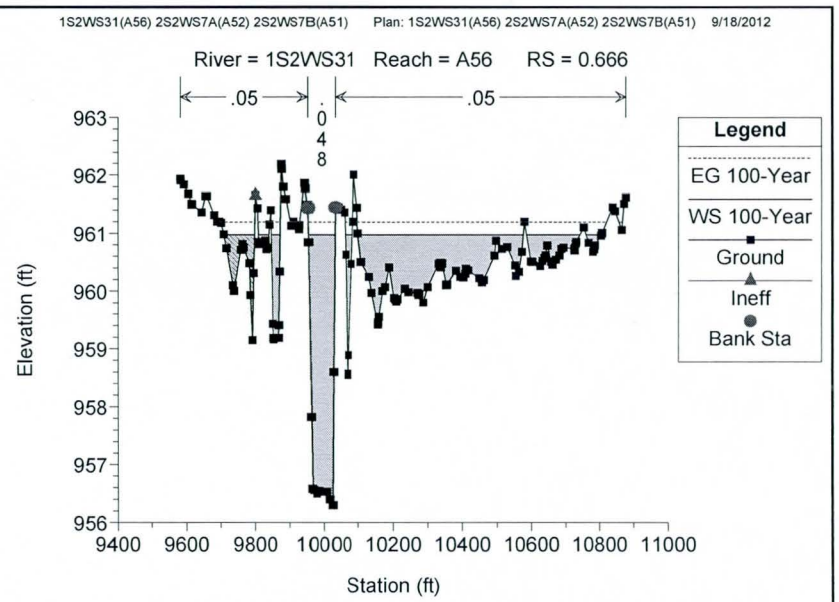
River = 1S2WS31 Reach = A56 RS = 0.760
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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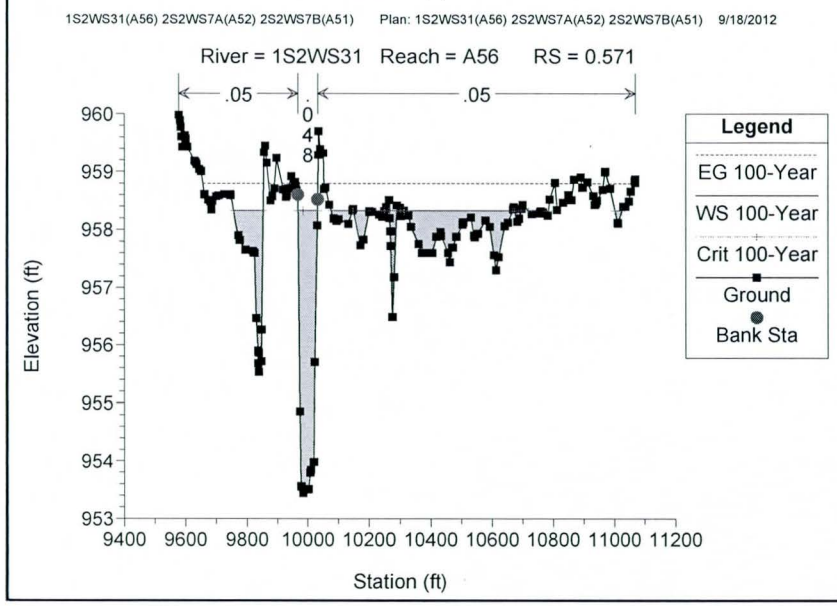
River = 1S2WS31 Reach = A56 RS = 0.666
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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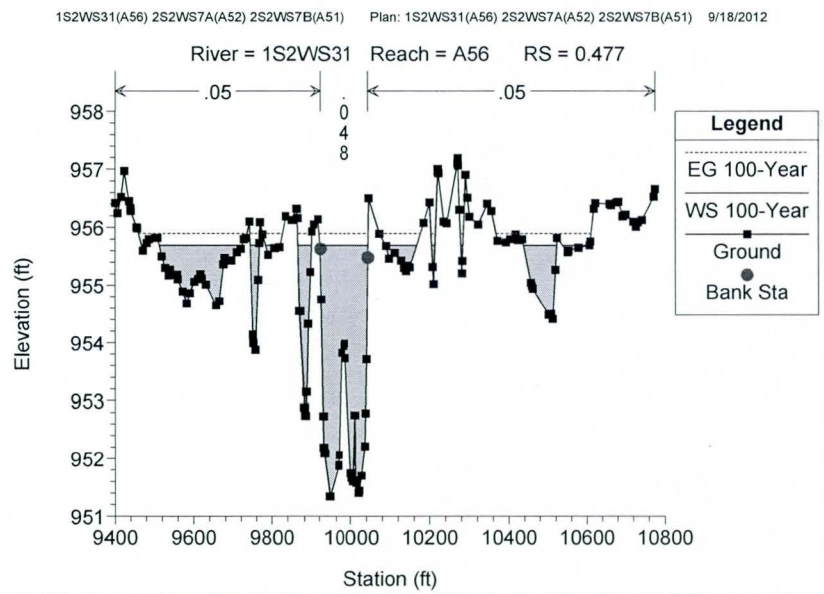
River = 1S2WS31 Reach = A56 RS = 0.571
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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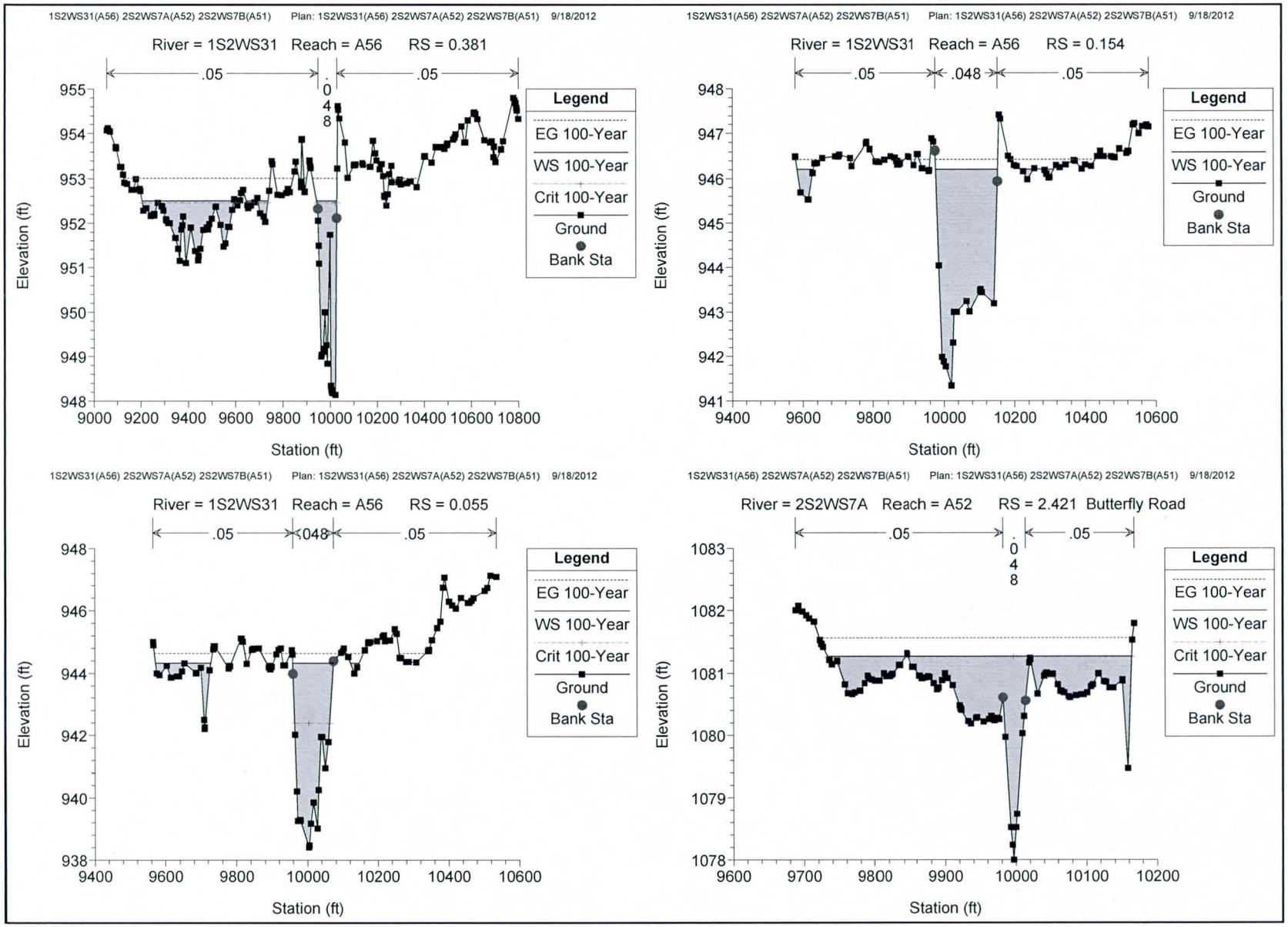
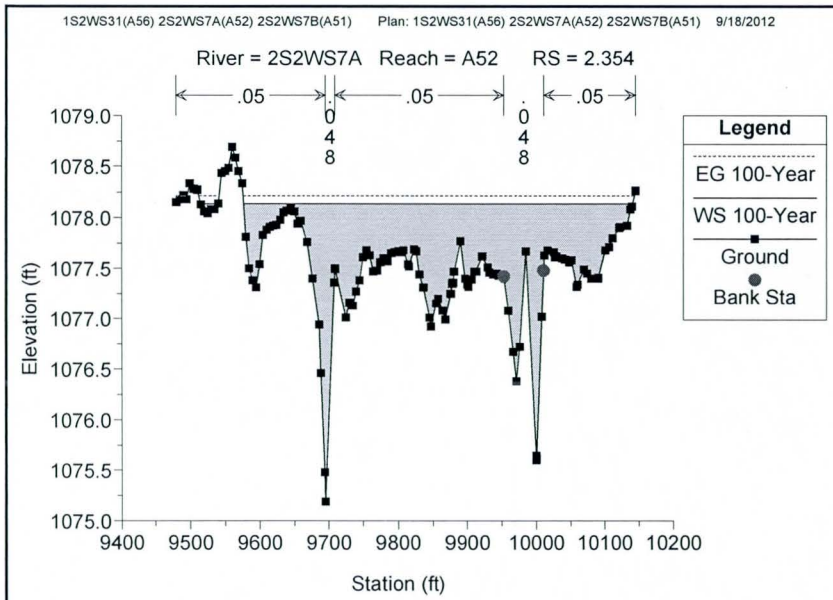
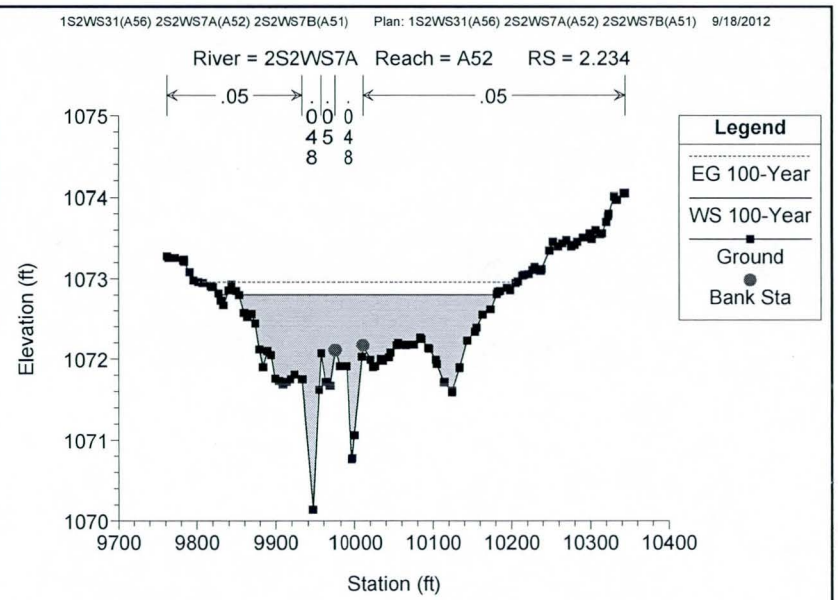
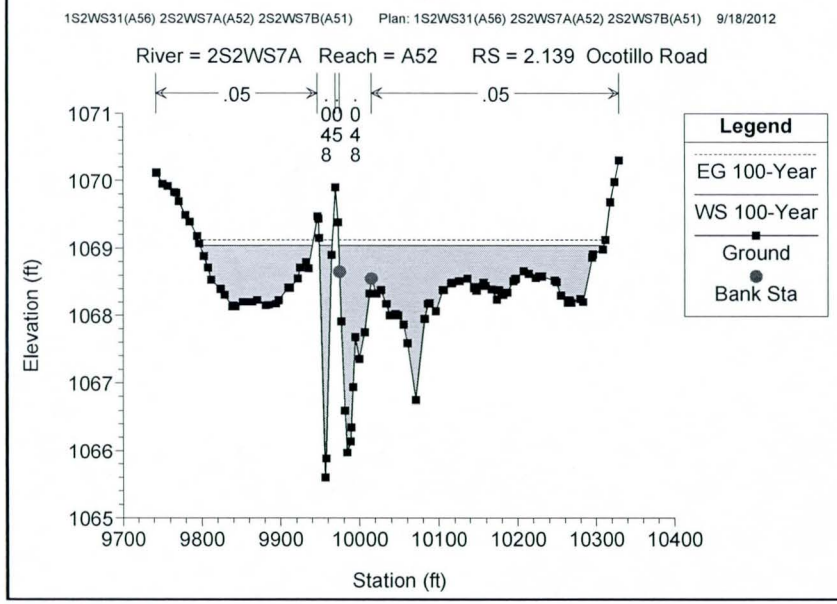
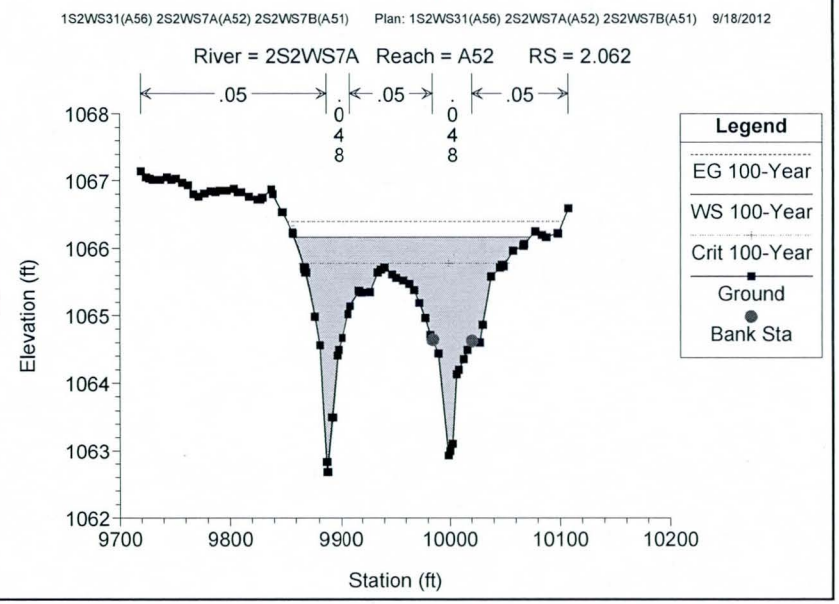
River = 1S2WS31 Reach = A56 RS = 0.477
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 0.381
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 0.154
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 1S2WS31 Reach = A56 RS = 0.055
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 2.421 Butterfly Road
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 2.354
.05
.05
.05
.048
.048
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

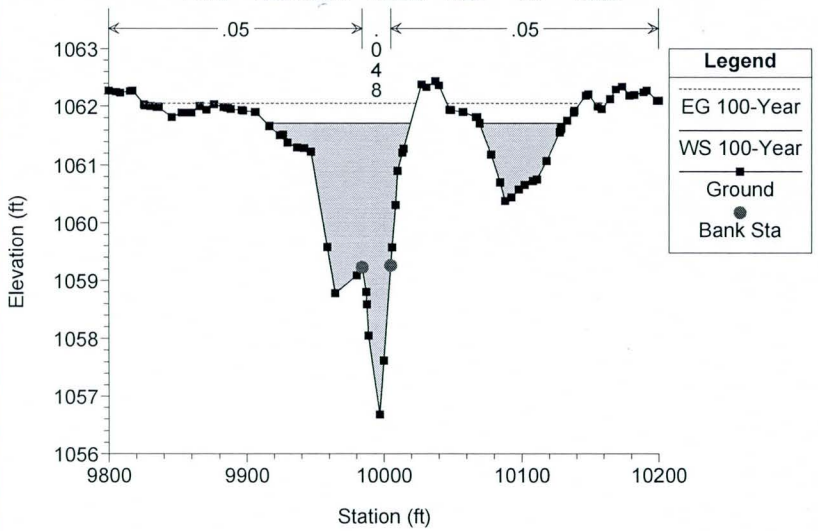

1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 2.234
.05
.05
.048
.045
.048
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 2.139 Ocotillo Road
.05
.05
.045
.048
.048
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 2.062
.05
.05
.05
.048
.048
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

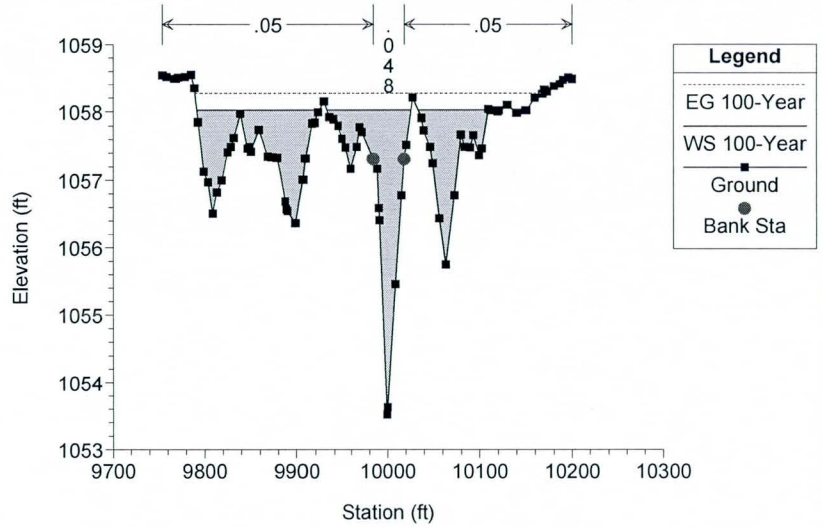
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012

River = 2S2WS7A Reach = A52 RS = 1.950



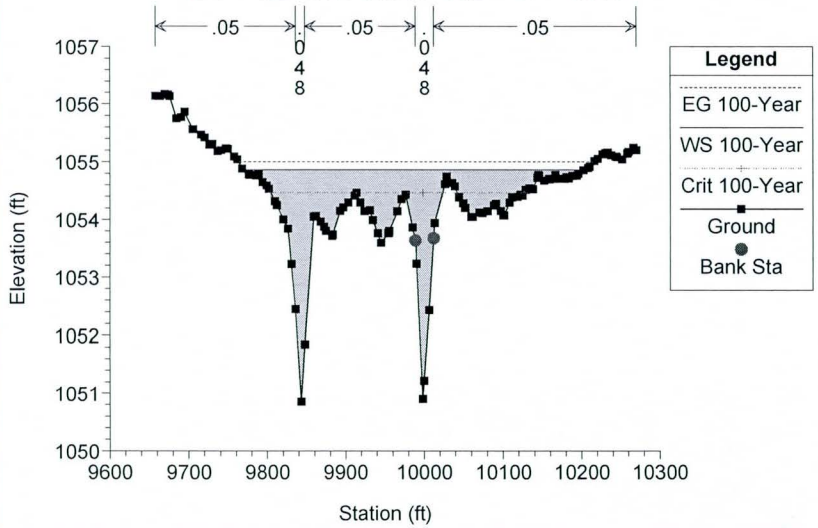
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012

River = 2S2WS7A Reach = A52 RS = 1.855 West Spur Road



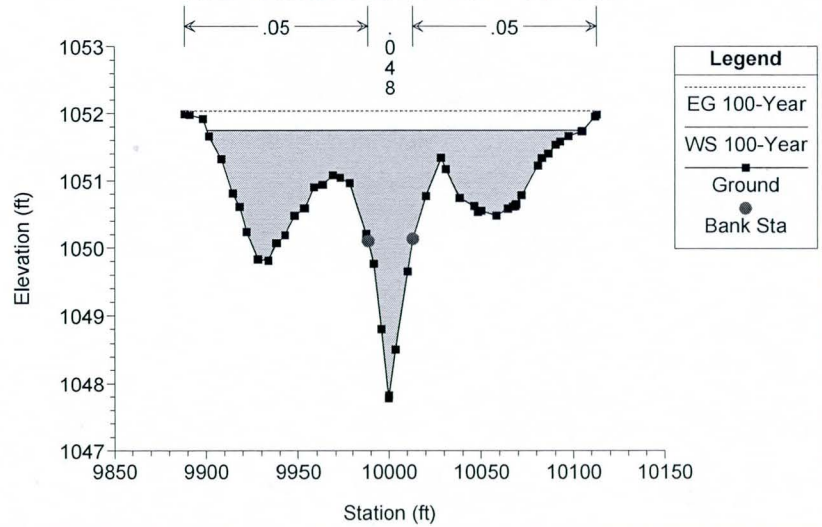
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012

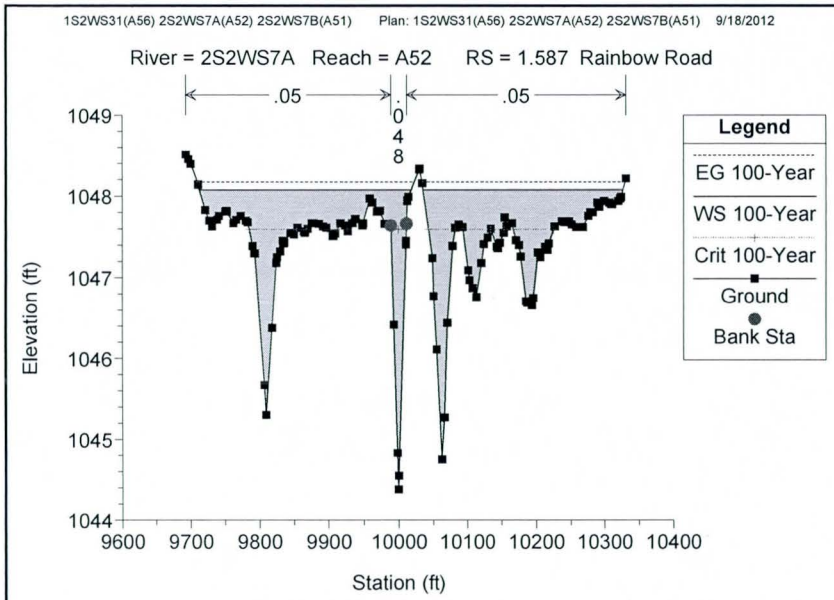
River = 2S2WS7A Reach = A52 RS = 1.764

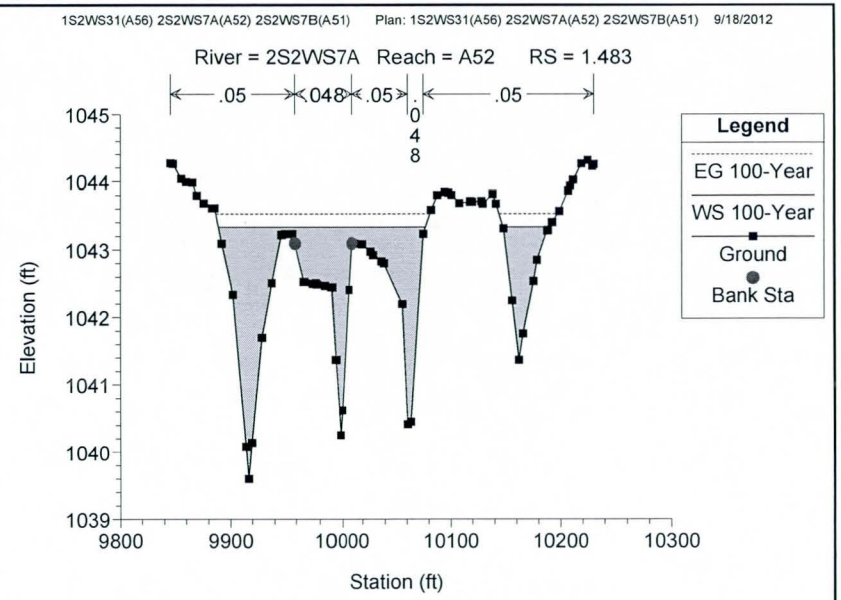


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012

River = 2S2WS7A Reach = A52 RS = 1.681




1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 1.587 Rainbow Road
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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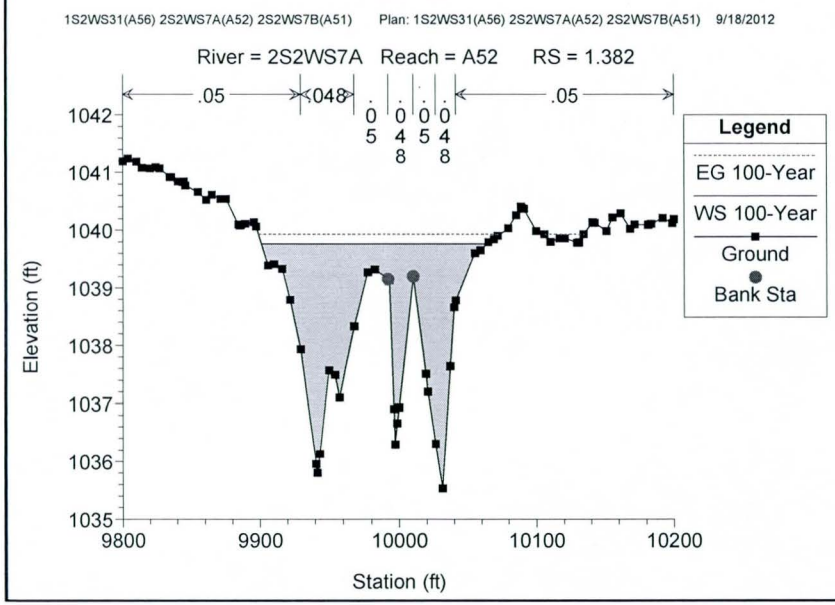
River = 2S2WS7A Reach = A52 RS = 1.483
.05
.048
.05
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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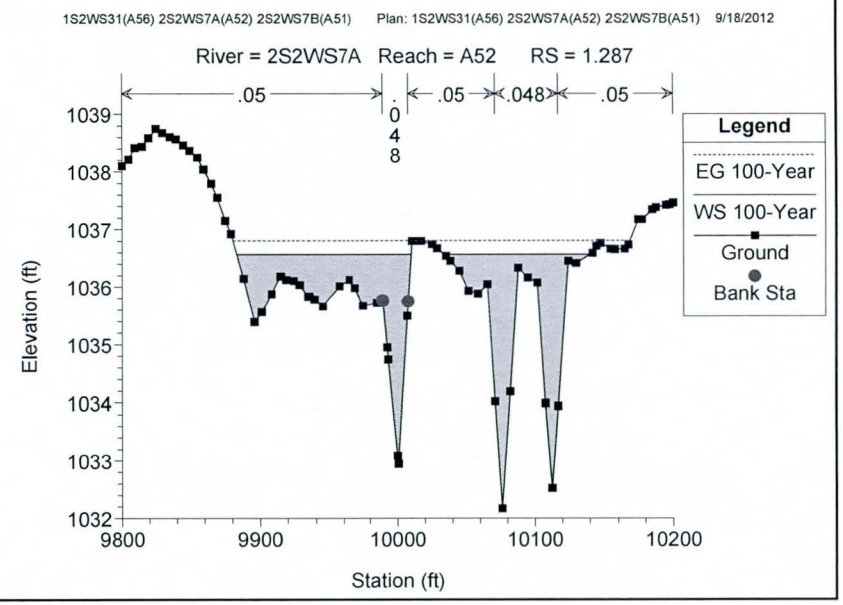
River = 2S2WS7A Reach = A52 RS = 1.382
.05
.048
.05
.05
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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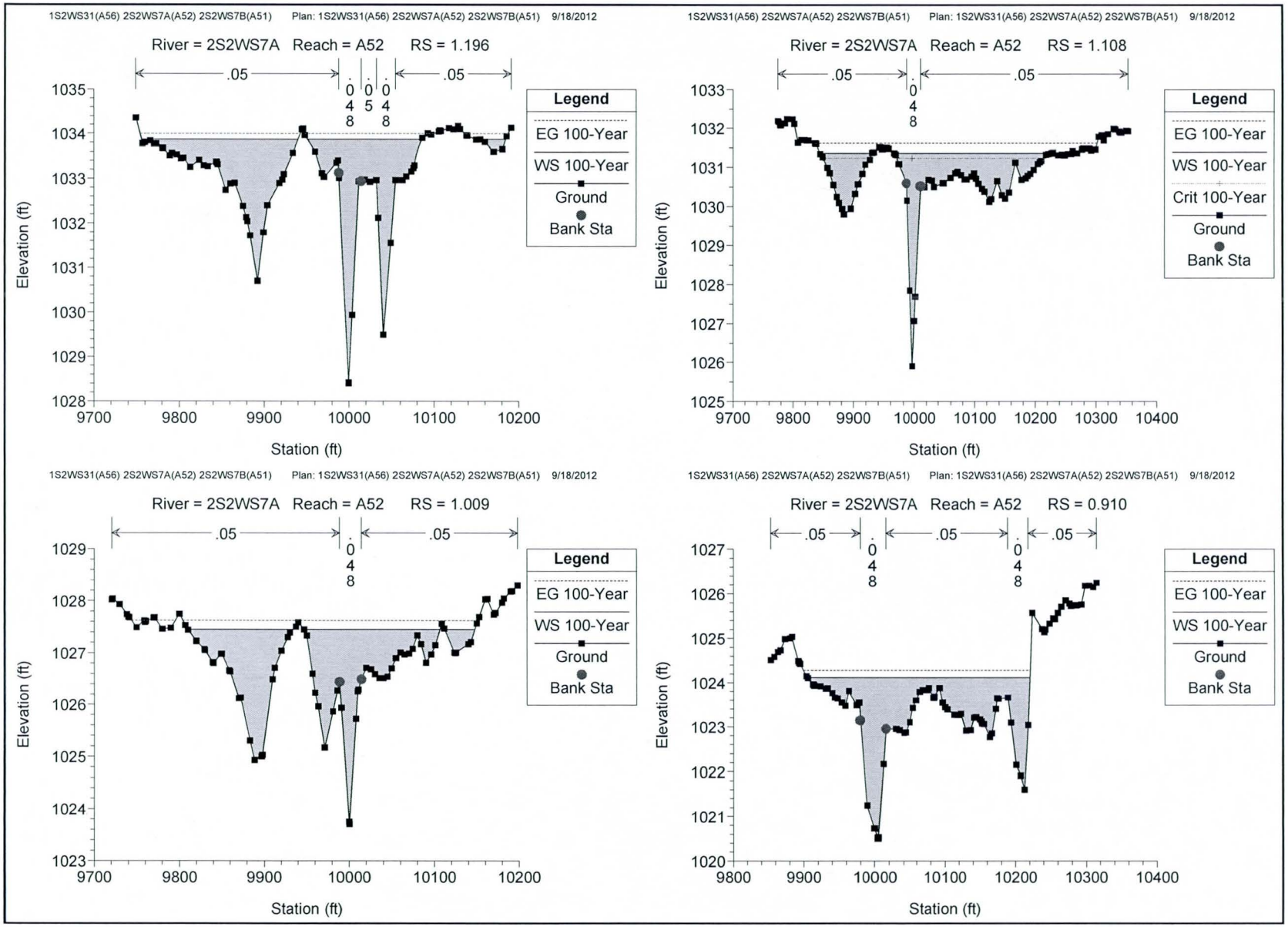
River = 2S2WS7A Reach = A52 RS = 1.287
.05
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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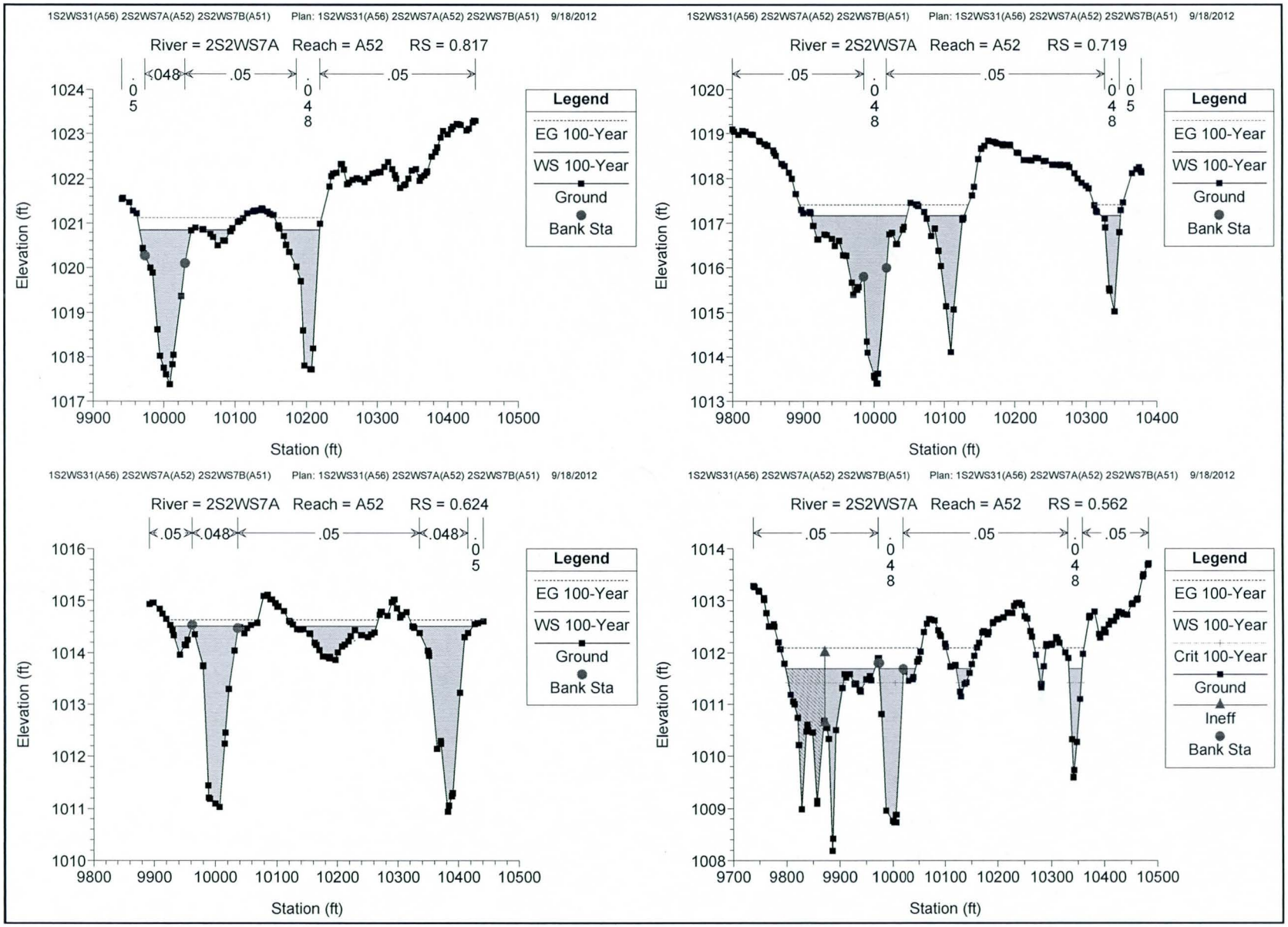
River = 2S2WS7A Reach = A52 RS = 1.196
.05
.048
.058
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 1.108
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 1.009
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 0.910
.05
.048
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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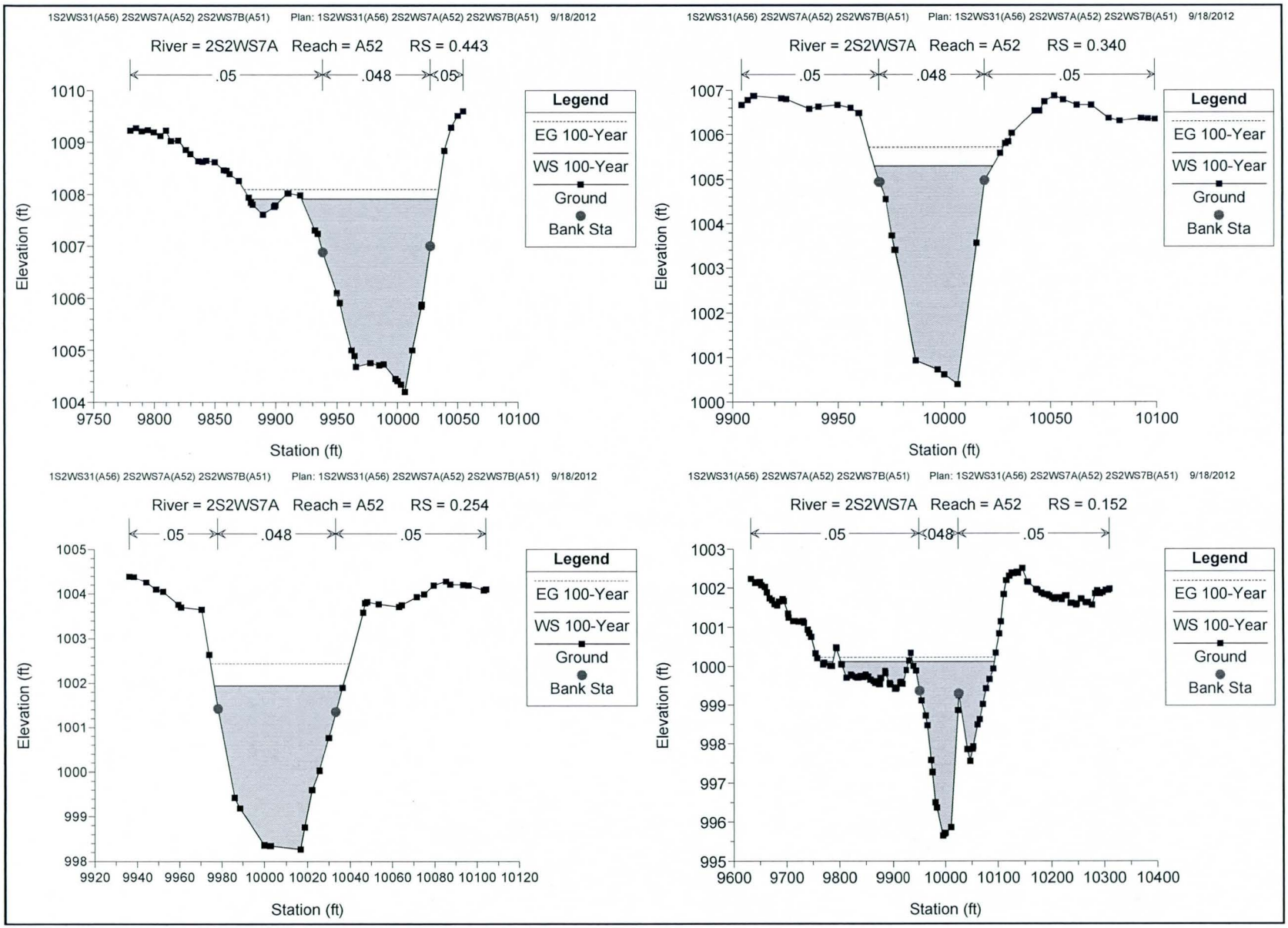
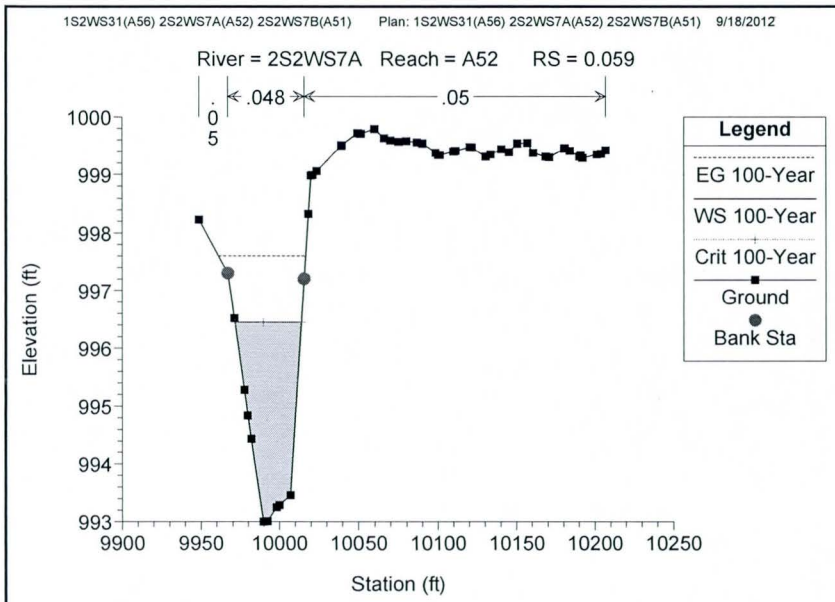
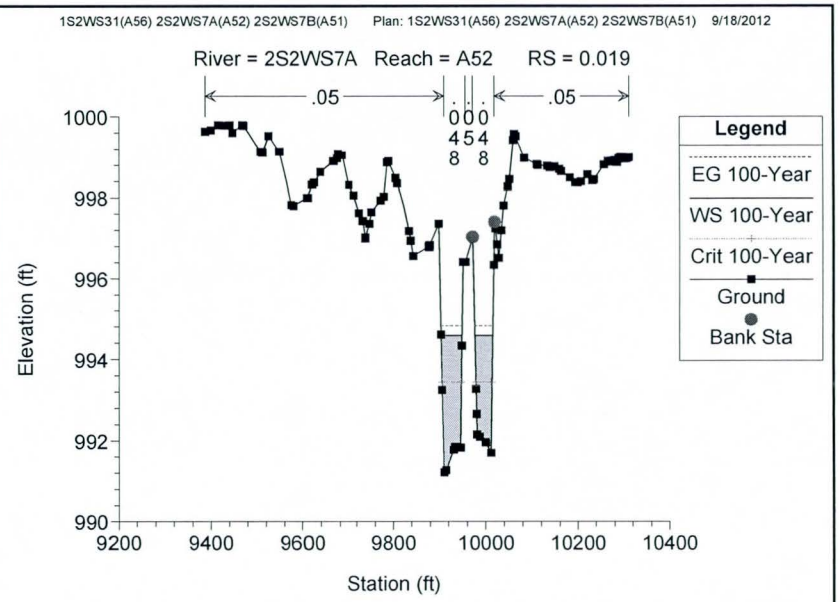
River = 2S2WS7A Reach = A52 RS = 0.817
.05 .048 .05 .05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
River = 2S2WS7A Reach = A52 RS = 0.719
.05 .05 .05
River = 2S2WS7A Reach = A52 RS = 0.624
.05 .048 .05 .048 .05
River = 2S2WS7A Reach = A52 RS = 0.562
.05 .05 .05
Crit 100-Year
Ineff


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 0.443
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 0.340
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 0.254
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 0.152
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7A Reach = A52 RS = 0.059
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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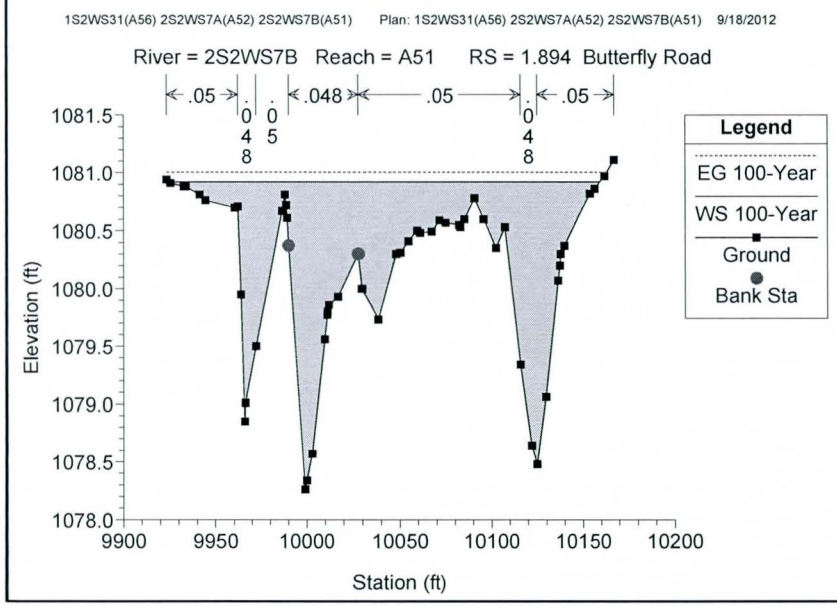
River = 2S2WS7A Reach = A52 RS = 0.019
.05
.05
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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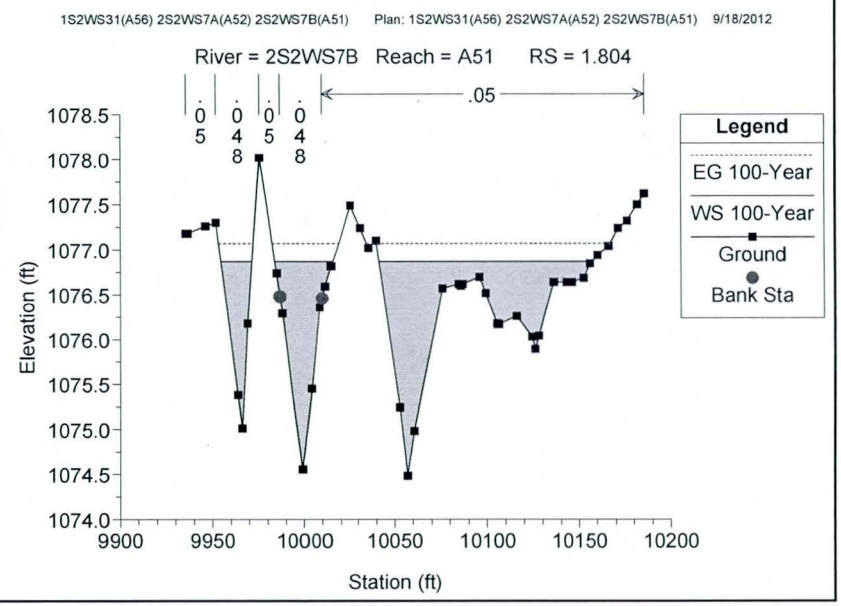
River = 2S2WS7B Reach = A51 RS = 1.894 Butterfly Road
.05
.048
.05
.05
.048
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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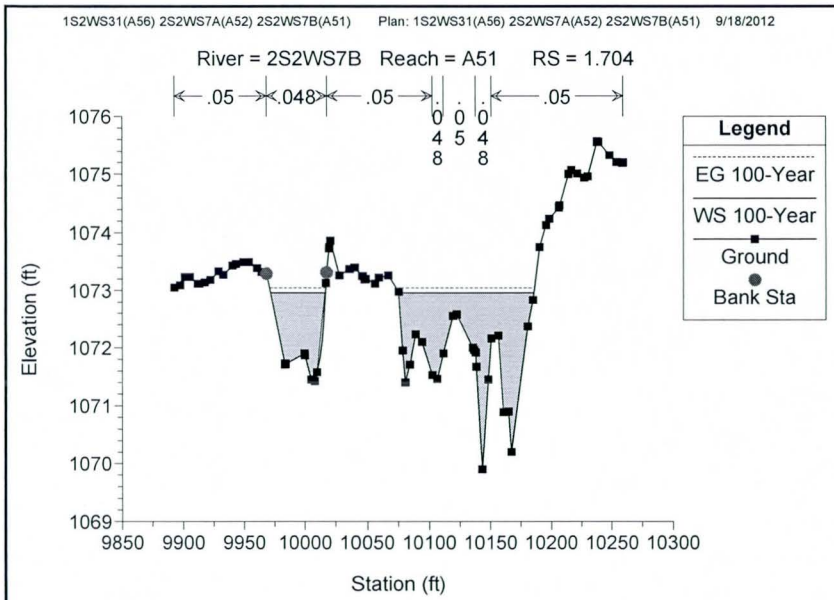
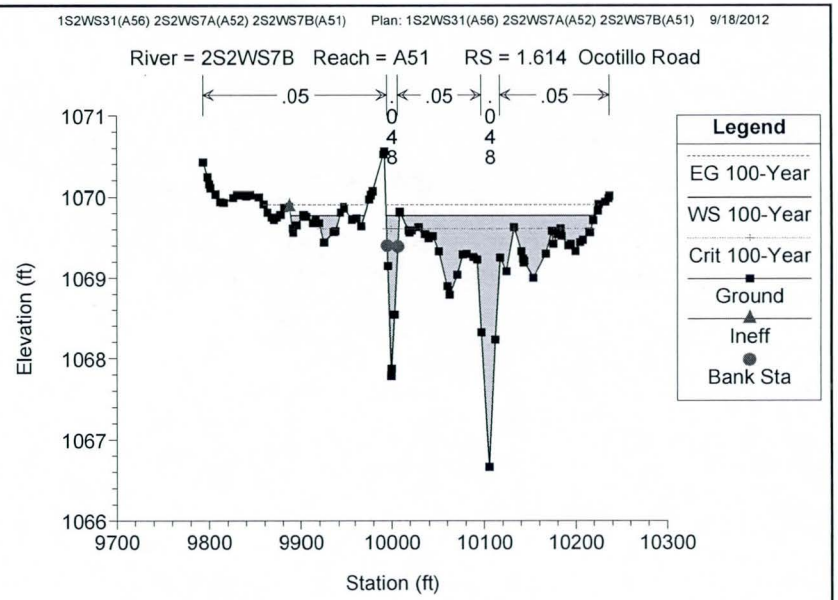
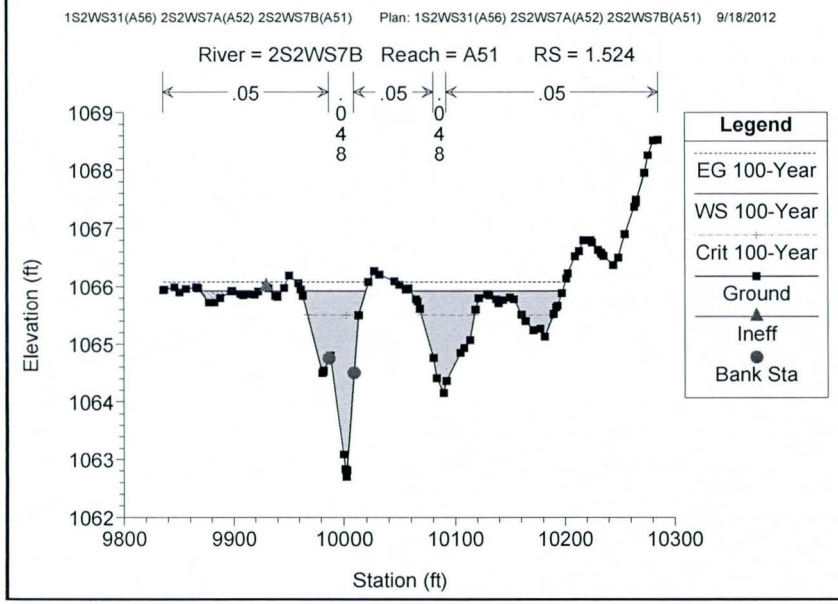
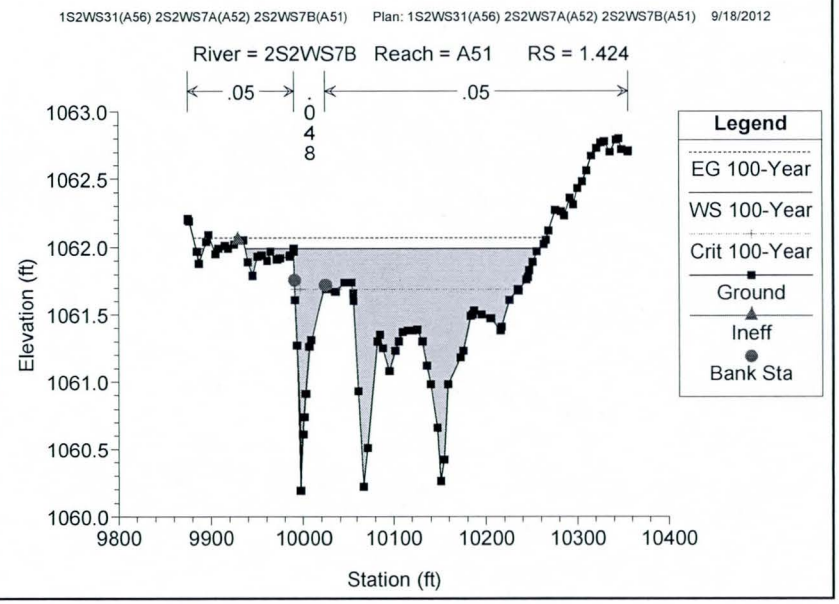
River = 2S2WS7B Reach = A51 RS = 1.804
.05
.05
.048
.05
.048
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 1.704
.05
.048
.05
.048
.050
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 1.614 Ocotillo Road
.05
.048
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 1.524
.05
.048
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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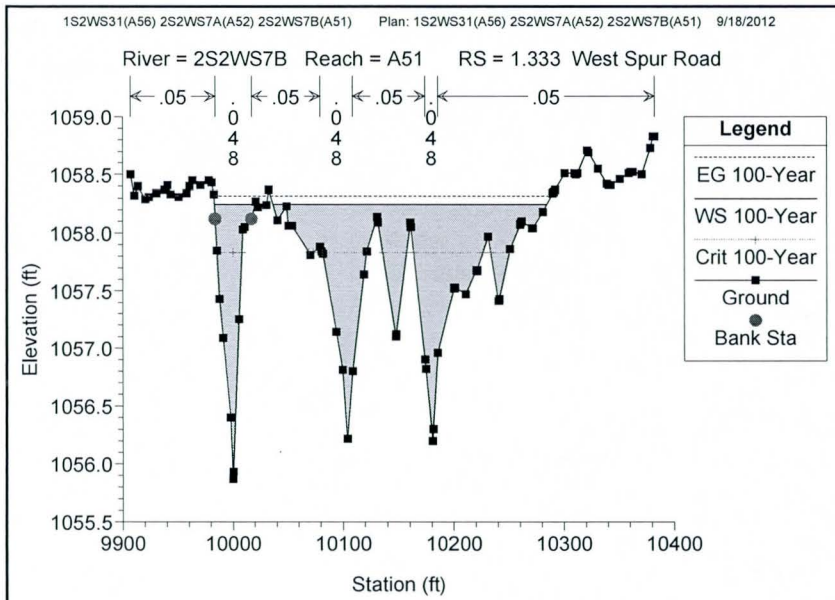
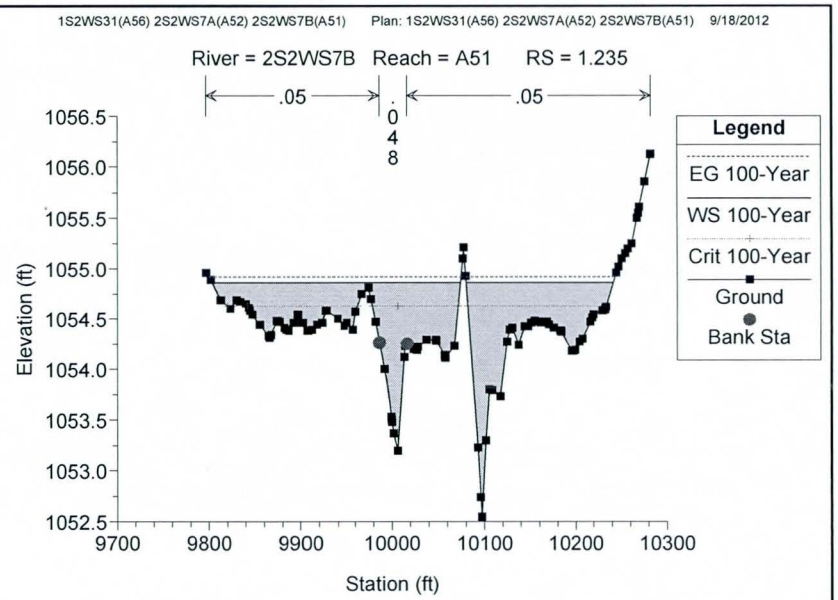
River = 2S2WS7B Reach = A51 RS = 1.424
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 1.333 West Spur Road
.05
.048
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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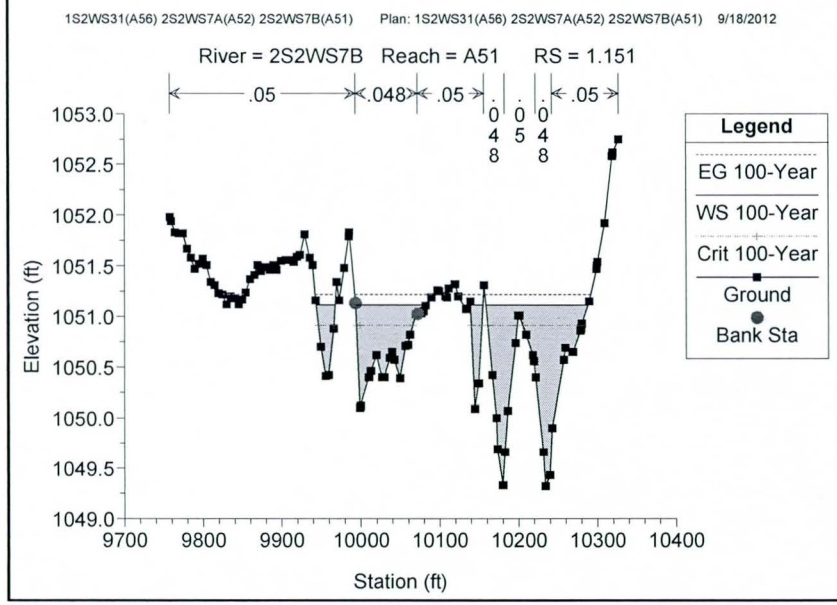
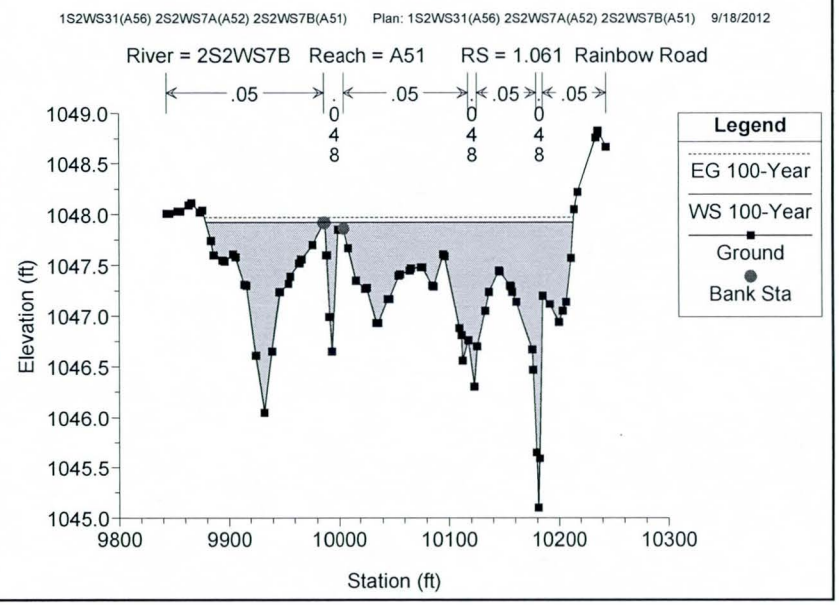
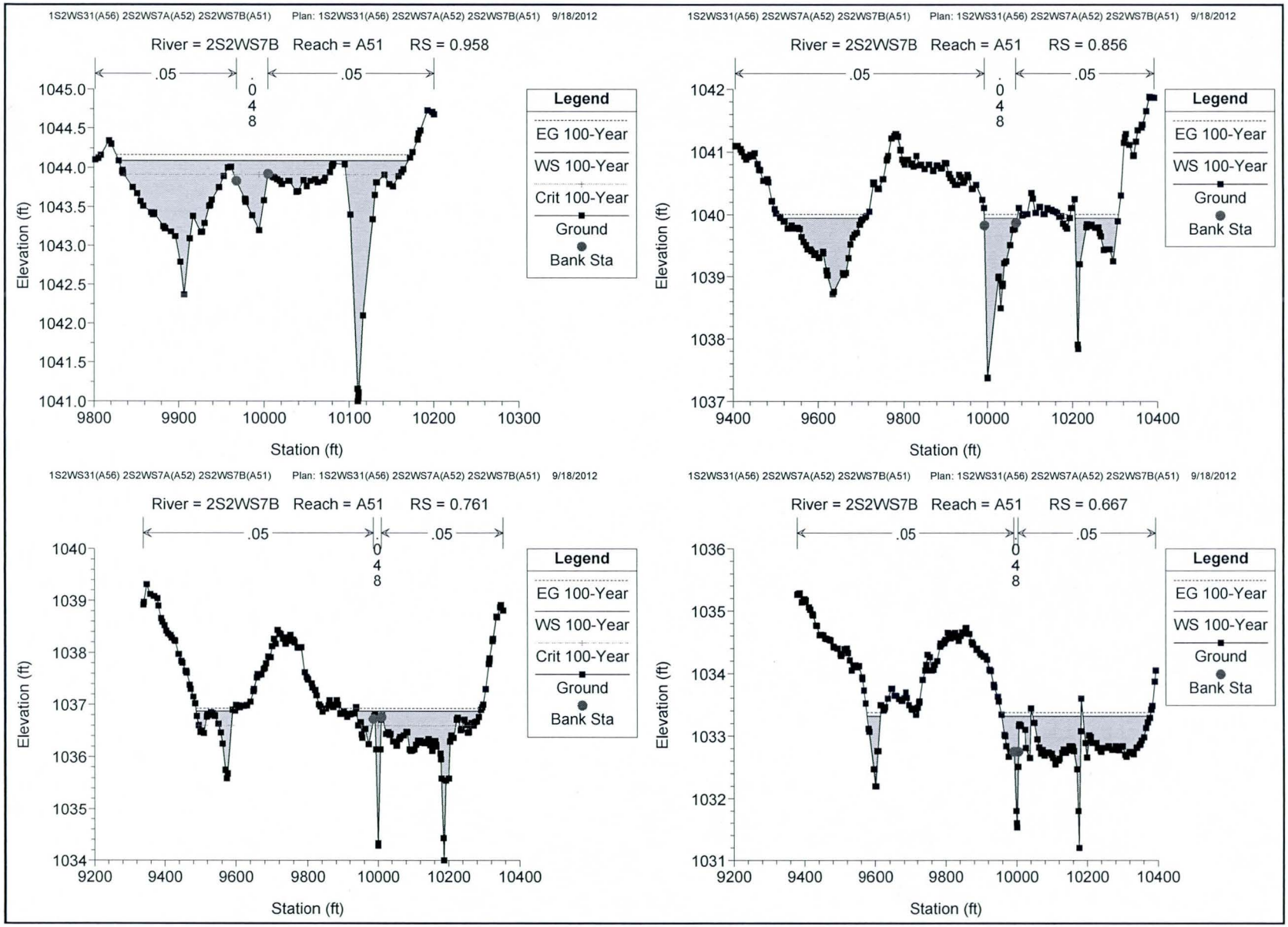
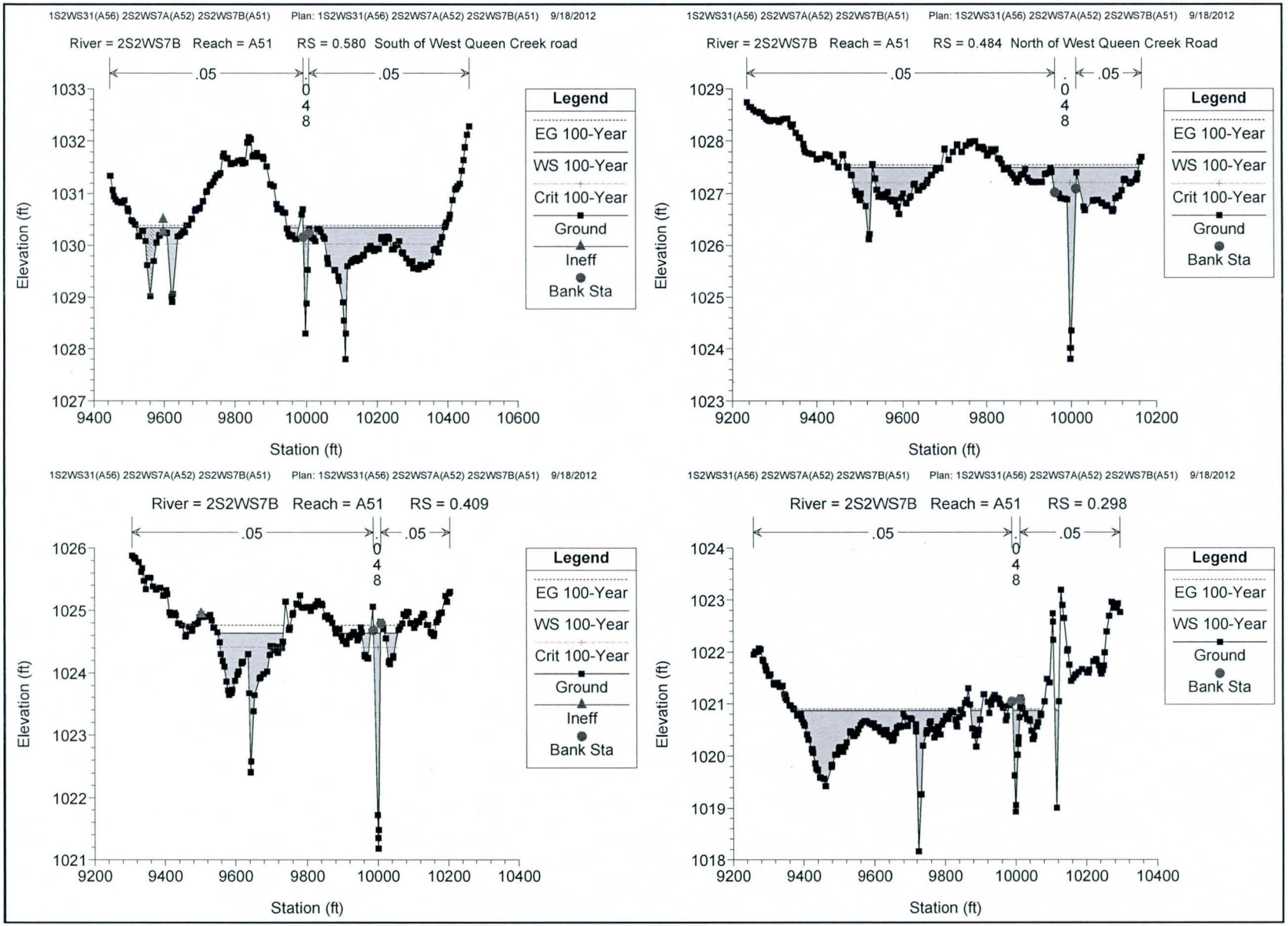
River = 2S2WS7B Reach = A51 RS = 1.235
.05
.048
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 1.151
.05
.048
.05
.05
.048
.054
.048
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

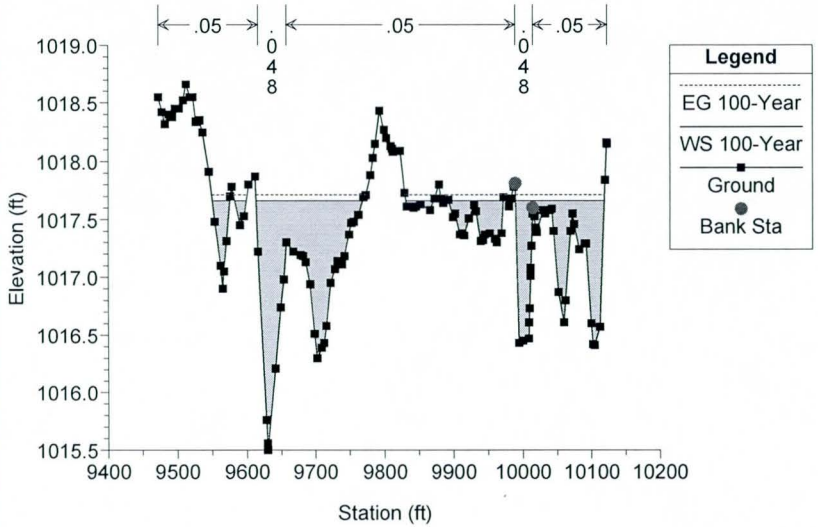

1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 1.061 Rainbow Road
.05
.048
.05
.048
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 0.958
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 0.856
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 0.761
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 0.667
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 0.580 South of West Queen Creek road
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 0.484 North of West Queen Creek Road
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 0.409
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012
River = 2S2WS7B Reach = A51 RS = 0.298
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

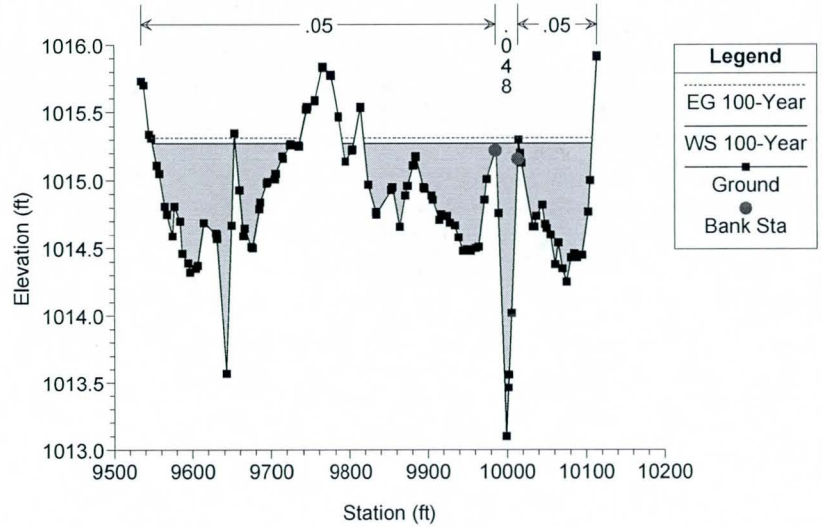
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012

River = 2S2WS7B Reach = A51 RS = 0.184



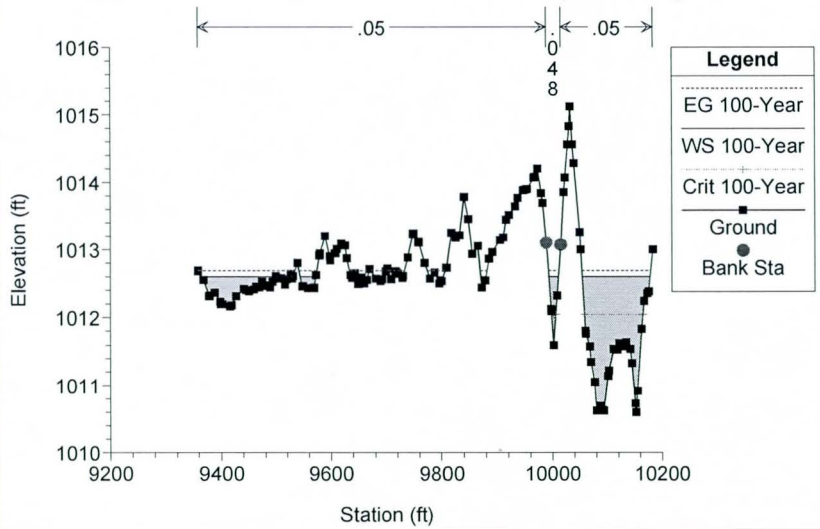
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012

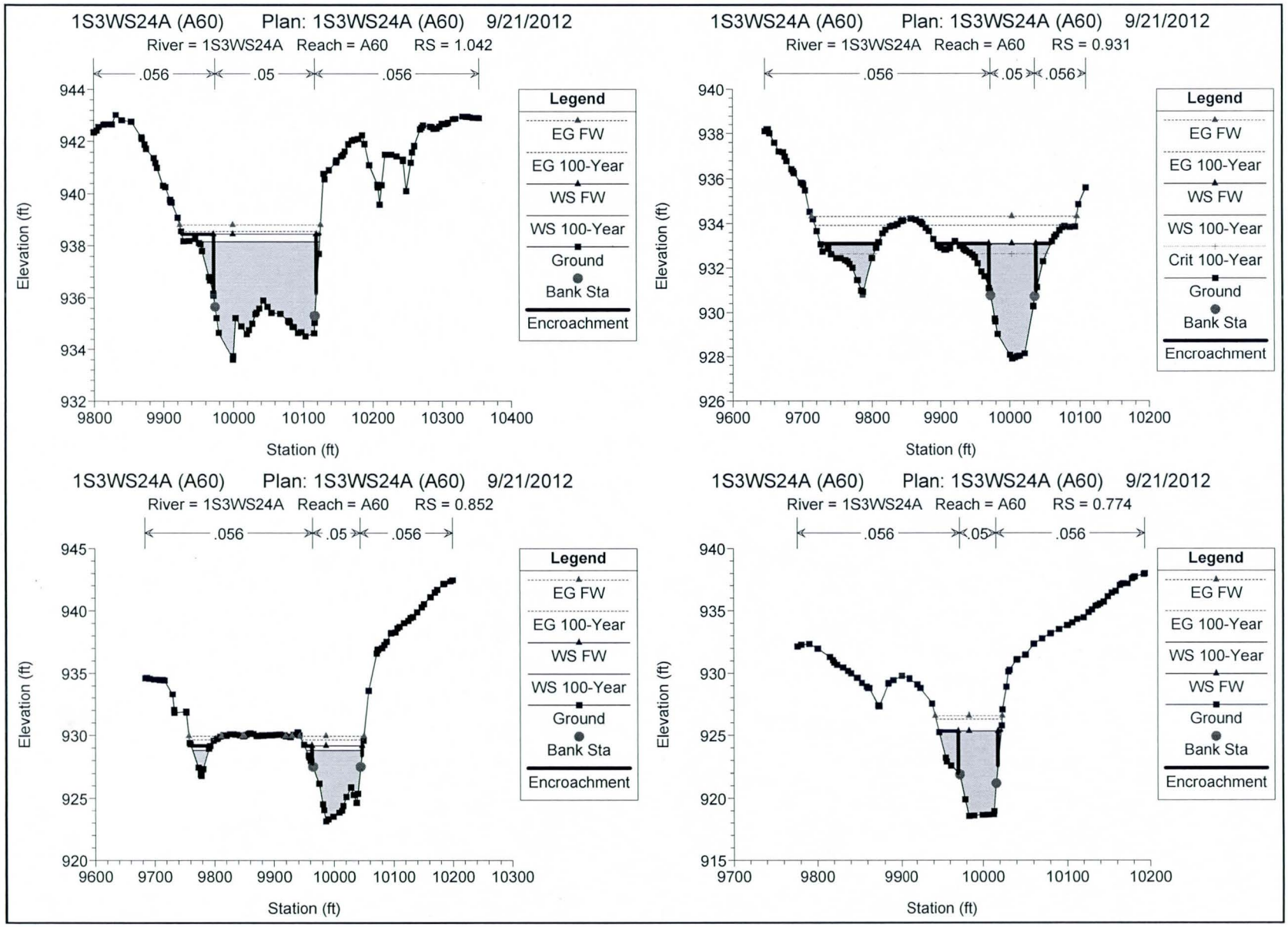
River = 2S2WS7B Reach = A51 RS = 0.099

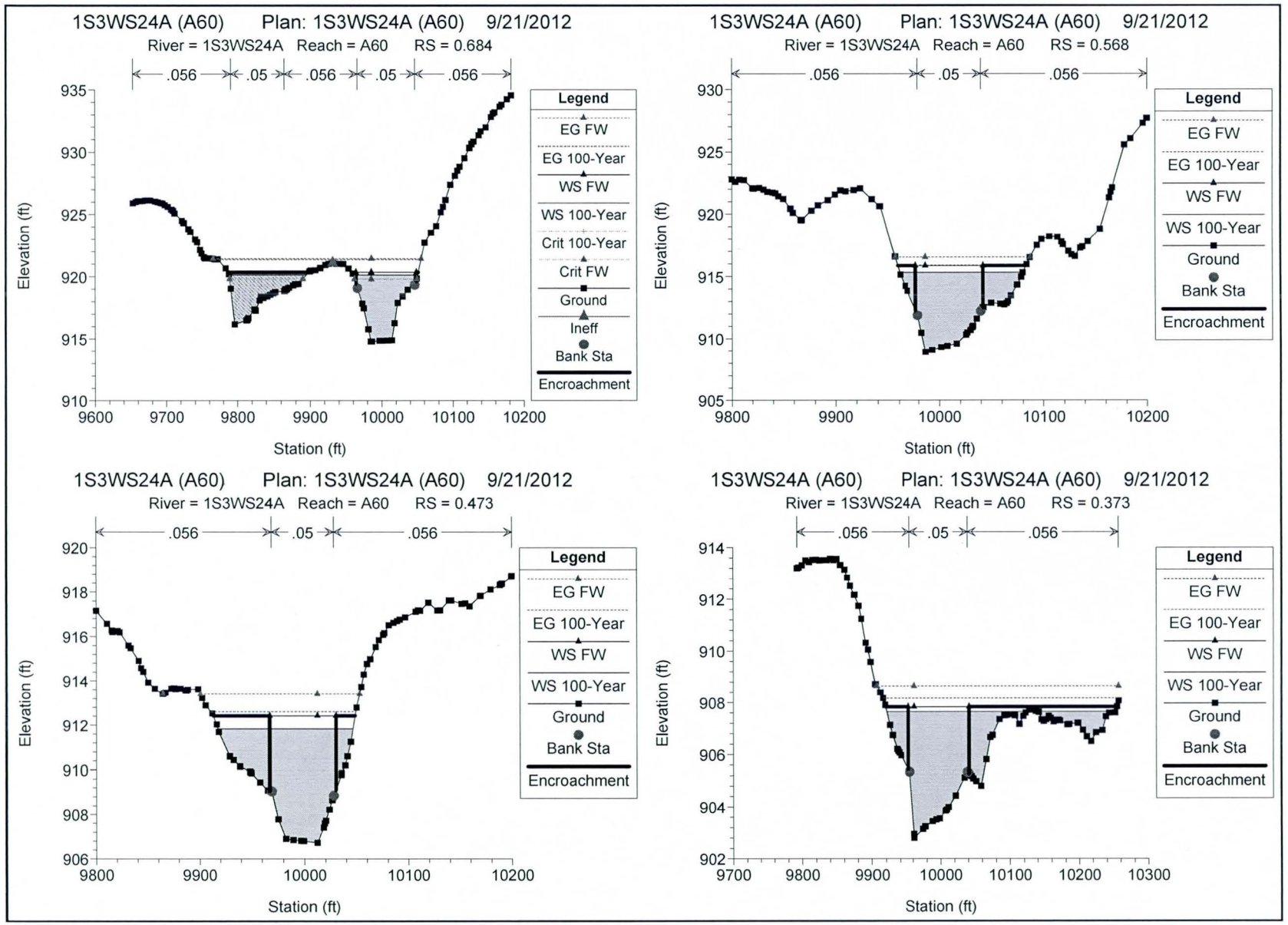


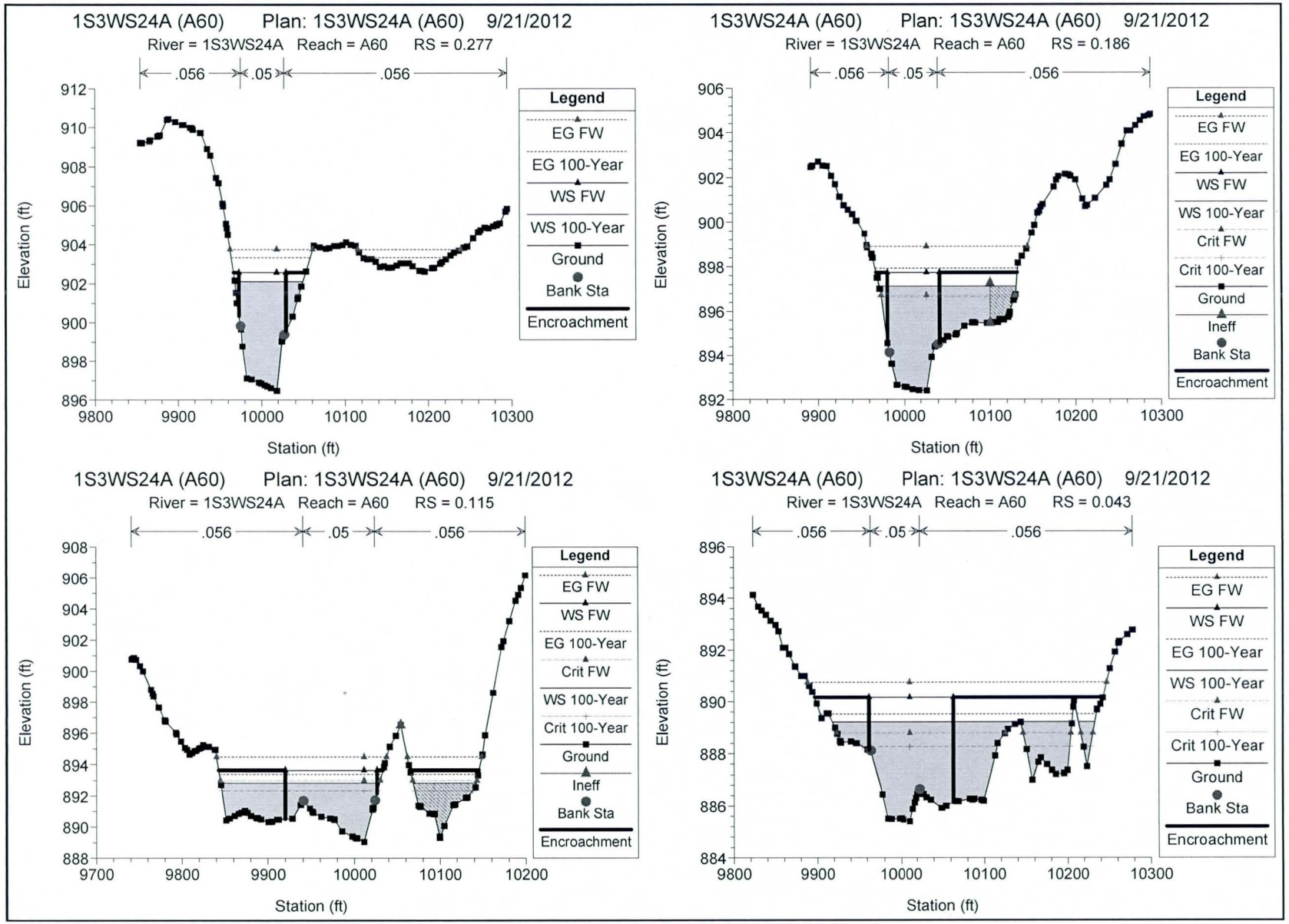
1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) Plan: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51) 9/18/2012

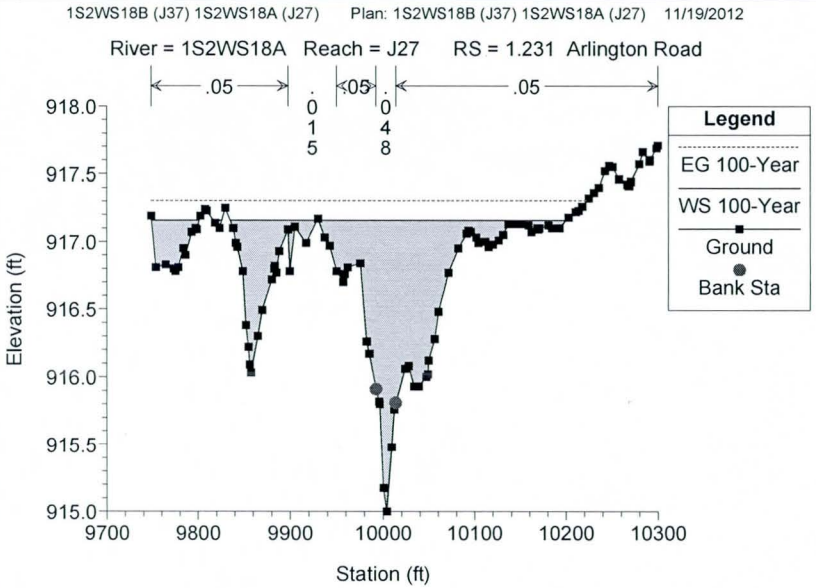
River = 2S2WS7B Reach = A51 RS = 0.006 West Ryan Street Alignment

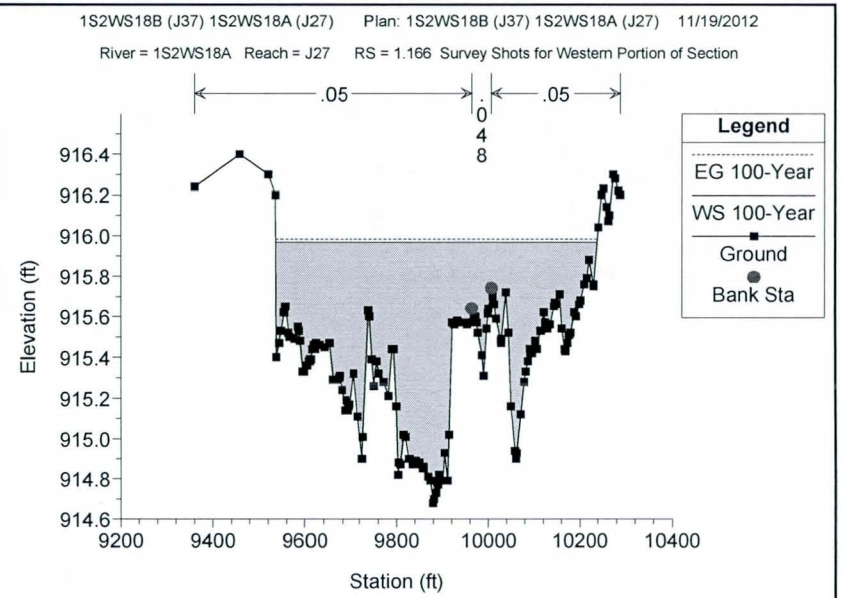


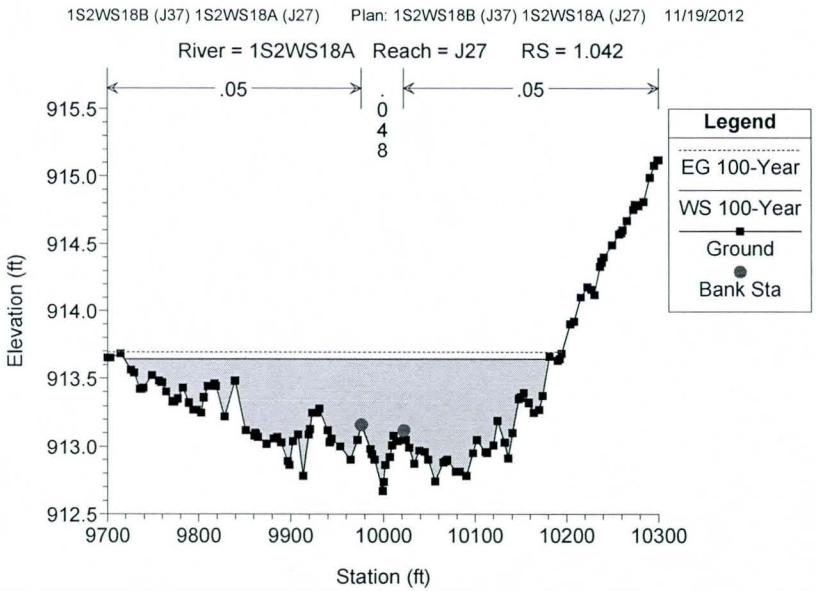

1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 1.042
.056
.05
.056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Ground
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.931
.056
.05
.056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.852
.056
.05
.056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Ground
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.774
.056
.05
.056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS 100-Year
WS FW
Ground
Bank Sta
Encroachment

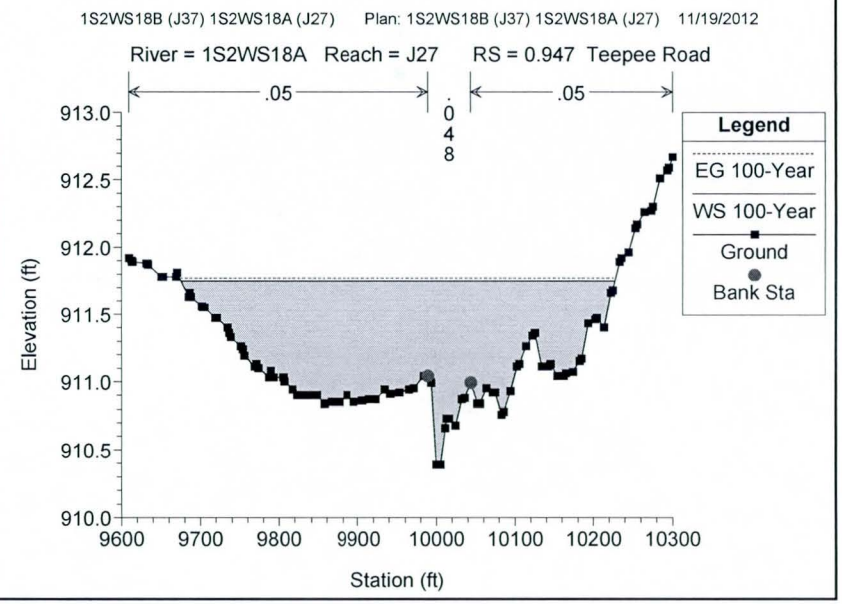

1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.684
.056 .05 .056 .05 .056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Crit 100-Year
Crit FW
Ground
Ineff
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.568
.056 .05 .056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Ground
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.473
.056 .05 .056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Ground
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.373
.056 .05 .056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Ground
Bank Sta
Encroachment

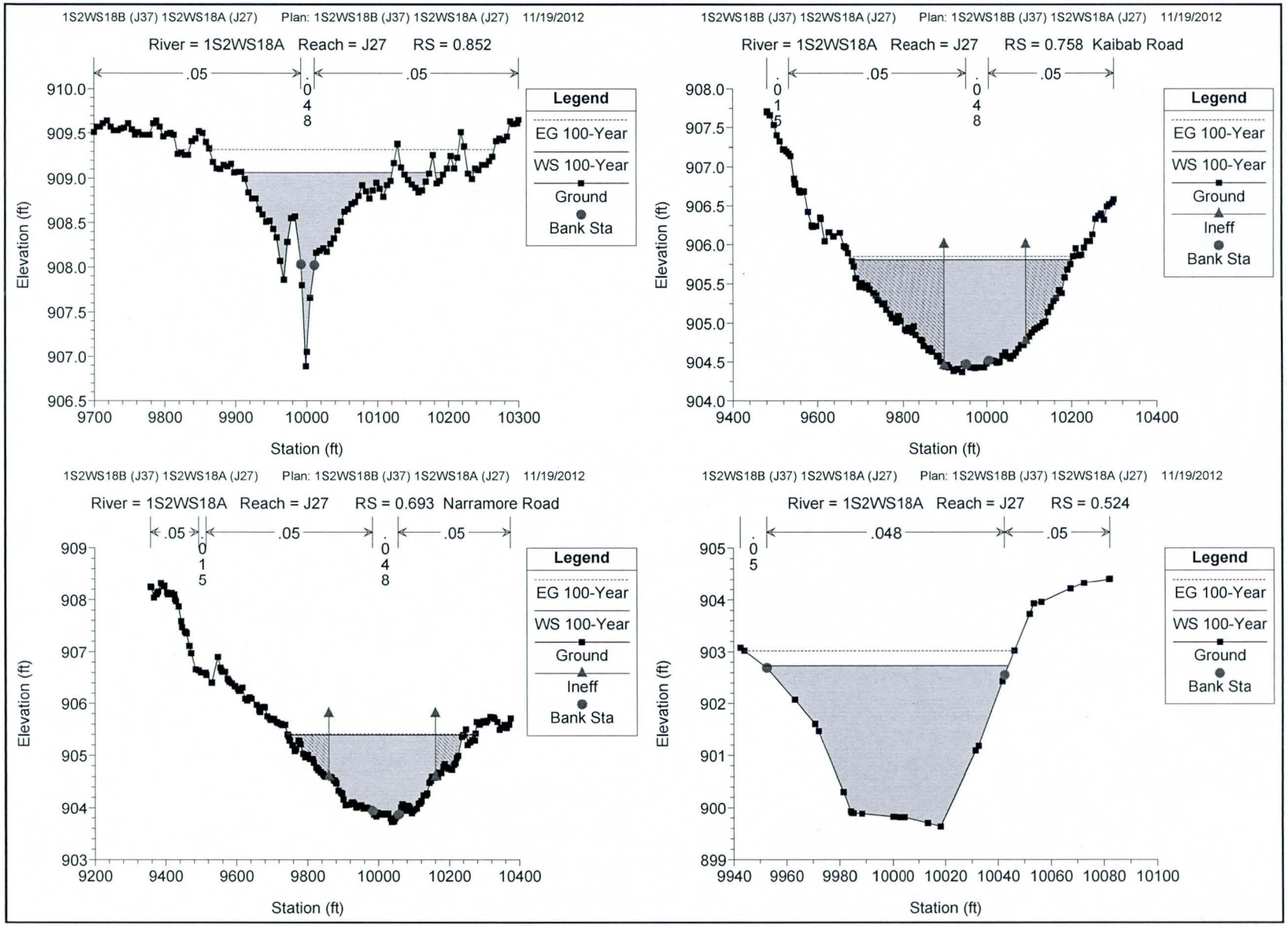

1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.277
.056 .05 .056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Ground
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.186
.056 .05 .056
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Crit FW
Crit 100-Year
Ground
Ineff
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.115
.056 .05 .056
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
Crit FW
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Encroachment
1S3WS24A (A60) Plan: 1S3WS24A (A60) 9/21/2012
River = 1S3WS24A Reach = A60 RS = 0.043
.056 .05 .056
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
WS 100-Year
Crit FW
Crit 100-Year
Ground
Bank Sta
Encroachment

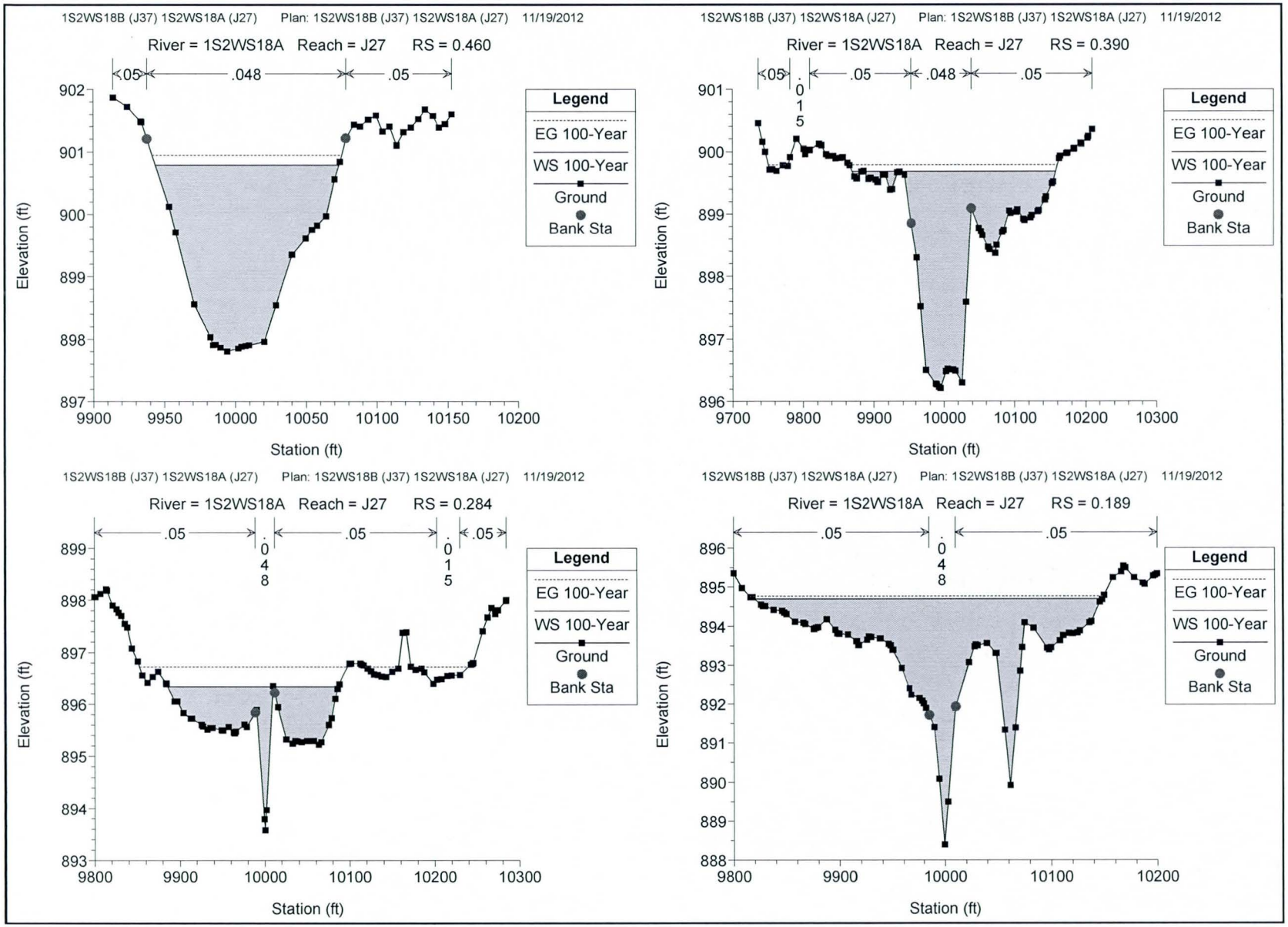

1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 1.231 Arlington Road
.05
.015
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

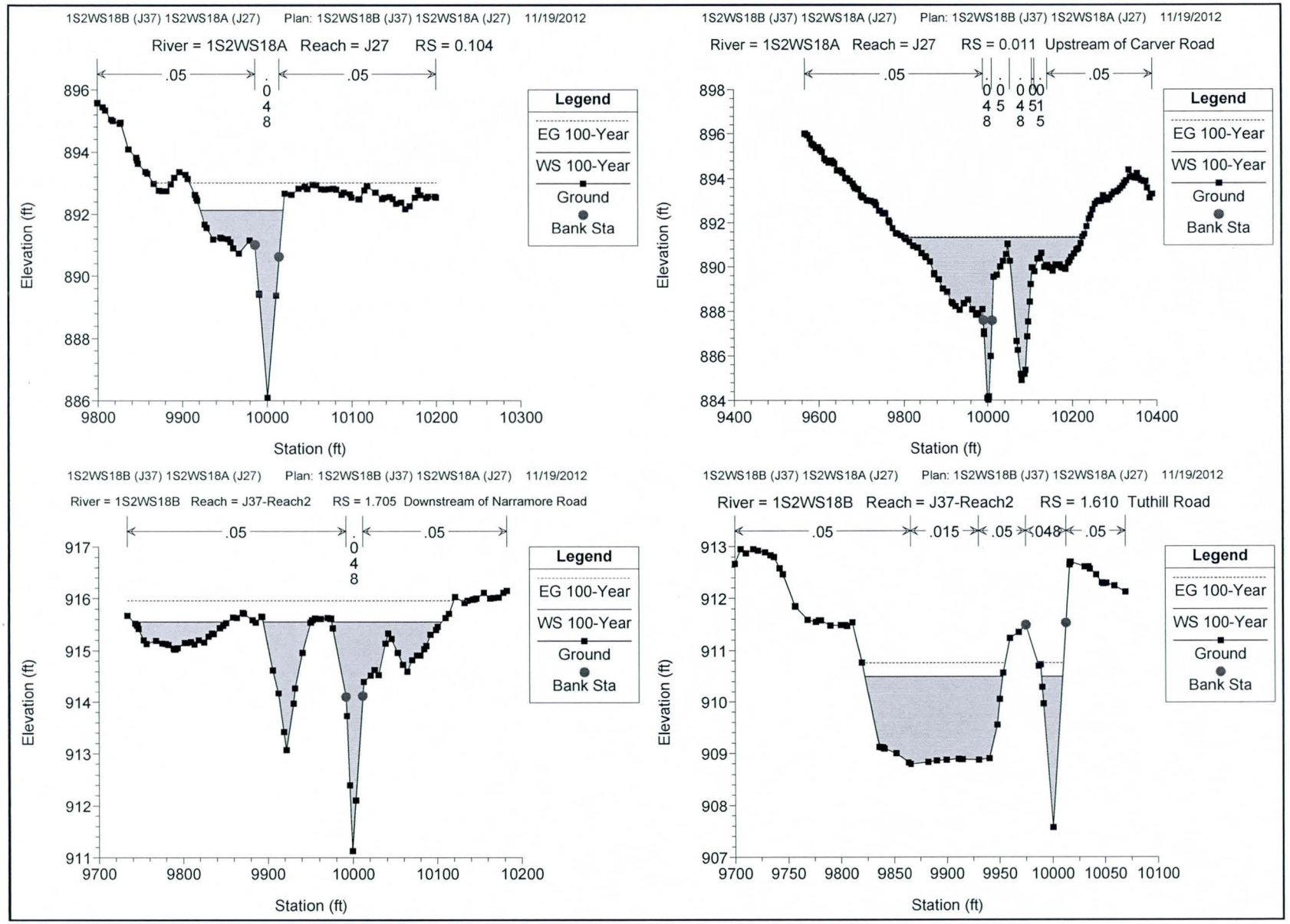

1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 1.166 Survey Shots for Western Portion of Section
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

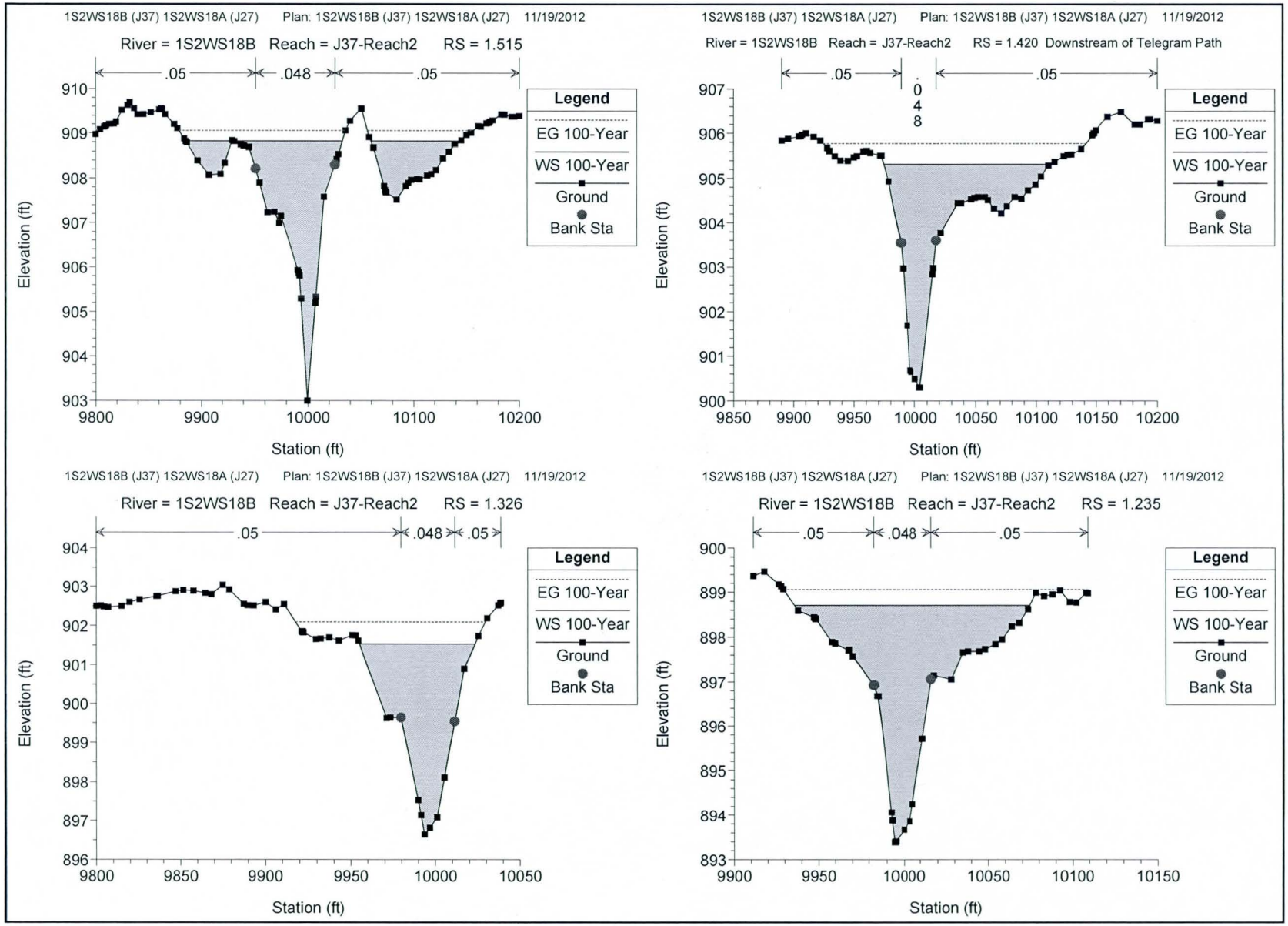

1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 1.042
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.947 Teepee Road
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.852
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.758 Kaibab Road
.015
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.693 Narramore Road
.05
.015
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.524
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

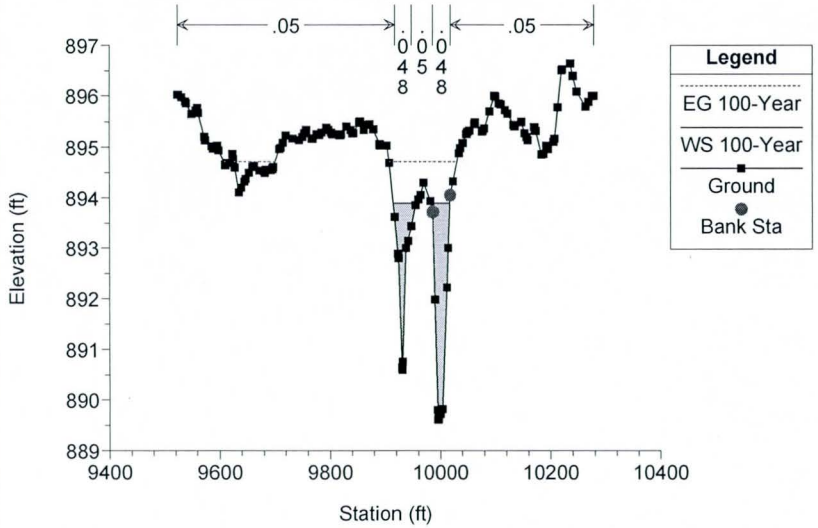

1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.460
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.390
.05
.015
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.284
.05
.048
.05
.015
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.189
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.104
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18A Reach = J27 RS = 0.011 Upstream of Carver Road
.05
.048
.045
.048
.0051
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach2 RS = 1.705 Downstream of Narramore Road
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach2 RS = 1.610 Tuthill Road
.05
.015
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach2 RS = 1.515
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach2 RS = 1.420 Downstream of Telegram Path
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach2 RS = 1.326
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach2 RS = 1.235
.05
.048
.05
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

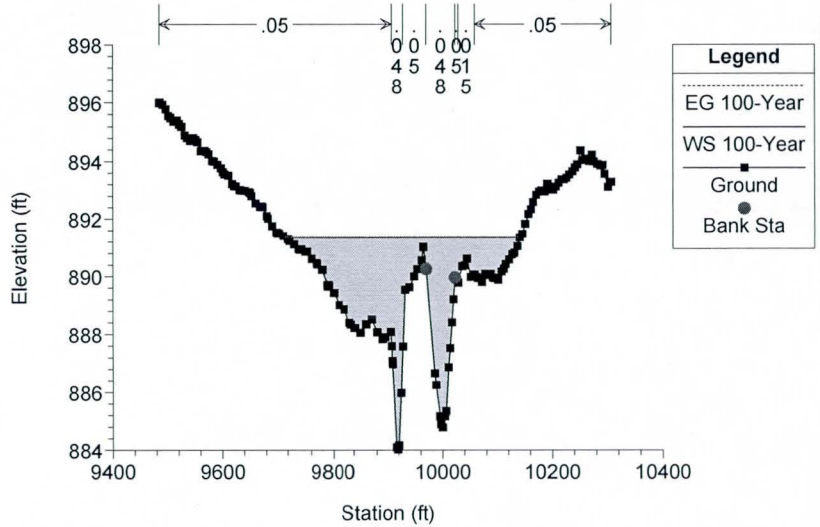
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

River = 1S2WS18B Reach = J37-Reach2 RS = 1.143



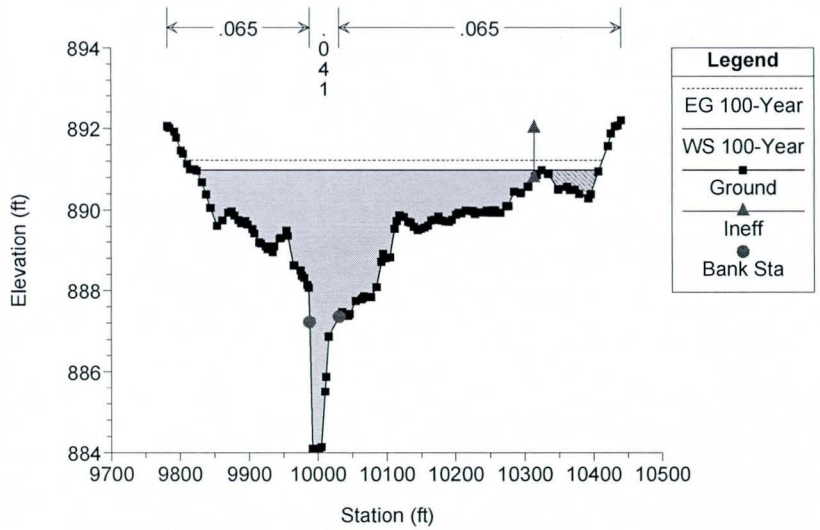
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

River = 1S2WS18B Reach = J37-Reach2 RS = 1.038 Upstream of Carver Road



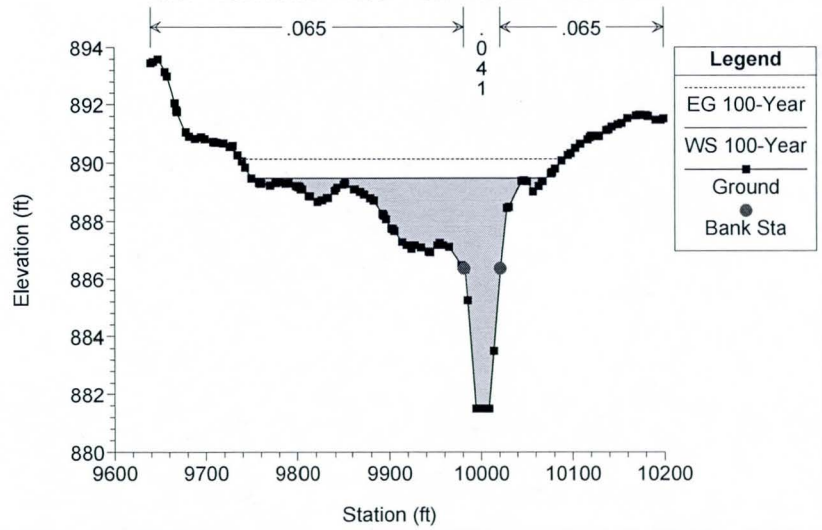
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

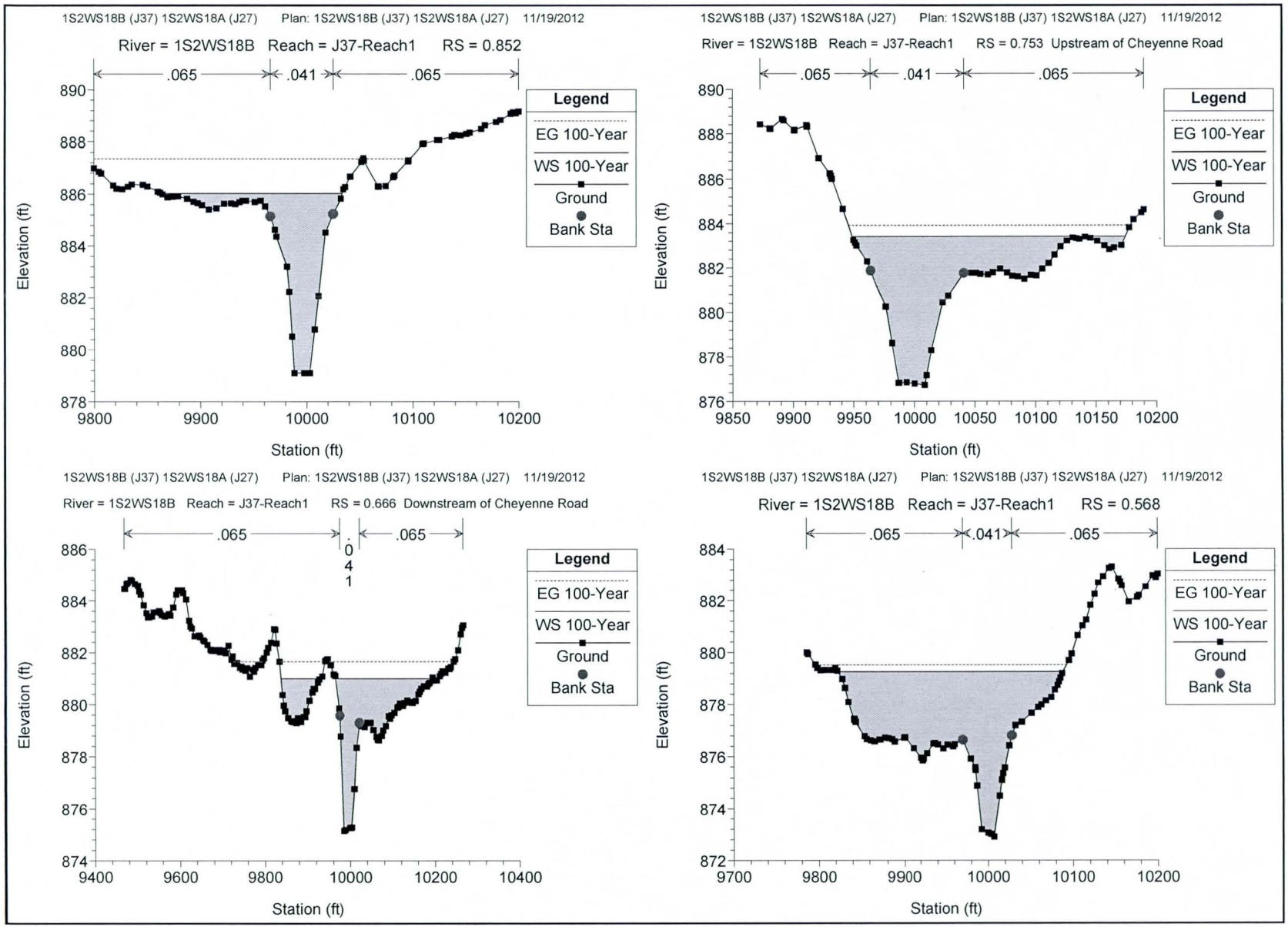
River = 1S2WS18B Reach = J37-Reach1 RS = 1.012 Downstream of Carver Road



1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

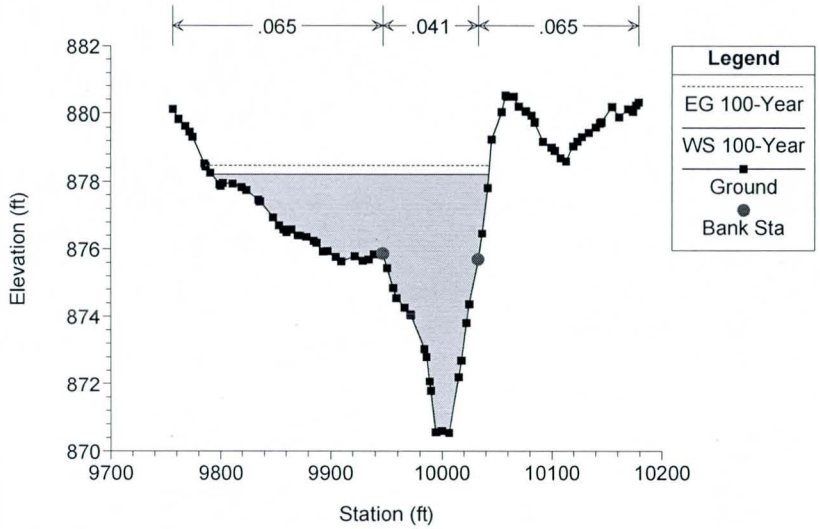
River = 1S2WS18B Reach = J37-Reach1 RS = 0.942




1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach1 RS = 0.852
.065
.041
.065
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach1 RS = 0.753 Upstream of Cheyenne Road
.065
.041
.065
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach1 RS = 0.666 Downstream of Cheyenne Road
.065
.041
.065
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012
River = 1S2WS18B Reach = J37-Reach1 RS = 0.568
.065
.041
.065
Legend
EG 100-Year
WS 100-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

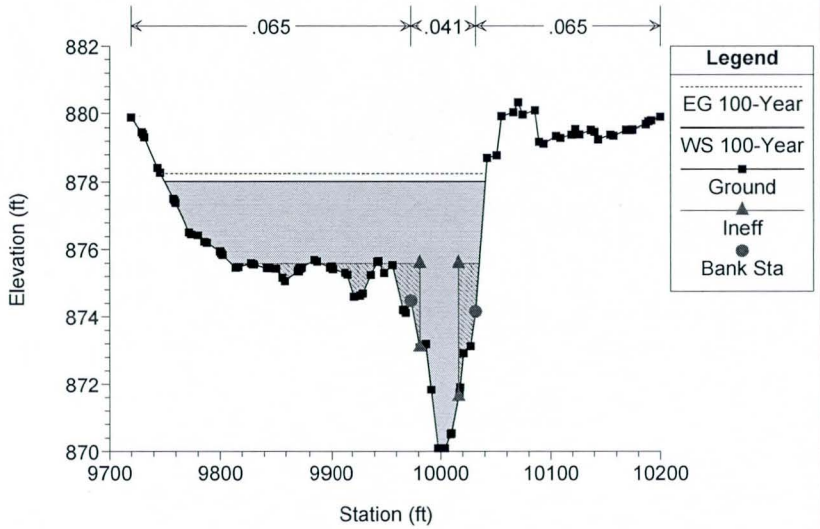
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

River = 1S2WS18B Reach = J37-Reach1 RS = 0.473 XS #4 Upstream of Elliot Road Culvert



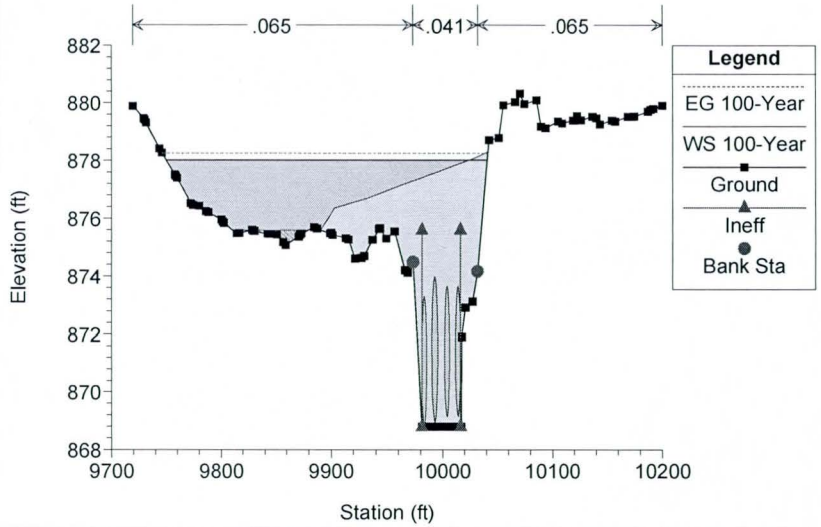
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

River = 1S2WS18B Reach = J37-Reach1 RS = 0.452 XS #3 Upstream of Elliot Road Culvert



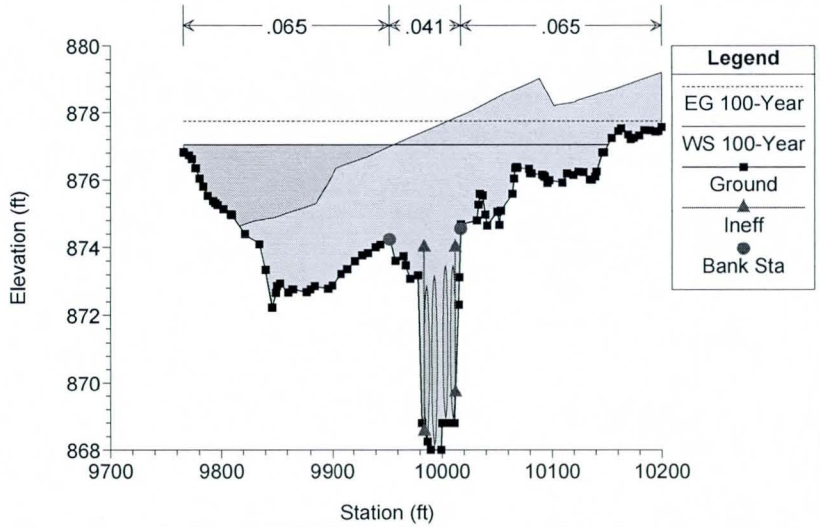
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

River = 1S2WS18B Reach = J37-Reach1 RS = 0.444 Culv Elliot Road Culverts



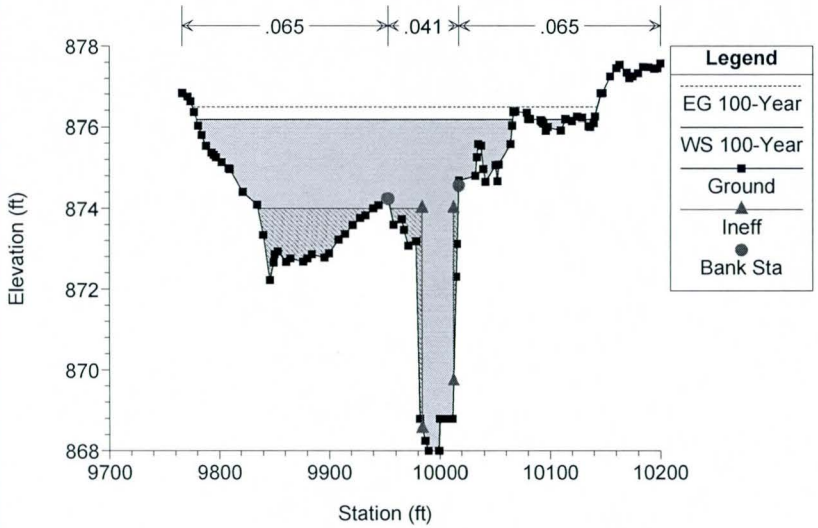
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

River = 1S2WS18B Reach = J37-Reach1 RS = 0.444 Culv Elliot Road Culverts



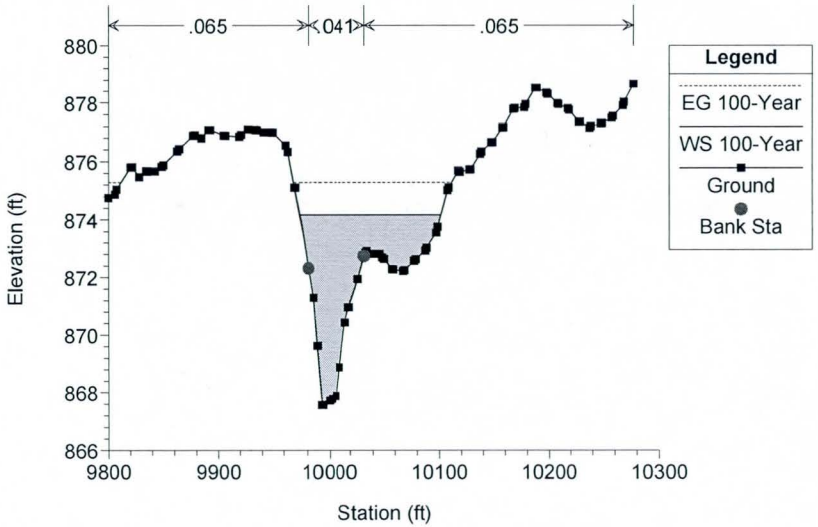
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

River = 1S2WS18B Reach = J37-Reach1 RS = 0.436 XS #2 Downstream of Elliot Road Culvert



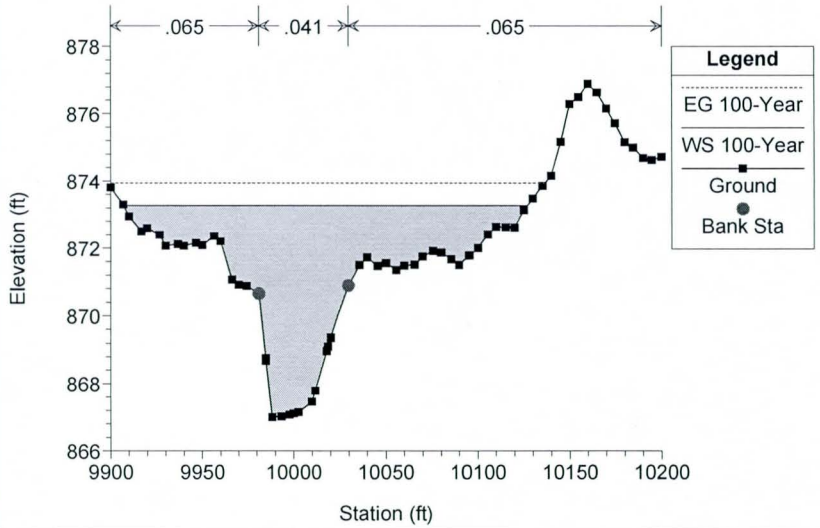
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

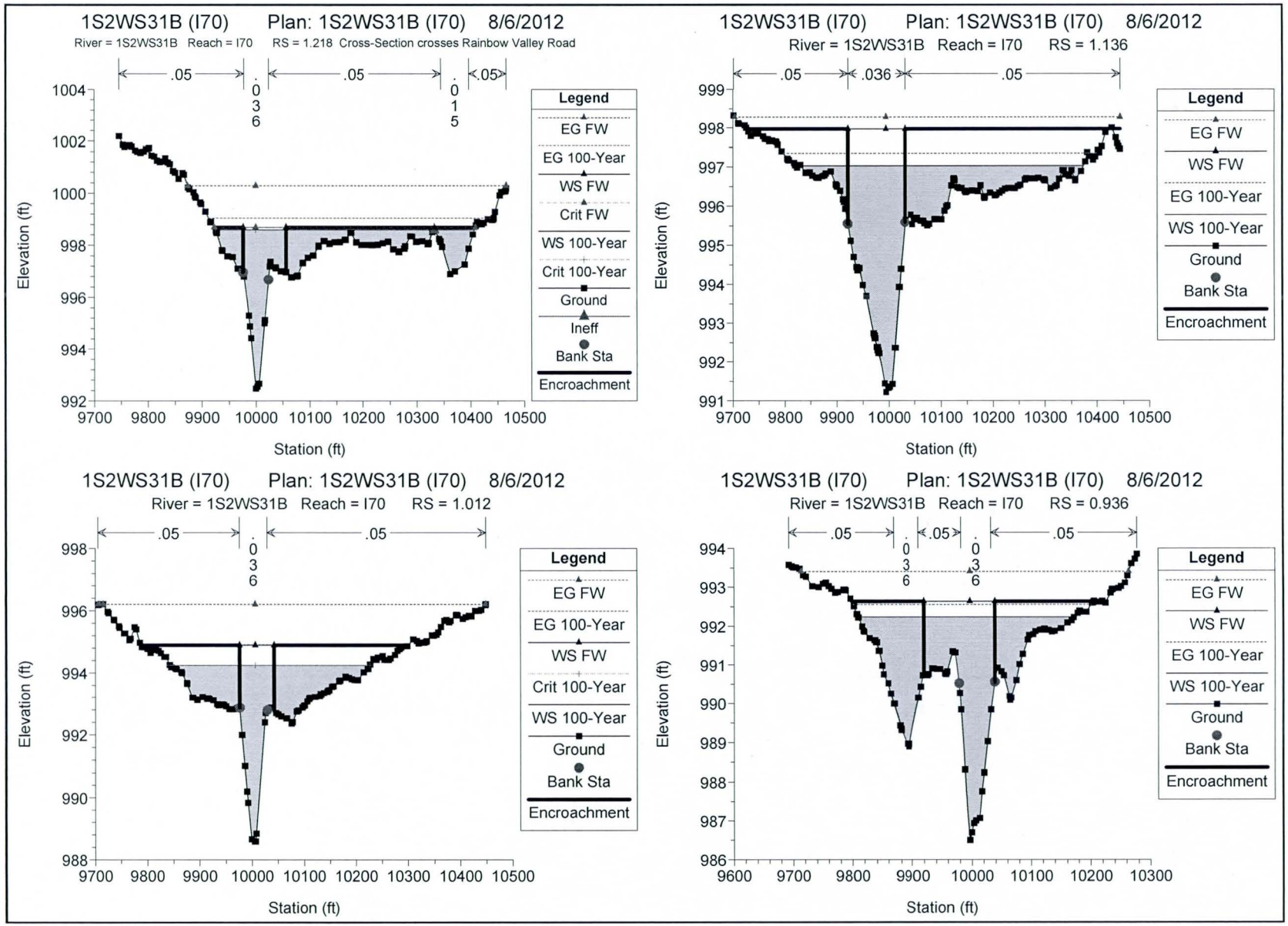
River = 1S2WS18B Reach = J37-Reach1 RS = 0.398 XS #1 Downstream of Elliot Road Culvert

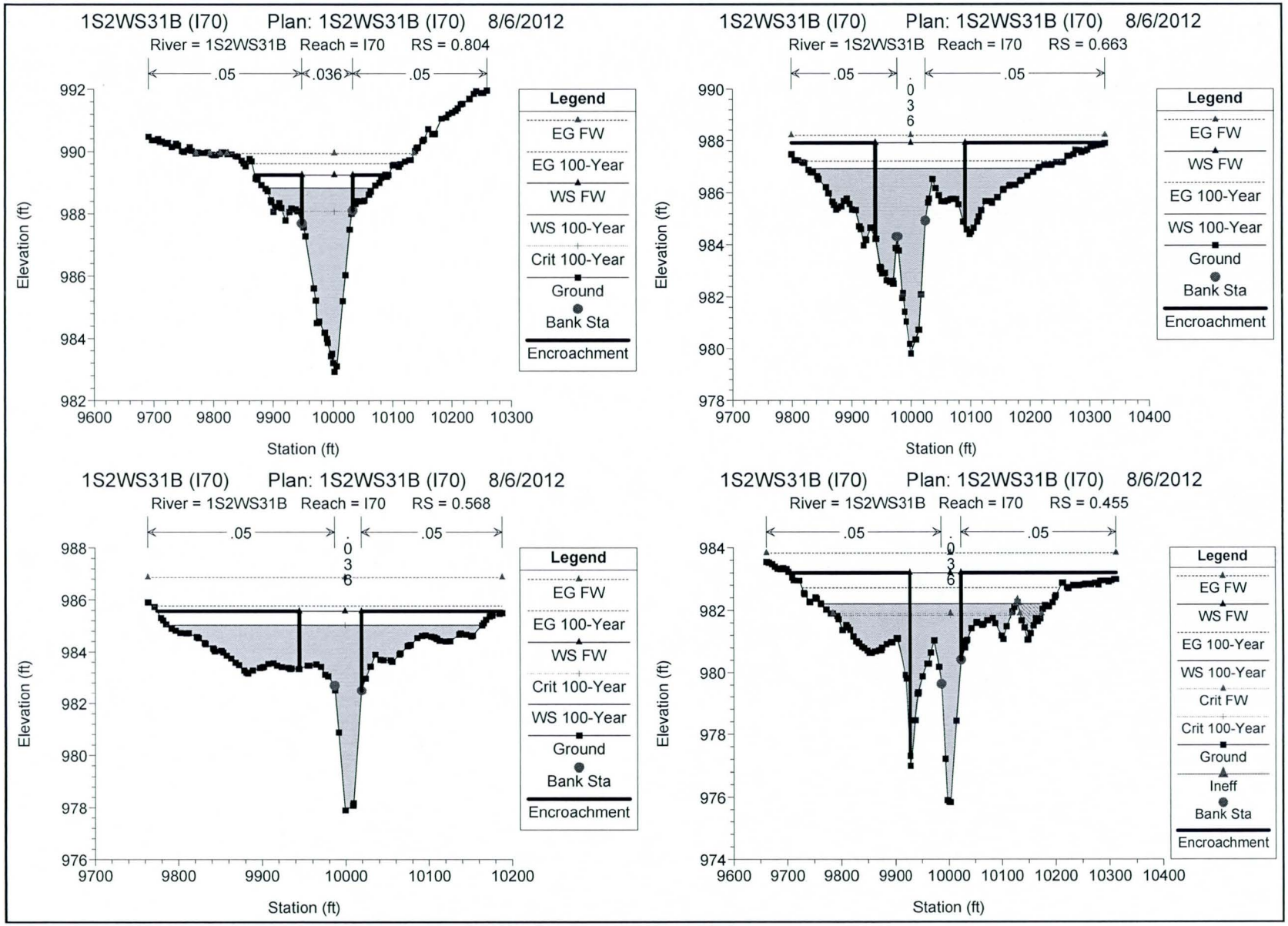


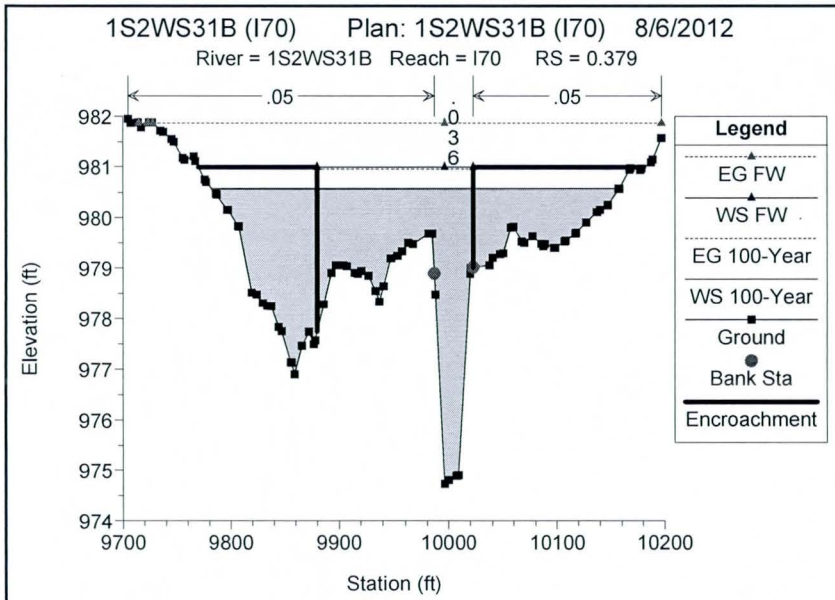
1S2WS18B (J37) 1S2WS18A (J27) Plan: 1S2WS18B (J37) 1S2WS18A (J27) 11/19/2012

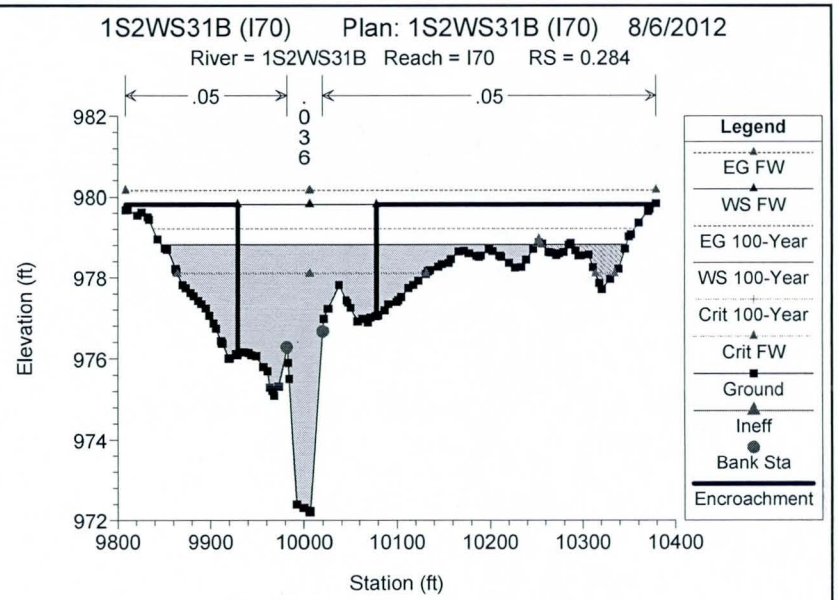
River = 1S2WS18B Reach = J37-Reach1 RS = 0.363 1920 Feet upstream of confluence with Gila River

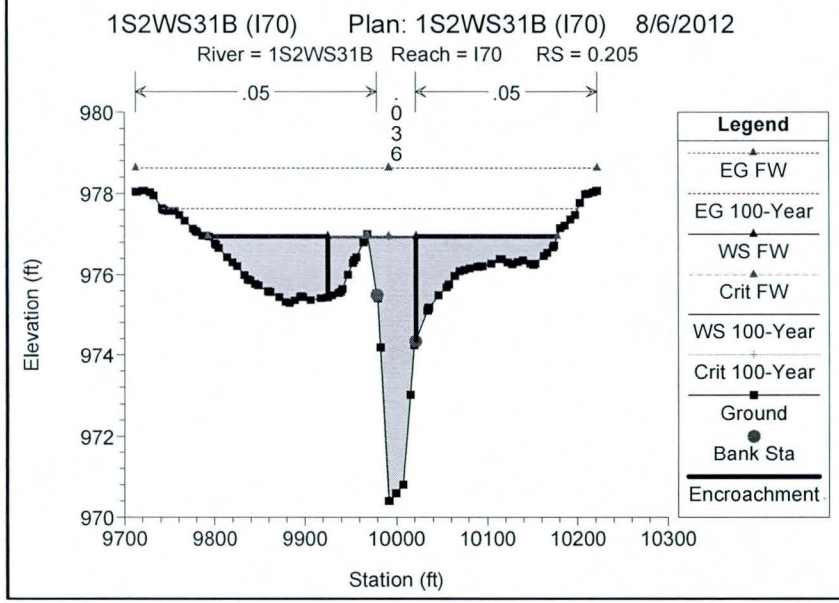


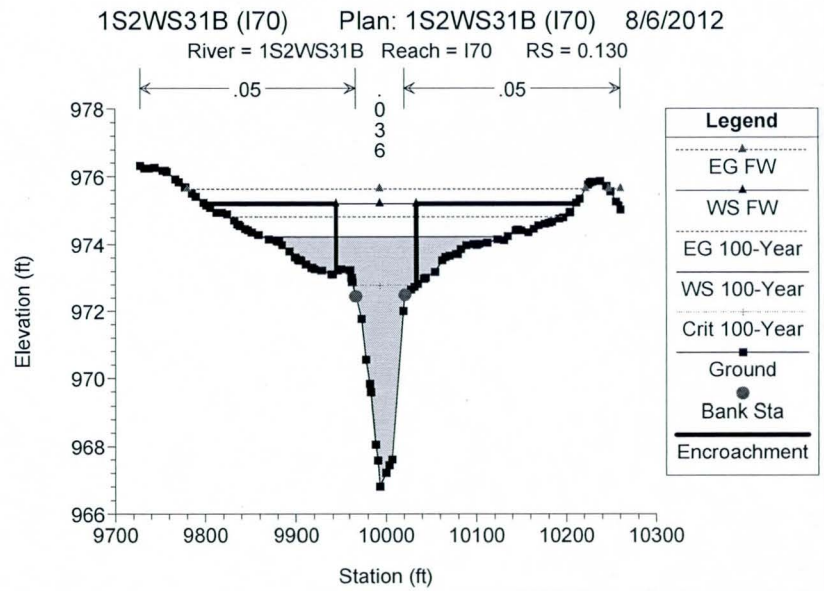

1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 1.218 Cross-Section crosses Rainbow Valley Road
.05
.036
.05
.015
.05
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
Crit FW
WS 100-Year
Crit 100-Year
Ground
Ineff
Bank Sta
Encroachment
1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 1.136
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
WS 100-Year
Ground
Bank Sta
Encroachment
1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 1.012
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
Crit 100-Year
WS 100-Year
Ground
Bank Sta
Encroachment
1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.936
.05
.036
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
WS 100-Year
Ground
Bank Sta
Encroachment

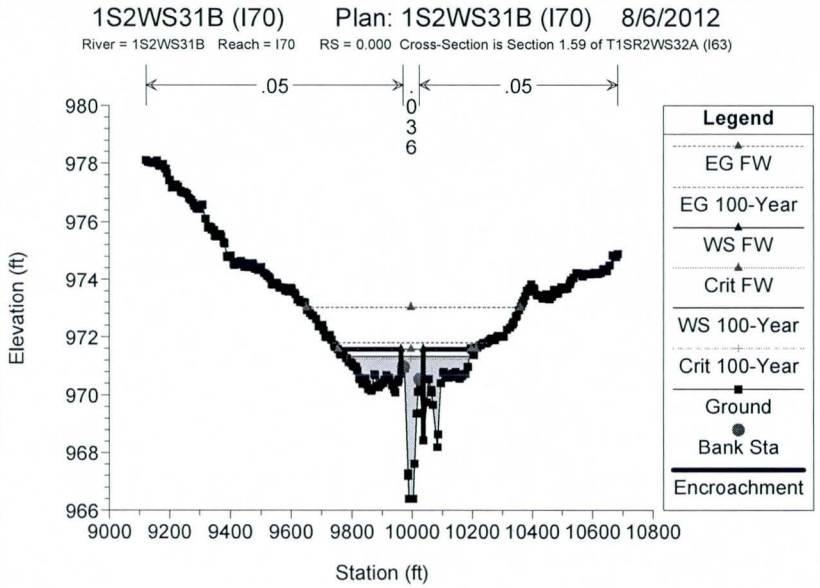

1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.804
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Encroachment
1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.663
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
WS 100-Year
Ground
Bank Sta
Encroachment
1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.568
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
Crit 100-Year
WS 100-Year
Ground
Bank Sta
Encroachment
1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.455
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
WS 100-Year
Crit FW
Crit 100-Year
Ground
Ineff
Bank Sta
Encroachment


1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.379
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
WS 100-Year
Ground
Bank Sta
Encroachment


1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.284
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
WS 100-Year
Crit 100-Year
Crit FW
Ground
Ineff
Bank Sta
Encroachment


1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.205
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
Crit FW
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Encroachment


1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.130
.05
.036
.05
Elevation (ft)
Station (ft)
Legend
EG FW
WS FW
EG 100-Year
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Encroachment


1S2WS31B (I70) Plan: 1S2WS31B (I70) 8/6/2012
River = 1S2WS31B Reach = I70 RS = 0.000 Cross-Section is Section 1.59 of T1SR2WS32A (I63)
.05
.036
.05
Elevation (ft)
980
978
976
974
972
970
968
966
9000 9200 9400 9600 9800 10000 10200 10400 10600 10800
Station (ft)
Legend
EG FW
EG 100-Year
WS FW
Crit FW
WS 100-Year
Crit 100-Year
Ground
Bank Sta
Encroachment

E.3 Expansion and Contraction Coefficient

(No information included in this section, refer to Section 5.3.2)

E.4 Analysis of Structures

(No information included in this section, refer to HEC-RAS Model 1S2WS18B)

HEC-RAS Plan: 1S2WS31 Profile: 100-Year

River	Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1S2WS31	A56	0.055	2051.00	938.41	944.33	942.39	944.64	0.003606	4.52	510.16	341.28	0.41
1S2WS31	A56	0.154	2051.00	941.34	946.21		946.42	0.003241	3.74	570.41	312.47	0.37
1S2WS31	A56	0.381	2051.00	948.14	952.50	952.46	953.01	0.010764	6.47	481.69	582.03	0.66
1S2WS31	A56	0.477	2051.00	951.34	955.69		955.90	0.003482	4.02	693.29	679.25	0.39
1S2WS31	A56	0.571	2051.00	953.44	958.33	958.33	958.80	0.007008	6.26	551.16	827.96	0.56
1S2WS31	A56	0.666	2051.00	956.30	960.98		961.19	0.003469	4.49	783.85	925.04	0.40
1S2WS31	A56	0.760	2051.00	958.51	962.96		963.33	0.005108	5.09	477.01	366.96	0.48
1S2WS31	A56	0.837	2051.00	960.40	965.22		965.86	0.007205	6.64	335.64	110.03	0.58
1S2WS31	A56	0.950	2051.00	963.05	968.22		968.44	0.002832	4.10	698.48	603.13	0.36
1S2WS31	A56	1.044	2051.00	965.00	970.11	969.52	970.80	0.008173	6.99	388.16	367.72	0.61
1S2WS31	A56	1.139	2051.00	967.21	973.20		973.58	0.003889	5.34	571.29	501.52	0.43
1S2WS31	A56	1.234	2051.00	969.47	975.28	973.56	975.80	0.004909	6.08	434.24	339.35	0.49
1S2WS31	A56	1.331	2051.00	971.54	977.67	975.59	978.15	0.004293	5.76	454.20	376.42	0.46
1S2WS31	A56	1.423	2051.00	973.70	979.68		980.09	0.003676	5.25	450.86	226.04	0.42
1S2WS31	A56	1.518	2051.00	976.12	982.18		982.67	0.007662	5.81	404.40	258.77	0.57
1S2WS31	A56	1.613	2051.00	978.00	984.56		984.97	0.003020	5.16	422.99	142.67	0.39
1S2WS31	A56	1.702	2051.00	980.72	986.20		986.57	0.003839	4.87	431.70	159.56	0.42
1S2WS31	A56	1.809	2051.00	983.28	988.95		989.93	0.008897	7.94	264.06	77.46	0.65
1S2WS31	A56	1.904	2051.00	985.48	992.55		993.12	0.004689	6.59	407.71	163.02	0.47
1S2WS31	A56	1.991	2051.00	987.47	994.60		995.21	0.004332	6.44	350.71	91.65	0.46
1S2WS31	A56	2.085	2051.00	989.95	996.62		997.08	0.003253	5.52	422.60	213.19	0.41
1S2WS31	A56	2.123	2051.00	990.42	997.38		997.68	0.002696	4.81	567.79	244.97	0.36
1S2WS31	A56	2.142	1217.00	991.21	997.78		997.85	0.000742	2.52	630.99	258.35	0.19
1S2WS31	A56	2.280	1217.00	994.50	998.71		999.45	0.012286	6.92	175.91	60.28	0.71
1S2WS31	A56	2.390	1217.00	998.28	1002.08		1002.25	0.002476	3.31	367.89	119.37	0.33
1S2WS31	A56	2.512	1217.00	1000.64	1004.53		1005.02	0.008416	5.65	216.03	90.43	0.59
1S2WS31	A56	2.619	1217.00	1003.71	1007.77		1007.92	0.003414	3.40	397.94	188.11	0.37
2S2WS7A	A52	0.019	845.00	991.70	994.58	993.44	994.82	0.004901	3.71	214.10	85.38	0.43
2S2WS7A	A52	0.059	845.00	993.00	996.45	996.45	997.60	0.026225	8.62	97.99	42.49	1.00
2S2WS7A	A52	0.152	845.00	995.65	1000.12		1000.23	0.002125	2.93	372.23	306.18	0.30
2S2WS7A	A52	0.254	845.00	998.27	1001.94		1002.44	0.009058	5.67	150.29	60.43	0.61
2S2WS7A	A52	0.340	845.00	1000.40	1005.30		1005.71	0.005828	5.14	165.41	56.18	0.50
2S2WS7A	A52	0.443	845.00	1004.20	1007.91		1008.09	0.003392	3.48	254.10	137.88	0.37
2S2WS7A	A52	0.562	845.00	1008.73	1011.69	1011.43	1012.09	0.015039	5.96	194.79	301.01	0.74
2S2WS7A	A52	0.624	845.00	1011.03	1014.51		1014.63	0.004666	3.07	316.46	364.27	0.41
2S2WS7A	A52	0.719	845.00	1013.40	1017.17		1017.41	0.006551	4.95	256.31	217.16	0.52
2S2WS7A	A52	0.817	845.00	1017.38	1020.85		1021.13	0.007936	4.48	206.75	169.10	0.55
2S2WS7A	A52	0.910	845.00	1020.50	1024.11		1024.28	0.005220	4.20	312.51	315.19	0.46

HEC-RAS Plan: 1S2WS31 Profile: 100-Year (Continued)

River	Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
2S2WS7A	A52	1.009	845.00	1023.71	1027.45		1027.62	0.007978	4.59	292.92	319.66	0.55
2S2WS7A	A52	1.108	845.00	1025.90	1031.36	1031.23	1031.61	0.007168	5.36	296.75	375.48	0.53
2S2WS7A	A52	1.196	845.00	1028.40	1033.87		1034.00	0.003871	3.77	353.31	354.32	0.39
2S2WS7A	A52	1.287	845.00	1032.95	1036.56		1036.80	0.009454	4.95	237.62	233.05	0.59
2S2WS7A	A52	1.382	845.00	1036.30	1039.76		1039.93	0.004454	3.08	256.61	162.78	0.39
2S2WS7A	A52	1.483	845.00	1040.25	1043.33		1043.52	0.011332	3.59	243.00	230.24	0.59
2S2WS7A	A52	1.587	845.00	1044.38	1048.08	1047.59	1048.17	0.006551	3.93	413.56	597.21	0.48
2S2WS7A	A52	1.681	845.00	1047.78	1051.75		1052.04	0.009045	5.66	236.43	204.83	0.61
2S2WS7A	A52	1.764	845.00	1050.90	1054.86	1054.46	1055.00	0.005178	4.14	344.05	434.10	0.45
2S2WS7A	A52	1.855	845.00	1053.52	1058.02		1058.27	0.009085	5.16	268.60	326.81	0.59
2S2WS7A	A52	1.950	845.00	1056.68	1061.71		1062.05	0.006311	5.85	231.34	167.28	0.53
2S2WS7A	A52	2.062	845.00	1062.93	1066.16	1065.78	1066.39	0.008520	4.74	242.27	215.40	0.57
2S2WS7A	A52	2.139	845.00	1065.97	1069.04		1069.12	0.005448	3.23	404.93	495.06	0.44
2S2WS7A	A52	2.234	845.00	1070.76	1072.80		1072.96	0.011462	3.64	276.60	338.28	0.60
2S2WS7A	A52	2.354	845.00	1075.60	1078.14		1078.22	0.006392	3.01	403.91	589.17	0.46
2S2WS7A	A52	2.421	845.00	1078.00	1081.27	1081.26	1081.56	0.015032	5.94	260.66	425.77	0.74
2S2WS7B	A51	0.006	405.00	1011.60	1012.60	1012.04	1012.69	0.005709	1.46	193.19	400.51	0.37
2S2WS7B	A51	0.099	405.00	1013.10	1015.27		1015.31	0.005080	2.31	264.92	488.84	0.39
2S2WS7B	A51	0.184	405.00	1016.43	1017.66		1017.71	0.005615	2.21	227.71	458.71	0.40
2S2WS7B	A51	0.298	405.00	1018.93	1020.87		1020.90	0.005016	2.04	294.95	606.78	0.38
2S2WS7B	A51	0.409	405.00	1021.18	1024.64	1024.40	1024.77	0.008929	4.07	173.23	336.70	0.54
2S2WS7B	A51	0.484	405.00	1023.80	1027.49	1027.21	1027.55	0.005511	2.54	256.25	535.90	0.41
2S2WS7B	A51	0.580	405.00	1028.30	1030.35	1030.03	1030.39	0.005742	2.46	263.04	574.37	0.41
2S2WS7B	A51	0.667	405.00	1031.53	1033.32		1033.37	0.007522	2.97	232.78	443.68	0.48
2S2WS7B	A51	0.761	405.00	1034.28	1036.87	1036.60	1036.92	0.006703	2.55	244.18	499.86	0.44
2S2WS7B	A51	0.856	405.00	1037.37	1039.95		1040.01	0.005666	2.49	228.51	393.16	0.42
2S2WS7B	A51	0.958	405.00	1043.20	1044.09	1043.91	1044.16	0.011266	2.24	188.31	340.50	0.53
2S2WS7B	A51	1.061	405.00	1046.65	1047.92		1047.97	0.004770	1.26	235.90	333.59	0.33
2S2WS7B	A51	1.151	405.00	1050.10	1051.11	1050.91	1051.22	0.010723	2.17	158.97	263.08	0.51
2S2WS7B	A51	1.235	405.00	1053.20	1054.86	1054.63	1054.92	0.006628	2.70	231.78	431.85	0.45
2S2WS7B	A51	1.333	405.00	1055.87	1058.25	1057.83	1058.32	0.006514	2.44	190.42	293.93	0.43
2S2WS7B	A51	1.424	405.00	1060.19	1061.99	1061.69	1062.07	0.009326	2.51	184.92	335.03	0.50
2S2WS7B	A51	1.524	405.00	1062.70	1065.93	1065.50	1066.08	0.006194	4.03	158.89	264.69	0.48
2S2WS7B	A51	1.614	405.00	1067.78	1069.77	1069.61	1069.91	0.011152	3.58	144.08	304.18	0.58
2S2WS7B	A51	1.704	405.00	1071.42	1072.96		1073.04	0.004486	2.06	176.41	154.94	0.36
2S2WS7B	A51	1.804	405.00	1074.55	1076.87		1077.07	0.015312	4.60	123.00	163.56	0.70
2S2WS7B	A51	1.894	405.00	1078.26	1080.92		1081.00	0.005139	2.78	182.27	234.32	0.41

```
                    HEC-RAS Version 4.1.0 Jan 2010
                     U.S. Army Corps of Engineers
                    Hydrologic Engineering Center
                          609 Second Street
                          Davis, California

                                          .
          X     X  XXXXXX    XXXX        XXXX       XX      XXXX
          X     X  X        X    X       X   X     X  X    X
          X     X  X        X            X   X    X    X   X
          XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
          X     X  X        X            X  X     X    X        X
          X     X  X        X    X       X   X    X    X        X
          X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

****

PROJECT DATA
Project Title: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51)
Project File : 1S2WS31.prj
Run Date and Time: 9/18/2012 8:05:59 AM

Project in English units

Project Description:
Rainbow Valley ADMP Areas 1, 2, 3, and 4 Floodplain Delineation Study

1S2WS31.prj
Plan01: 1S2WS31

Contract FCD 2011C003 Assignment 3
This
model is not for public release until final approval provided by
FEMA

Consultant: RBF Consulting
2929 North Central Avenue #800
Phoenix, AZ
85012
RBF Job number: 45104771

This is a re-delineation of 1S2WS31
(A56), 2S2WS7A (A52), 2S2WS7B (A51) within the Rainbow Valley Study Area 1
using updated methods and data, including hydrology from Rainbow Valley Area
Drainage Master Plan (ADMP) dated Octover 2010 by URS in cooperation with
Dibble Engineering and JE Fuller Hydrology and Geomorphology, Inc.

Model
Geometry based upon 2' contour interval mapping

Vertical Datum in
NAVD88

Aerial mapping provided by the Flood Control District of Maricopa
County for Rainbow Valley Mapping, Contract No. FCD 03-67, Flight Date March
30, 2005.

HEC-RAS Version 4.1.0
1S2WS31 (A56), 2S2WS7A (A52), and 2S2WS7B
(A51) are tributary to Waterman Wash

Last Run Date September 18,
2012

River 100-Yr Discharge
Rate HEC-1 Concentration Point ID
1S2WS31 (A56) US of A52
Confluence 1217 cfs CPA30
1S2WS31
(A56) DS of A52 Confluence 2051 cfs
CPA55
2S2WS7A (A52) 845 cfs
CPA32A
2S2WS7B (A51)
405 cfs
A51A

Downstream boundary condition applied is normal depth due to
non-coincident peaks with Waterman Wash (386.5 SM). Drainage area of A56 at
Waterman Wash confluence is 18.5 SM.

****

PLAN DATA

Plan Title: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51)
Plan File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31.p01

Geometry Title: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51)
Geometry File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31.g01

Flow Title : 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51)
Flow File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31.f01

Plan Summary Information:
Number of: Cross Sections = 75 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information

```
    Water surface calculation tolerance  =  0.01
    Critical depth calculation tolerance =  0.01
    Maximum number of iterations         =  20
    Maximum difference tolerance         =  0.3
    Flow tolerance factor                =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow


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

FLOW DATA

Flow Title: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51)
Flow File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31.f01

Flow Data (cfs)
***************************************************************
* River           Reach           RS      *        100-Year *
* 1S2WS31         A56             2.619   *            1217 *
* 1S2WS31         A56             2.123   *            2051 *
* 2S2WS7A         A52             2.421   *             845 *
* 2S2WS7B         A51             1.894   *             405 *
***************************************************************

Boundary Conditions
*****************************************************************************************************************
* River           Reach           Profile         *           Upstream                Downstream    *
*****************************************************************************************************************
* 1S2WS31         A56             100-Year        *                                 Normal S = 0.0036 *
* 2S2WS7A         A52             100-Year        *                                 Normal S = 0.0049 *
* 2S2WS7B         A51             100-Year        *                                 Normal S = 0.0057 *
*****************************************************************************************************************

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

GEOMETRY DATA

Geometry Title: 1S2WS31(A56) 2S2WS7A(A52) 2S2WS7B(A51)
Geometry File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31.g01

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 2.619

INPUT
Description:
Station Elevation Data    num=      82
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9851.62 1011.59 9851.79 1011.61 9851.98 1011.52 9852.19 1011.25 9852.42 1011.02
 9852.68 1010.83 9852.97 1010.29  9853.3 1009.91 9853.67 1009.46  9854.1 1008.74
  9854.6 1007.96 9855.18  1007.3 9855.59 1006.91 9858.57 1006.66 9859.93 1006.58
 9866.13  1006.4 9870.91 1006.47  9879.8 1006.03 9881.23 1005.94 9881.89 1005.94
 9888.79 1006.19 9892.87 1006.29 9903.71 1006.47 9903.85 1006.47 9904.01 1006.47
 9911.45 1006.32 9918.78 1006.44 9928.29 1006.55  9931.6 1004.79 9932.62 1004.41
 9933.65 1004.39 9943.03  1004.3 9949.76 1006.75  9953.6  1008.2 9957.89 1007.68
 9969.73 1006.82 9980.66 1006.74  9984.6 1006.68 9986.71 1006.11 9988.31 1005.62
 9993.04 1004.14 9999.16 1004.0210009.66 1003.8510013.65  1003.810024.26 1003.88
10024.63 1003.8810024.83 1003.8810036.91 1003.71 10047.1  1007.610053.54  1010.1
10054.52  1010.110059.97 1010.2410068.55 1010.5610069.66 1010.4710070.09 1010.44
 10073.5  1010.310077.65  1010.110079.53  1010.1 10085.2 1010.1110090.51  1010.2
10097.71 1010.0810100.31    101010101.49 1010.0110107.87 1010.0110112.47 1010.01
10121.93  1009.810122.98 1009.7710123.45 1009.7410130.53 1009.1910136.76 1008.99
10144.34    100910151.13 1008.8910156.39 1009.1210160.75 1009.4210167.37 1009.93
 10168.3 1009.9910170.35 1010.0210175.86    101010178.35 1010.0210183.41 1010.19
10189.33 1010.1910190.64 1010.21

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9851.62      .05 9855.59    .048 9949.76     .05 9957.89    .048 10047.1     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9957.89 10047.1            557.8  562.48   562.9             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)         * 1007.92  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.15  * Wt. n-Val.              *   0.048  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1007.77  * Reach Len. (ft)         *  557.80  *  562.48  *  562.90  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *  164.92  *  232.98  *    0.04  *
* E.G. Slope (ft/ft)     *0.003414  * Area (sq ft)            *  164.92  *  232.98  *    0.04  *
* Q Total (cfs)          * 1217.00  * Flow (cfs)              *  424.45  *  792.53  *    0.01  *
* Top Width (ft)         *  188.11  * Top Width (ft)          *   98.45  *   89.21  *    0.44  *
* Vel Total (ft/s)       *    3.06  * Avg. Vel. (ft/s)        *    2.57  *    3.40  *    0.32  *
* Max Chl Dpth (ft)      *    4.06  * Hydr. Depth (ft)        *    1.68  *    2.61  *    0.09  *
* Conv. Total (cfs)      * 20827.8  * Conv. (cfs)             *  7264.1  * 13563.5  *     0.2  *
* Length Wtd. (ft)       *  561.66  * Wetted Per. (ft)        *  100.00  *   90.34  *    0.47  *
* Min Ch El (ft)         * 1003.71  * Shear (lb/sq ft)        *    0.35  *    0.55  *    0.02  *
* Alpha                  *    1.05  * Stream Power (lb/ft s)  *10190.64  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.86  * Cum Volume (acre-ft)    *   24.85  *  101.13  *   16.35  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)          *   44.40  *   26.07  *   30.62  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
```

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 2.512

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9858.23	1007.05	9860.48	1007.02	9872.27	1006.82	9872.57	1006.81	9872.63	1006.81
9872.71	1006.81	9884.66	1006.35	9887.03	1006.29	9890.51	1006.5	9894.23	1006.62
9896.75	1006.47	9901.42	1005.91	9908.31	1006.22	9908.84	1006.25	9915.82	1006.51
9920.92	1006.15	9923.02	1006.06	9926.11	1005.73	9933.01	1005.25	9943.91	1005.13
9944.62	1005.13	9945.24	1005.14	9951.71	1005.29	9954.28	1005.35	9961.78	1005.48
9965.18	1004.58	9977.65	1001.4	9978.58	1001.4	9987.81	1001.17	9993.45	1000.82
9997.3	1000.72	10000	1000.67	10002.21	1000.64	10005.54	1000.73	10015.1	1001.27
10016.61	1001.33	10017.65	1001.36	10026.87	1001.11	10031.54	1002.18	10041.16	1004.53
10041.32	1004.57	10050.7	1004.4	10053.9	1004.48	10059.8	1004.68	10065.98	1004.48
10067	1004.5	10068.5	1004.58	10074.2	1004.87	10078.07	1004.99	10081.4	1005.07
10086.3	1005.18	10088.6	1005.24	10090.16	1005.35	10095.8	1005.56	10102.25	1005.62
10104.1	1005.67	10114.34	1006.01	10121.89	1006.13	10124.59	1006.08	10126.43	1006.13
10131.79	1006.31	10138.51	1006.32	10138.99	1006.32	10139.69	1006.33	10150.6	1006.54
10153.39	1006.58	10157.49	1006.61	10160.59	1006.64	10162.69	1006.74	10173.7	1006.97
10174.78	1007	10175.29	1007.01	10182.18	1007.18	10186.87	1007.31	10189.38	1007.35
10193.09	1007.36	10196.58	1007.37	10198.96	1007.42	10203.78	1007.61	10210.89	1007.83
10210.98	1007.83	10211.04	1007.83	10218.18	1007.91	10223.13	1008.01	10225.38	1008.08
10228.69	1008.11	10232.58	1008.13	10235.22	1008.16	10246.49	1008.12	10246.98	1008.12
10247.31	1008.12	10254.17	1008.1	10259.4	1008.07	10261.37	1008.09	10264.28	1008.11
10268.57	1008.16	10271.49	1008.11	10275.77	1008.16	10282.08	1008.2	10282.12	1008.2

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9858.23	.05	9965.18	.048	10041.32	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9965.18	10041.32		636.15	642.76	647.38	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	1005.02	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.		0.048	0.050
W.S. Elev (ft)	1004.53	Reach Len. (ft)	636.15	642.76	647.38
Crit W.S. (ft)		Flow Area (sq ft)		215.18	0.84
E.G. Slope (ft/ft)	0.008416	Area (sq ft)		215.18	0.84
Q Total (cfs)	1217.00	Flow (cfs)		1216.64	0.36
Top Width (ft)	90.43	Top Width (ft)		75.77	14.67
Vel Total (ft/s)	5.63	Avg. Vel. (ft/s)		5.65	0.42
Max Chl Dpth (ft)	3.89	Hydr. Depth (ft)		2.84	0.06
Conv. Total (cfs)	13265.7	Conv. (cfs)		13261.8	3.9
Length Wtd. (ft)	642.76	Wetted Per. (ft)		76.60	14.67
Min Ch El (ft)	1000.64	Shear (lb/sq ft)		1.48	0.03
Alpha	1.01	Stream Power (lb/ft s)	10282.12	0.00	0.00
Frctn Loss (ft)	2.68	Cum Volume (acre-ft)	23.80	98.24	16.34
C & E Loss (ft)	0.10	Cum SA (acres)	43.77	25.00	30.52

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 2.390

INPUT
Description:
Station Elevation Data num= 99

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9704.62	1004.6	9713.96	1004.74	9715.21	1004.76	9716.29	1004.73	9729.32	1004.84
9729.4	1004.84	9729.46	1004.84	9736.49	1004.67	9742.64	1004.73	9743.58	1004.73
9744.67	1004.71	9755.82	1004.57	9757.76	1004.57	9760.03	1004.59	9764.85	1004.63
9768.99	1004.61	9771.95	1004.63	9775.39	1004.61	9779.04	1004.63	9782.17	1004.57
9786.13	1004.5	9790.74	1004.38	9795.35	1004.27	9806.1	1003.85	9808.52	1003.72
9825.27	1004.17	9825.88	1004.18	9826.35	1004.18	9842.86	1003.83	9848.06	1003.9
9849.95	1003.97	9852.17	1004	9857.05	1004.27	9861.23	1004.18	9864.14	1004.13
9867.52	1004.3	9871.23	1004.49	9874.41	1004.38	9878.32	1004.23	9882.88	1004.15
9885.41	1004.09	9887.59	1003.99	9898.23	1003.09	9900.76	1002.79	9906.69	1002.15
9913.59	1002.26	9913.78	1002.26	9913.94	1002.25	9920.87	1002.32	9928.91	1002.49
9934.78	1002.24	9938.15	1001.54	9942.96	1000.54	9951.87	998.7	9959	998.56
9963.9	998.51	9975.19	998.37	9979.83	998.28	9984.7	998.32	9990.37	998.29
9991.79	998.28	9993	998.3	10000	998.35	10007.46	998.41	10011.16	998.4
10014.88	998.38	10024.06	998.66	10027.24	998.76	10036.74	999.07	10042.5	999.18
10053.83	1001.83	10056.91	1002.55	10061.06	1003.59	10064.85	1003.44	10076.89	1003.15
10082.51	1003.03	10083.98	1003.05	10085.24	1003.07	10091.07	1003.19	10097.86	1003.67
10098.42	1003.68	10101.8	1003.61	10111.6	1003.33	10112.35	1003.35	10113.22	1003.37
10119.44	1003.41	10124.77	1003.44	10126.53	1003.42	10128.57	1003.49	10133.62	1003.67
10137.95	1003.78	10140.71	1003.92	10143.93	1003.98	10147.8	1004.07	10151.13	1004.08
10154.9	1004.05	10159.29	1003.96	10161.99	1003.96	10162.41	1003.96		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9704.62	.05	9938.15	.048	10053.83	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9938.15	10053.83		574.11	582.64	588.46	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	1002.25	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.17	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	1002.08	Reach Len. (ft)	574.11	582.64	588.46
Crit W.S. (ft)		Flow Area (sq ft)	0.71	367.04	0.14
E.G. Slope (ft/ft)	0.002476	Area (sq ft)	0.71	367.04	0.14
Q Total (cfs)	1217.00	Flow (cfs)	0.43	1216.52	0.05
Top Width (ft)	119.37	Top Width (ft)	2.61	115.68	1.08
Vel Total (ft/s)	3.31	Avg. Vel. (ft/s)	0.61	3.31	0.37
Max Chl Dpth (ft)	3.80	Hydr. Depth (ft)	0.27	3.17	0.13
Conv. Total (cfs)	24457.7	Conv. (cfs)	8.7	24448.0	1.0
Length Wtd. (ft)	582.64	Wetted Per. (ft)	2.67	116.29	1.11
Min Ch El (ft)	998.28	Shear (lb/sq ft)	0.04	0.49	0.02
Alpha	1.00	Stream Power (lb/ft s)	10162.41	0.00	0.00
Frctn Loss (ft)	2.75	Cum Volume (acre-ft)	23.79	93.94	16.34
C & E Loss (ft)	0.06	Cum SA (acres)	43.75	23.59	30.41

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 2.280

INPUT
Description:
Station Elevation Data num= 124

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9669.96	1002.89	9676	1002.91	9676.31	1002.91	9687.14	1002.86	9691.05	1002.86
9698.28	1002.99	9699.03	1003	9706	1002.91	9709.42	1002.9	9719.42	1002.84
9720.55	1002.84	9720.94	1002.84	9721.74	1002.84	9728.42	1002.88	9731.69	1003.01
9735.89	1003.01	9742.83	1002.8	9743.36	1002.8	9744.45	1002.81	9750.84	1002.89
9753.97	1002.95	9758.31	1002.93	9765.1	1002.96	9765.78	1002.97	9767.16	1003.01
9773.25	1003.17	9776.24	1003.17	9780.73	1003.23	9787.38	1003.33	9788.2	1003.33
9789.87	1003.29	9798.52	1003.13	9803.15	1003.11	9809.66	1003.06	9810.62	1003.07
9812.59	1003.09	9820.79	1003.1	9828.69	1002.88	9831.93	1002.79	9833.04	1002.81
9835.3	1002.7	9840.51	1002.5	9843.07	1002.35	9847.98	1001.99	9854.21	1001.76
9858.01	1001.71	9865.34	1001.95	9870.4	1002.26	9876.48	1002.55	9877.88	1002.62
9880.72	1002.74	9885.35	1002.92	9887.62	1002.92	9892.82	1002.77	9898.76	1002.7
9900.3	1002.68	9903.43	1002.34	9907.77	1001.85	9909.89	1001.65	9915.24	1001.19
9921.03	1000.53	9934.19	1000.08	9935.82	999.99	9936.62	999.98	9940.05	999.98
9952.61	999.83	9954.45	999.86	9967.5	999.78	9968.03	999.78	9969.66	999.79
9977.31	997.62	9984.22	995.59	9985.42	995.56	9990.3	995.43	9999	995.25
10000	995.22	10003.53	995.14	10010.13	994.97	10013.11	994.94	10021.53	994.5
10027.95	996.72	10033.48	998.62	10035.43	999.29	10042.84	1000.33	10048.66	1001.21
10054.53	1001.77	10062.78	1002.25	10065.82	1002.37	10072.18	1002.2	10076.96	1002.24
10079.65	1002.24	10085.13	1002.2	10088.1	1002.18	10094.59	1002.07	10099.23	1002.06
10102.07	1002.02	10107.84	1002.18	10110.37	1002.23	10112.81	1002.15	10121.51	1002.09
10124.49	1002.02	10130.56	1001.77	10131.96	1001.75	10132.65	1001.75	10139.43	1001.66
10143.79	1001.63	10153.27	1001.34	10154.38	1001.31	10154.92	1001.27	10161.85	1001.11
10166.06	1001.15	10169.32	1001.12	10175.98	1001	10176.8	1000.98	10177.2	1000.97
10184.27	1000.75	10188.34	1000.69	10191.74	1000.55	10198.69	1000.59	10199.22	1000.59
10199.47	1000.61	10206.69	1000.91	10210.61	1000.79	10213.77	1000.74		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9669.96	.05	9969.66	.04	10035.43	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9969.66 10035.43 724.11 730.73 735.01 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	999.45	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.74	Wt. n-Val.		0.048	
W.S. Elev (ft)	998.71	Reach Len. (ft)	724.11	730.73	735.01
Crit W.S. (ft)		Flow Area (sq ft)		175.91	
E.G. Slope (ft/ft)	0.012286	Area (sq ft)		175.91	
Q Total (cfs)	1217.00	Flow (cfs)		1217.00	
Top Width (ft)	60.28	Top Width (ft)		60.28	
Vel Total (ft/s)	6.92	Avg. Vel. (ft/s)		6.92	
Max Chl Dpth (ft)	4.21	Hydr. Depth (ft)		2.92	
Conv. Total (cfs)	10979.7	Conv. (cfs)		10979.7	
Length Wtd. (ft)	731.40	Wetted Per. (ft)		61.44	
Min Ch El (ft)	994.50	Shear (lb/sq ft)		2.20	
Alpha	1.00	Stream Power (lb/ft s)	10213.77	0.00	0.00
Frctn Loss (ft)	1.40	Cum Volume (acre-ft)	23.79	90.31	16.34
C & E Loss (ft)	0.20	Cum SA (acres)	43.74	22.42	30.40

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 2.142

INPUT
Description:
Station Elevation Data num= 111

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
 9461.64  999.63 9473.87  999.66 9490.29  999.79 9503.77  999.78 9514.91  999.79
  9521.6   999.6 9543.04  999.79 9545.47  999.77 9583.28  999.13 9585.33  999.13
 9586.98  999.11 9600.22  999.52 9624.16  999.13 9649.68  997.82  9655.2   997.8
 9684.33      998 9693.84  998.32  9698.3  998.37 9712.28  998.63 9740.35   998.9
 9747.24  998.97 9750.16  999.08    9760  999.05 9776.21  998.31 9787.35  998.06
 9799.27  997.62 9807.06  997.43 9808.19  997.42 9813.04  997.02 9813.36     997
 9821.91  997.36 9826.34  997.64 9846.31  997.93  9853.7  998.03 9860.88  998.87
 9863.72   998.9 9879.39  998.48 9882.83  998.35 9908.61  997.18 9912.06  996.94
 9917.51  996.56 9950.69  996.79 9950.95  996.79 9951.27   996.8 9951.56  996.81
 9952.13  996.78 9952.76  996.83 9964.91  997.16 9972.38  997.36 9973.69 996.617
 9977.23  994.61 9979.91  993.25 9983.95  991.21 9988.74  991.27   10000  991.61
10005.16  991.7710008.21  991.8510010.85  991.8510019.64  991.8310022.72  994.33
10025.09  996.4110026.91  996.41 10030.4  996.4110045.48  997.0310046.89 996.277
10052.52  993.2710054.72  992.1610061.11   992.1 10074.1  991.9610085.69   991.7
10092.18  996.3410093.93   997.410095.45  997.2410102.34  996.5110108.35  997.19
10113.06  997.8110122.01  998.2710125.56  998.4510134.14  999.4210135.84  999.57
10139.18  999.5110157.42  998.9810185.05  998.8210187.15   998.810207.37  998.78
10213.13  998.7410222.17  998.7610232.68   998.710237.29  998.6510256.51  998.49
10268.64  998.3710273.75  998.3610281.69   998.4 10295.8  998.5710306.03  998.42
10308.21  998.4310310.08  998.4510331.44  998.8110340.87   998.910345.22  998.88
 10349.6  998.9110355.12  998.9210359.36  998.8710363.39  998.9710366.43     999
10369.64  999.0110373.51  998.9510377.19     99910380.58  998.9610384.16  998.99
10386.02     999

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9461.64     .05 9973.69    .04810025.09     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.6910025.09            99.21   99.35   99.49             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  997.85  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.07  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  997.78  * Reach Len. (ft)         *   99.21  *   99.35  *   99.49  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   77.83  *  280.75  *  272.42  *
* E.G. Slope (ft/ft)      *0.000742  * Area (sq ft)            *   77.83  *  280.75  *  272.42  *
* Q Total (cfs)           * 1217.00  * Flow (cfs)              *   51.27  *  707.07  *  458.66  *
* Top Width (ft)          *  258.35  * Top Width (ft)          *  119.21  *   51.40  *   87.73  *
* Vel Total (ft/s)        *    1.93  * Avg. Vel. (ft/s)        *    0.66  *    2.52  *    1.68  *
* Max Chl Dpth (ft)       *    6.57  * Hydr. Depth (ft)        *    0.65  *    5.46  *    3.11  *
* Conv. Total (cfs)       * 44663.4  * Conv. (cfs)             *  1881.5  * 25949.1  * 16832.8  *
* Length Wtd. (ft)        *   99.37  * Wetted Per. (ft)        *  119.49  *   54.42  *   90.86  *
* Min Ch El (ft)          *  991.21  * Shear (lb/sq ft)        *    0.03  *    0.24  *    0.14  *
* Alpha                   *    1.28  * Stream Power (lb/ft s) *10386.02  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.15  * Cum Volume (acre-ft)    *   23.14  *   86.48  *   14.04  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *   42.75  *   21.48  *   29.66  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                  RS: 2.123

INPUT
Description:
Station Elevation Data      num=      91
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*****************************************************************************************
 9464.56  999.33 9468.28  999.36 9470.48  999.36 9484.56  999.02 9489.23  998.91
 9489.95   998.9 9522.08  998.53 9540.25  998.48 9541.95  998.47 9542.86  998.47
 9562.88  998.46    9589  998.27 9596.12  998.27 9609.82  998.26  9617.4  997.86
  9634.3   997.5 9635.94  997.52 9638.47  997.59 9650.85  997.73 9669.23  998.06
 9678.33  998.19 9681.52  998.46 9692.34  999.06 9694.21  999.09 9704.17  998.77
 9722.75  998.66 9732.79  998.66 9736.66  998.74 9751.85  998.84 9763.84  998.85
 9773.97   998.8 9781.73  998.68 9790.94  998.43 9803.73  998.18  9811.8  998.21
 9836.95   998.1  9839.4  998.06 9841.63  997.91 9856.98  996.58 9861.94   996.5
 9861.97   996.5    9862  996.49 9872.02  995.61 9878.58  995.12 9883.63  995.45
 9896.47   996.2 9902.07  995.98 9905.24  996.11 9912.82  996.33 9917.81  996.46
 9942.86  996.64  9944.5  996.58 9946.66  996.67 9957.09  996.79 9963.13  997.04
 9963.55  997.04 9966.27   997.1 9968.56  995.34 9973.57  991.72 9973.88   991.5
 9973.98   991.5 9977.08  991.56 9983.52  991.44 9996.23  991.32   10000   991.2
10009.73  990.8810014.46  990.610017.72  990.4210021.85  992.5910028.78  996.25
10032.35  995.9410038.15  995.4310042.36  994.5310056.69  995.2810067.25   995.6
 10076.1  996.16 10089.2  997.2910119.11   998.110119.61  998.1110120.17  998.12
10147.15  998.8910151.84  998.6810165.68   998.810180.42  998.7210194.35  998.37
10206.85  998.3810217.51   998.4 10245.4  998.1310248.82  998.1510256.11  998.16
10264.81   998.2

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9464.56     .05 9966.27    .04810028.78     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9966.2710028.78           198.35  198.86  200.55             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  997.68  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.30  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  997.38  * Reach Len. (ft)         *  198.35  *  198.86  *  200.55  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  124.89  *  340.17  *  102.73  *
* E.G. Slope (ft/ft)      *0.002696  * Area (sq ft)            *  124.89  *  340.17  *  102.73  *
* Q Total (cfs)           * 2051.00  * Flow (cfs)              *  199.35  * 1634.58  *  217.07  *
* Top Width (ft)          *  244.97  * Top Width (ft)          *  118.57  *   62.51  *   63.89  *
* Vel Total (ft/s)        *    3.61  * Avg. Vel. (ft/s)        *    1.60  *    4.81  *    2.11  *
* Max Chl Dpth (ft)       *    6.96  * Hydr. Depth (ft)        *    1.05  *    5.44  *    1.61  *
* Conv. Total (cfs)       * 39499.2  * Conv. (cfs)             *  3839.1  * 31479.5  *  4180.5  *
* Length Wtd. (ft)        *  198.92  * Wetted Per. (ft)        *  118.72  *   65.82  *   64.11  *
* Min Ch El (ft)          *  990.42  * Shear (lb/sq ft)        *    0.18  *    0.87  *    0.27  *
```

```
* Alpha                  *    1.47  * Stream Power (lb/ft s) *10264.81  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    0.59  * Cum Volume (acre-ft)   *   22.91  *   85.77  *   13.61  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *   42.48  *   21.35  *   29.49  *
*****************************************************************************************

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 2.085

INPUT
Description:
Station Elevation Data    num=      48
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
    9800  997.06 9803.16  996.98 9816.72  996.57 9822.54  996.61 9849.39  996.24
 9856.38  996.24 9858.24  996.32 9886.93  996.22 9898.56  996.25 9914.56  996.99
 9922.37  996.91 9926.29  996.56 9937.95  995.86 9952.17  995.39 9959.08  995.41
 9961.74  995.53 9962.98  995.04 9964.96  994.24 9974.72  989.95 9982.67  990.08
 9988.64  990.17   10000  990.24 10001.7  990.2510014.76  990.2310018.29  990.38
10025.47  994.6510028.08  996.0410028.27  996.0510040.98  996.5710045.93  996.54
10049.55  996.7410058.88  996.9510067.88   997.110078.18  997.1810085.89  997.22
10105.02  997.1910113.57  997.1410126.14  997.3710132.08  997.4210159.05   997.5
10165.47  997.5210191.71  997.5210194.38  997.4810200.26   997.510205.11   997.5
10222.11  997.73 10230.7  997.9810239.02  998.18

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***************************************************
    9800     .05 9962.98    .04810025.47     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9962.9810025.47            494.85  494.88  494.92             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         *  997.08  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.46  * Wt. n-Val.             *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         *  996.62  * Reach Len. (ft)        *  494.85  *  494.88  *  494.92  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *   56.74  *  358.12  *    7.74  *
* E.G. Slope (ft/ft)     *0.003253  * Area (sq ft)           *   56.74  *  358.12  *    7.74  *
* Q Total (cfs)          * 2051.00  * Flow (cfs)             *   66.44  * 1978.07  *    6.49  *
* Top Width (ft)         *  213.19  * Top Width (ft)         *  128.81  *   62.49  *   21.89  *
* Vel Total (ft/s)       *    4.85  * Avg. Vel. (ft/s)       *    1.17  *    5.52  *    0.84  *
* Max Chl Dpth (ft)      *    6.67  * Hydr. Depth (ft)       *    0.44  *    5.73  *    0.35  *
* Conv. Total (cfs)      * 35959.8  * Conv. (cfs)            *  1165.0  * 34681.0  *   113.8  *
* Length Wtd. (ft)       *  494.88  * Wetted Per. (ft)       *  128.95  *   64.73  *   22.25  *
* Min Ch El (ft)         *  989.95  * Shear (lb/sq ft)       *    0.09  *    1.12  *    0.07  *
* Alpha                  *    1.25  * Stream Power (lb/ft s) *10239.02  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    1.85  * Cum Volume (acre-ft)   *   22.49  *   84.18  *   13.36  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *   41.91  *   21.06  *   29.29  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 1.991

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9884.97  995.01    9887  995.04 9900.17   995.2 9900.24   995.2 9919.56  995.56
 9947.78  993.11 9949.35  993.03 9952.25  993.04 9967.51  993.17 9971.25   993.2
 9977.24  989.37 9979.83  987.93 9987.06  987.85 9992.21   987.810000.62  987.67
10008.61  987.5210009.66   987.510014.82  987.4710018.99  991.4510021.19 993.537
10023.47   995.710029.67  995.4410037.52  995.1110040.09  994.9610045.97  995.21
10055.63  995.5610065.74  995.6410086.47  995.3610094.55  995.2610097.03  995.27
10103.43  995.34 10110.3   995.410111.71  995.4110114.01  995.4710126.29  995.71
10146.25  995.9110152.76      996

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***************************************************
 9884.97     .05 9971.25    .04810021.19     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9971.2510021.19            463.41  460.21  458.75             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         *  995.21  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.61  * Wt. n-Val.             *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         *  994.60  * Reach Len. (ft)        *  463.41  *  460.21  *  458.75  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *   47.69  *  302.43  *    0.59  *
* E.G. Slope (ft/ft)     *0.004332  * Area (sq ft)           *   47.69  *  302.43  *    0.59  *
* Q Total (cfs)          * 2051.00  * Flow (cfs)             *  103.75  * 1946.64  *    0.61  *
* Top Width (ft)         *   91.65  * Top Width (ft)         *   40.59  *   49.94  *    1.12  *
* Vel Total (ft/s)       *    5.85  * Avg. Vel. (ft/s)       *    2.18  *    6.44  *    1.03  *
* Max Chl Dpth (ft)      *    7.13  * Hydr. Depth (ft)       *    1.17  *    6.06  *    0.53  *
* Conv. Total (cfs)      * 31160.3  * Conv. (cfs)            *  1576.2  * 29574.8  *     9.3  *
* Length Wtd. (ft)       *  460.32  * Wetted Per. (ft)       *   40.66  *   53.86  *    1.54  *
* Min Ch El (ft)         *  987.47  * Shear (lb/sq ft)       *    0.32  *    1.52  *    0.10  *
* Alpha                  *    1.16  * Stream Power (lb/ft s) *10152.76  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.07  * Cum Volume (acre-ft)   *   21.90  *   80.43  *   13.31  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   40.95  *   20.42  *   29.16  *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
```

```
        need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 1.904

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9884.43  992.81 9885.32  992.85 9892.68  992.87 9909.75  992.72 9920.04  992.84
 9928.15  992.18 9932.14   991.9 9938.33  991.87  9961.1  990.86 9965.82  990.17
 9969.35  990.54 9970.83  990.72 9975.86   991.3 9979.99  987.41 9981.41  986.11
 9988.58  985.87 9990.28  985.81 9990.68  985.78 9991.35  985.79   10000  985.68
10003.84  985.6310011.73  985.4810017.87  990.4310018.81  991.1910029.54  990.81
10029.73   990.810044.96  990.26 10046.6  990.2210051.75  990.57 10052.2  990.56
10057.18  990.96 10058.8  991.0810059.95  991.1710073.81  992.5110077.67  992.27
 10100.7  992.9910112.25  993.25

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9884.43     .05 9975.86    .04810018.81     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9975.8610018.81           508.23  501.96  494.84             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         *  993.12  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.57  * Wt. n-Val.             *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         *  992.55  * Reach Len. (ft)        *  508.23  *  501.96  *  494.84  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *   61.91  *  257.55  *   88.24  *
* E.G. Slope (ft/ft)     *0.004689  * Area (sq ft)           *   61.91  *  257.55  *   88.24  *
* Q Total (cfs)          * 2051.00  * Flow (cfs)              *  140.78  * 1696.46  *  213.77  *
* Top Width (ft)         *  163.02  * Top Width (ft)          *   52.25  *   42.95  *   67.81  *
* Vel Total (ft/s)       *    5.03  * Avg. Vel. (ft/s)        *    2.27  *    6.59  *    2.42  *
* Max Chl Dpth (ft)      *    7.07  * Hydr. Depth (ft)        *    1.18  *    6.00  *    1.30  *
* Conv. Total (cfs)      * 29951.5  * Conv. (cfs)             *  2055.8  * 24774.0  *  3121.7  *
* Length Wtd. (ft)       *  501.82  * Wetted Per. (ft)        *   52.42  *   47.02  *   67.94  *
* Min Ch El (ft)         *  985.48  * Shear (lb/sq ft)        *    0.35  *    1.60  *    0.38  *
* Alpha                  *    1.46  * Stream Power (lb/ft s) *10112.25  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.16  * Cum Volume (acre-ft)    *   21.32  *   77.47  *   12.84  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)          *   40.46  *   19.93  *   28.80  *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 1.809

INPUT
Description:
Station Elevation Data    num=      32
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9923.83  989.22 9925.86   989.2 9928.84  989.39 9952.21  988.69 9964.06   988.4
 9965.21  988.38 9968.46  986.63 9974.22  983.68 9976.52  983.63 9991.39  983.39
   10000   983.310002.33  983.2810009.73   983.310010.79   983.310011.34  983.65
10020.07 988.49110022.25   989.710022.42   989.7 10030.6  989.89 10042.4  990.17
10061.42  990.8610062.77  990.8810064.13  990.8510070.28  991.6510080.05  990.61
10084.01  990.6210090.39  990.4410095.81  990.33 10100.2  990.1610111.94  991.18
10119.22  991.7910134.54  992.18

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9923.83     .05 9965.21    .04810020.07     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9965.2110020.07           568.5  567.66  581.36             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         *  989.93  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.97  * Wt. n-Val.             *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         *  988.95  * Reach Len. (ft)        *  568.50  *  567.66  *  581.36  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *    6.63  *  257.24  *    0.19  *
* E.G. Slope (ft/ft)     *0.008897  * Area (sq ft)           *    6.63  *  257.24  *    0.19  *
* Q Total (cfs)          * 2051.00  * Flow (cfs)              *    8.41  * 2042.41  *    0.19  *
* Top Width (ft)         *   77.46  * Top Width (ft)          *   21.77  *   54.86  *    0.83  *
* Vel Total (ft/s)       *    7.77  * Avg. Vel. (ft/s)        *    1.27  *    7.94  *    0.96  *
* Max Chl Dpth (ft)      *    5.67  * Hydr. Depth (ft)        *    0.30  *    4.69  *    0.23  *
* Conv. Total (cfs)      * 21744.7  * Conv. (cfs)             *    89.1  * 21653.6  *     2.0  *
* Length Wtd. (ft)       *  567.67  * Wetted Per. (ft)        *   21.78  *   57.37  *    0.95  *
* Min Ch El (ft)         *  983.28  * Shear (lb/sq ft)        *    0.17  *    2.49  *    0.11  *
* Alpha                  *    1.04  * Stream Power (lb/ft s) *10134.54  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.18  * Cum Volume (acre-ft)    *   20.92  *   74.50  *   12.34  *
* C & E Loss (ft)        *    0.18  * Cum SA (acres)          *   40.02  *   19.37  *   28.41  *
*****************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION
```

RIVER: 1S2WS31
REACH: A56 RS: 1.702

INPUT
Description:
Station Elevation Data num= 60

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9696.24	989.98	9702.31	990.08	9708.09	990.13	9719.32	989.98	9722.1	989.85
9744.33	989.11	9745.41	989.1	9746.57	989.09	9771.51	988.95	9777.27	989.3
9780.28	989.36	9787.87	988.86	9803.31	987.86	9817.98	987.77	9832	988.1
9840.68	987.39	9845.35	986.98	9860.74	987.17	9865.56	987.22	9872.77	987.32
9881.99	987.4	9892.33	987.4	9894.14	987.26	9934.25	985.97	9940.1	985.83
9947.77	985.64	9949.63	984.34	9953.51	982.18	9968.79	982.38	9975.42	982.46
9980.21	982.58	9981.68	982.6	9994.99	982.66	10000	981.77	10001.41	981.52
10002.99	981.12	10005.28	981.07	10010.12	981.19	10019.23	981.07	10024.62	980.9
10038.45	980.72	10046.69	984.69	10049.32	985.91	10057.39	985.96	10088.57	986.22
10093.91	986.34	10100.69	986.78	10108.31	987.23	10111.54	987.23	10114.54	987.29
10128.85	987.52	10131.62	987.47	10155.45	987.49	10161.94	987.55	10172.57	987.61
10180.12	987.74	10188.41	987.84	10191.6	987.99	10217.55	988.2	10221.45	988.26

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9696.24	.05	9947.77	.04	10049.32	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9947.77 10049.32 478.41 470.56 461.4 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	986.57	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.37	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	986.20	Reach Len. (ft)	478.41	470.56	461.40
Crit W.S. (ft)		Flow Area (sq ft)	6.21	419.74	5.75
E.G. Slope (ft/ft)	0.003839	Area (sq ft)	6.21	419.74	5.75
Q Total (cfs)	2051.00	Flow (cfs)	5.11	2042.84	3.05
Top Width (ft)	159.56	Top Width (ft)	20.77	101.55	37.24
Vel Total (ft/s)	4.75	Avg. Vel. (ft/s)	0.82	4.87	0.53
Max Chl Dpth (ft)	5.48	Hydr. Depth (ft)	0.30	4.13	0.15
Conv. Total (cfs)	33100.9	Conv. (cfs)	82.5	32969.2	49.2
Length Wtd. (ft)	470.57	Wetted Per. (ft)	20.78	103.85	37.24
Min Ch El (ft)	980.72	Shear (lb/sq ft)	0.07	0.97	0.04
Alpha	1.05	Stream Power (lb/ft s)	10221.45	0.00	0.00
Frctn Loss (ft)	1.60	Cum Volume (acre-ft)	20.84	70.09	12.30
C & E Loss (ft)	0.00	Cum SA (acres)	39.75	18.35	28.15

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 1.613

INPUT
Description:
Station Elevation Data num= 44

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800	984.95	9806.95	984.93	9842.08	984.89	9849.61	984.88	9862.81	984.8
9863.25	984.8	9876.48	985.13	9889.3	985.39	9907.17	985.04	9916.32	985.07
9924.44	984.76	9932.07	984.85	9945.71	984.88	9957.47	983.34	9962.97	982.62
9964.24	982.34	9966.01	981.71	9974.31	978.87	9992.62	978.83	9998.4	978.78
10000	978.78	10001.16	978.78	10008.78	978.67	10019.68	978.46	10022.31	978.37
10028.54	97	810034.78	982.28	10037.96	984.46	10038.5	984.78	10043.81	985.09
10061.39	984.59	10071.52	984.23	10072.53	984.2	10083.99	984.44	10097.16	984.7
10100.24	984.77	10116.53	985.01	10130.49	984.32	10141.58	983.73	10151.23	984.63
10185.55	986.29	10185.9	986.31	10186.08	986.3	10200	986		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9800	.05	9962.97	.04	10034.78	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9962.97 10034.78 494.72 501.59 508.54 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	984.97	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	984.56	Reach Len. (ft)	494.72	501.59	508.54
Crit W.S. (ft)		Flow Area (sq ft)	14.37	389.61	19.00
E.G. Slope (ft/ft)	0.003020	Area (sq ft)	14.37	389.61	19.00
Q Total (cfs)	2051.00	Flow (cfs)	22.88	2010.39	17.73
Top Width (ft)	142.67	Top Width (ft)	14.82	71.81	56.04
Vel Total (ft/s)	4.85	Avg. Vel. (ft/s)	1.59	5.16	0.93
Max Chl Dpth (ft)	6.56	Hydr. Depth (ft)	0.97	5.43	0.34
Conv. Total (cfs)	37319.1	Conv. (cfs)	416.3	36580.2	322.6
Length Wtd. (ft)	501.39	Wetted Per. (ft)	14.94	73.76	56.81
Min Ch El (ft)	978.00	Shear (lb/sq ft)	0.18	1.00	0.06
Alpha	1.11	Stream Power (lb/ft s)	10200.00	0.00	0.00
Frctn Loss (ft)	2.29	Cum Volume (acre-ft)	20.72	65.72	12.17
C & E Loss (ft)	0.01	Cum SA (acres)	39.55	17.41	27.66

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 1.518

INPUT
Description:
Station Elevation Data num= 54

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9720.29	983	9730.5	983.1	9745.61	982.8	9768.27	982.43	9773.11	982.23
9796.68	982	9796.69	982	9802.8	980.17	9804	980.36	9809.74	981.66
9826.1	981.76	9833.95	981.87	9838.86	981.93	9844.83	981.64	9855.32	981.4
9877.82	981.4	9880.6	981.39	9884.3	981.54	9901.27	982.21	9908.54	981.98
9923.75	981.85	9948.39	980.75	9951.23	980.62	9953.09	980.61	9962.56	980.7
9970.74	980.78	9972.58	979.82	9978.91	976.77	9984.33	976.6	9996.26	976.49
10000	976.39	46100	10.76	976.12	100	11.86	976.15	100	16.54
10027.51	981.95	100	33.41	982.06	100	64.13	982.65	100	76.53
10082.75	982.97	100	94.83	982.44	100	95.78	982.39	101	07.65
10127.76	982.32	101	28.48	982.34	101	45.05	982.73	101	55.3
10166.96	982.45	10184		983.26	101	87.93	983.36	10200	
982.61									
982.78									
982.94									
982.3									
982.61									
983.04									

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9720.29	.05	9923.75	.04	810027.51	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9923.75 10027.51 504.37 498.41 486.97 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	982.67	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.50	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	982.18	Reach Len. (ft)	504.37	498.41	486.97
Crit W.S. (ft)		Flow Area (sq ft)	70.16	332.88	1.35
E.G. Slope (ft/ft)	0.007662	Area (sq ft)	70.16	332.88	1.35
Q Total (cfs)	2051.00	Flow (cfs)	116.97	1933.20	0.83
Top Width (ft)	258.77	Top Width (ft)	143.10	103.76	11.92
Vel Total (ft/s)	5.07	Avg. Vel. (ft/s)	1.67	5.81	0.61
Max Chl Dpth (ft)	6.06	Hydr. Depth (ft)	0.49	3.21	0.11
Conv. Total (cfs)	23431.8	Conv. (cfs)	1336.4	22086.0	9.4
Length Wtd. (ft)	498.56	Wetted Per. (ft)	143.56	106.09	11.92
Min Ch El (ft)	976.12	Shear (lb/sq ft)	0.23	1.50	0.05
Alpha	1.24	Stream Power (lb/ft s)	10200.00	0.00	0.00
Frctn Loss (ft)	2.56	Cum Volume (acre-ft)	20.24	61.56	12.05
C & E Loss (ft)	0.03	Cum SA (acres)	38.65	16.40	27.26

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 1.423

INPUT
Description:
Station Elevation Data num= 41

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800	980.74	9814.33	980.17	9815.81	980.09	9817.12	980.09	9841.71	980.01
9849.81	979.73	9873.14	979.16	9881.83	979.05	9908.07	979.24	9922.09	979.5
9938.7	979.34	9950.7	978.61	9956.56	978.67	9962.22	979.61	9964.79	978.26
9973.01	973.93	9973.3	973.75	9973.47	973.7	9989.84	974.08	9990.75	974.11
9993.66	974.15	10000	974.25	100027.08	974.67	100030.91	975.5	100042.91	978.65
10046.43	979.57	100058.89	978.57	100062.52	978.37	100066.22	978.51	100083.87	980.26
10098.04	980.94	10106.4	980.4	10116.21	979.82	10126.3	979.73	10128.01	979.71
10130.48	979.83	10145.21	980.33	10156.6	980.3	10170.37	980.56	10185.96	981.02
10200	980.46								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9800	.05	9964.79	.04	810042.91	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9964.79 10042.91 487.28 486.32 483.66 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	980.09	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.41	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	979.68	Reach Len. (ft)	487.28	486.32	483.66
Crit W.S. (ft)		Flow Area (sq ft)	52.49	372.96	25.41
E.G. Slope (ft/ft)	0.003676	Area (sq ft)	52.49	372.96	25.41
Q Total (cfs)	2051.00	Flow (cfs)	56.63	1957.61	36.76
Top Width (ft)	226.04	Top Width (ft)	112.84	78.12	35.09
Vel Total (ft/s)	4.55	Avg. Vel. (ft/s)	1.08	5.25	1.45
Max Chl Dpth (ft)	5.98	Hydr. Depth (ft)	0.47	4.77	0.72
Conv. Total (cfs)	33827.5	Conv. (cfs)	934.1	32287.2	606.3
Length Wtd. (ft)	486.27	Wetted Per. (ft)	113.28	79.75	35.31
Min Ch El (ft)	973.70	Shear (lb/sq ft)	0.11	1.07	0.17
Alpha	1.27	Stream Power (lb/ft s)	10200.00	0.00	0.00
Frctn Loss (ft)	1.93	Cum Volume (acre-ft)	19.53	57.52	11.90
C & E Loss (ft)	0.01	Cum SA (acres)	37.17	15.36	27.00

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 1.331

INPUT
Description:
Station Elevation Data num= 55

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9644.37	978.39	9650.85	978.37	9666.34	978.06	9670.34	977.92	9676.65	977.62
9702.82	977.57	9710.42	977.57	9718.21	977.62	9735.48	977.6	9748.48	977.6
9750.14	977.72	9762.64	977.42	9784.73	977.43	9791.44	977	9792.61	976.82
9797.63	976.1	9803.77	976.59	9805.42	976.71	9807.4	976.78	9818.18	977.25
9831.39	977.4	9852.48	977.5	9860.07	977.59	9887.09	978.03	9890.56	978.09
9890.66	978.1	9893.39	978.09	9918.52	978.09	9924.75	977.94	9948.74	977.14
9952.13	976.93	9956.58	977.1	9964.85	976.92	9966.34	976.6	9970.37	975.75
9977.2	972.61	9978.13	972.04	9983.19	971.95	9991.18	971.8	10000	971.72
10002.03	971.7	10021.94	971.54	10024.62	972.95	10029.66	975.85	10031.23	976.75
10064.2	977.41	10068.43	977.51	10079.65	977.31	10080.17	977.3	10081.59	977.25
10112.69	976.3	10114.63	976.55	10122.72	977.73	10128.4	978.3	10133.08	978.37

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9644.37	.05	9964.85	.048	10031.23	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9964.85 10031.23 510.14 512.63 515.72 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	978.15	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.48	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	977.67	Reach Len. (ft)	510.14	512.63	515.72
Crit W.S. (ft)	975.59	Flow Area (sq ft)	66.27	329.19	58.74
E.G. Slope (ft/ft)	0.004293	Area (sq ft)	66.27	329.19	58.74
Q Total (cfs)	2051.00	Flow (cfs)	68.27	1897.44	85.30
Top Width (ft)	376.42	Top Width (ft)	218.95	66.38	91.09
Vel Total (ft/s)	4.52	Avg. Vel. (ft/s)	1.03	5.76	1.45
Max Chl Dpth (ft)	6.13	Hydr. Depth (ft)	0.30	4.96	0.64
Conv. Total (cfs)	31303.2	Conv. (cfs)	1041.9	28959.4	1301.8
Length Wtd. (ft)	512.56	Wetted Per. (ft)	219.09	68.72	91.21
Min Ch El (ft)	971.54	Shear (lb/sq ft)	0.08	1.28	0.17
Alpha	1.51	Stream Power (lb/ft s)	10133.08	0.00	0.00
Frctn Loss (ft)	2.35	Cum Volume (acre-ft)	18.87	53.60	11.43
C & E Loss (ft)	0.00	Cum SA (acres)	35.32	14.56	26.30

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 1.234

INPUT
Description:
Station Elevation Data num= 69

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9636.37	976.36	9640.76	976.23	9649.73	976.15	9659.51	976.14	9672.61	976.36
9678.89	976.05	9688.02	976.02	9697.21	975.63	9701.79	975.44	9711.28	975.24
9718.74	974.97	9741.96	975	9749.31	975.01	9750.78	975.01	9751.79	975
9752.68	975.01	9778.52	975.01	9779.22	974.96	9782.21	974.72	9786.33	974.39
9787.68	974.54	9791.3	975.04	9796.36	975	9821.92	975.53	9822.94	975.57
9829.91	975.35	9836.64	975	9842.21	975.07	9867.33	975.4	9883.01	974.41
9883.24	974.4	9883.44	974.35	9890.31	972.98	9892.94	973.55	9899.05	974.56
9901.34	974.58	9907.81	974.55	9949.52	974.53	9955.24	974.52	9964.74	974.48
9964.98	974.37	9971.47	971.54	9974.79	969.64	9979.87	969.57	9987.61	969.47
9998.62	969.74	10000	969.75	10016.58	969.85	10019	969.78	10021.65	971.17
10027.68	974.36	10031.23	976.25	10035	975.91	10044.44	975.04	10048.34	974.67
10051.25	974.68	10061.21	974.65	10069.02	975.32	10073.68	975.46	10082.18	975.28
10098.32	974.97	10103.27	974.97	10118.57	975.87	10133.37	976.81	10138.71	977.01
10151.2	976.28	10151.71	976.29	10158.49	976.11	10170.36	977.18		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9636.37	.05	9964.74	.048	10027.68	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9964.74 10027.68 501.23 501.05 500.61 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	975.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.52	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	975.28	Reach Len. (ft)	501.23	501.05	500.61
Crit W.S. (ft)	973.56	Flow Area (sq ft)	110.60	306.07	17.57
E.G. Slope (ft/ft)	0.004909	Area (sq ft)	110.60	306.07	17.57
Q Total (cfs)	2051.00	Flow (cfs)	171.06	1861.13	18.81
Top Width (ft)	339.35	Top Width (ft)	222.00	62.94	54.41
Vel Total (ft/s)	4.72	Avg. Vel. (ft/s)	1.55	6.08	1.07
Max Chl Dpth (ft)	5.81	Hydr. Depth (ft)	0.50	4.86	0.32
Conv. Total (cfs)	29273.5	Conv. (cfs)	2441.5	26563.5	268.5
Length Wtd. (ft)	501.04	Wetted Per. (ft)	222.40	65.20	54.70
Min Ch El (ft)	969.47	Shear (lb/sq ft)	0.15	1.44	0.10
Alpha	1.51	Stream Power (lb/ft s)	10170.36	0.00	0.00
Frctn Loss (ft)	2.18	Cum Volume (acre-ft)	17.83	49.86	10.98
C & E Loss (ft)	0.04	Cum SA (acres)	32.74	13.80	25.44

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

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 1.139

INPUT
Description:
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9610.31  973.97 9616.09  973.89 9619.56  973.77 9638.99  973.65  9656.8  973.32
 9658.37  973.32 9663.01  972.44 9663.84  972.25 9666.46   972.5  9672.4   973.1
 9674.32  973.12 9680.64     973  9737.6   972.6 9738.79   972.6  9740.8  972.61
 9746.62  972.63 9762.46  972.69 9772.81   972.7 9800.01  972.57 9809.29  972.76
 9818.27   972.6 9827.44  972.82 9832.64  972.58 9843.77  972.77 9879.86  972.57
 9900.01   972.6 9900.02   972.6 9941.68  972.91 9944.53  972.92 9945.77  973.14
 9954.68  972.98 9956.08  972.89 9960.95  972.72 9961.67   972.7 9961.71  972.69
 9961.81  972.64 9974.28   967.6 9977.57  967.65 9978.84  967.68 9981.94  967.64
   10000  967.5610001.93  967.5510008.68   967.510009.36  967.48 10018.4  967.21
10021.39  968.8110028.76  972.6410035.56  972.7810039.84  972.8610042.16  973.02
10048.14  972.7810051.92  972.6810054.05  972.6810064.61  972.5510067.15  972.74
10090.28  971.9210094.63   971.710100.22  971.5710103.05  971.4910107.06  971.59
 10130.9  972.29 10141.6  972.6510157.58  973.1610167.15  973.2910177.95  973.49
10185.85  973.5710201.68  973.81

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9610.31     .05 9960.95    .04810028.76     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9960.9510028.76               507  502.82  496.87              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  973.58  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.38  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  973.20  * Reach Len. (ft)         *  507.00  *  502.82  *  496.87  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  142.25  *  322.29  *  106.75  *
* E.G. Slope (ft/ft)      *0.003889  * Area (sq ft)            *  142.25  *  322.29  *  106.75  *
* Q Total (cfs)           * 2051.00  * Flow (cfs)              *  159.56  * 1719.57  *  171.88  *
* Top Width (ft)          *  501.52  * Top Width (ft)          *  301.95  *   67.81  *  131.77  *
* Vel Total (ft/s)        *    3.59  * Avg. Vel. (ft/s)        *    1.12  *    5.34  *    1.61  *
* Max Chl Dpth (ft)       *    5.99  * Hydr. Depth (ft)        *    0.47  *    4.75  *    0.81  *
* Conv. Total (cfs)       * 32888.1  * Conv. (cfs)             *  2558.5  * 27573.5  *  2756.1  *
* Length Wtd. (ft)        *  502.91  * Wetted Per. (ft)        *  302.13  *   70.15  *  131.84  *
* Min Ch El (ft)          *  967.21  * Shear (lb/sq ft)        *    0.11  *    1.12  *    0.20  *
* Alpha                   *    1.88  * Stream Power (lb/ft s) *10201.68  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.74  * Cum Volume (acre-ft)    *   16.38  *   46.25  *   10.27  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)          *   29.72  *   13.04  *   24.37  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 1.044

INPUT
Description:
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9376.34  972.45 9380.46  972.44 9389.62  972.51 9394.75  972.22 9397.34  972.16
 9403.56  971.95 9419.64  971.53 9421.54  971.51 9454.69  971.12  9455.7  971.09
 9460.92  970.98 9469.88  970.86 9475.86  970.84 9493.69  970.84 9504.92  970.86
  9520.9  971.12 9522.92  971.12 9525.83   971.1 9535.85  970.85 9546.11  970.62
 9565.07  970.14 9570.15  969.87 9577.58  969.84 9583.29  969.99 9585.88   969.8
 9588.69  969.58 9592.76  969.27 9599.78  969.05 9600.22     969 9601.12  969.14
  9607.7  970.37 9609.12  970.63  9609.3  970.66 9609.51   970.7 9609.66  970.69
 9628.32  969.79 9652.41  969.36 9659.62  969.17 9683.83   969.1 9686.89   969.1
 9688.89  969.17 9712.83  969.89 9713.63   969.9 9714.43   969.9 9738.08  969.87
 9752.07  969.74 9766.32  969.81 9768.37  969.82 9770.12  969.84 9789.26  970.18
  9794.9  970.43 9807.39  970.58 9814.82   970.7 9818.92  970.76 9819.96  970.79
 9820.74  970.77 9830.72  970.52 9838.55  970.32 9839.01   970.3 9839.85  970.29
 9850.98  969.69 9859.83  969.19  9860.3  969.25 9861.31  969.34 9867.64   970.1
 9870.09  970.25 9886.14  970.06 9896.23  970.06 9908.59  969.97 9911.57  970.02
 9920.49   969.9 9932.83  970.11 9947.74  971.41  9949.6  971.21 9954.86  970.92
 9959.28  970.41 9961.71  969.51 9966.07  967.99 9973.39  965.44  9983.6     965
  9991.8  965.27 9999.26  965.75   10000  965.7410012.05  965.6610018.62  965.62
10021.41  966.58 10027.4  969.4810034.39  969.7310036.02  969.7810063.12   970.6
 10071.6  970.6610076.34   970.710080.22  970.8110097.31   971.210107.86  971.32
10114.37  970.9310119.72  970.5710123.53  970.5110128.83  970.5110135.43  971.04
10136.25  971.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9376.34     .05 9961.71    .048 10027.4     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9961.71 10027.4            491.17  496.74  504.11              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
```

E.G. Elev (ft)	970.80	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.69	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	970.11	Reach Len. (ft)	491.17	496.74	504.11
Crit W.S. (ft)	969.52	Flow Area (sq ft)	116.72	265.46	5.98
E.G. Slope (ft/ft)	0.008173	Area (sq ft)	116.72	265.46	5.98
Q Total (cfs)	2051.00	Flow (cfs)	187.86	1855.87	7.27
Top Width (ft)	367.72	Top Width (ft)	282.37	65.69	19.65
Vel Total (ft/s)	5.28	Avg. Vel. (ft/s)	1.61	6.99	1.22
Max Chl Dpth (ft)	5.11	Hydr. Depth (ft)	0.41	4.04	0.30
Conv. Total (cfs)	22687.1	Conv. (cfs)	2078.0	20528.7	80.5
Length Wtd. (ft)	496.04	Wetted Per. (ft)	282.74	67.23	19.66
Min Ch El (ft)	965.00	Shear (lb/sq ft)	0.21	2.01	0.16
Alpha	1.59	Stream Power (lb/ft s)	10136.25	0.00	0.00
Frctn Loss (ft)	2.23	Cum Volume (acre-ft)	14.87	42.86	9.62
C & E Loss (ft)	0.14	Cum SA (acres)	26.32	12.27	23.50

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 0.950

INPUT
Description:
Station Elevation Data num= 116

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9277.98	971.08	9286.2	970.87	9295.38	970.87	9297.85	970.83	9302.78	970.73
9311.28	970.42	9334.04	969.82	9336.21	969.72	9358.02	969.65	9365.64	969.52
9390.02	968.93	9395.6	968.83	9406.87	969.13	9408.46	969.19	9410.2	969.14
9419.01	968.75	9422.37	968.68	9433.86	968.74	9438.82	968.79	9462.54	968.52
9468.68	968.47	9474.07	968.45	9477.15	968.14	9487.47	967.04	9494.53	966.8
9494.64	966.8	9502.89	966.53	9504.35	966.68	9511.5	967.28	9519.6	967.45
9533.94	967.63	9541.85	967.8	9553.03	967.92	9568.35	968.02	9574.37	967.95
9581.04	966.63	9582.51	966.34	9584.57	966.62	9592.51	967.84	9594.97	968.3
9603.23	967.95	9605.11	967.9	9620.17	967.56	9623.84	967.47	9634.9	967.97
9637.25	968.18	9645.69	966.71	9648.42	966.2	9648.48	966.22	9648.61	966.22
9650.05	966.28	9658.91	966.75	9680.85	966.5	9682.11	966.52	9692.24	968.11
9692.87	968.21	9693.42	968.3	9704.53	967.96	9715.75	967.94	9723.6	967.97
9732.43	968.14	9740.85	967.87	9749.84	967.76	9764.23	967.65	9778.69	967.62
9782.07	967.6	9787.78	967.5	9788.53	967.51	9806.09	968.05	9812.24	968.3
9818.5	968.03	9829.58	968.24	9838.89	968.13	9843.79	968.15	9858.67	967.7
9873.03	967.4	9880.3	967.4	9905.73	967.57	9909.7	967.61	9911.15	967.59
9916.04	967.99	9926	968.32	9933.13	968.29	9935.92	968.4	9937.48	968.037
9941.76	967.04	9948.36	965.49	9951.67	964.72	9952.55	964.51	9952.9	964.43
9954.79	964.38	9961.47	964.26	9968.23	964.06	9981.76	963.59	9987.2	963.3
9996.96	963.13	10000	963.13	10011.59	963.14	10013.2	963.05	10026.2	963.2
10027.31	963.21	10031.24	964.63	10036	966.33	10038.63	967.01	10042.33	968.15
10047.34	968.13	10072.8	968	10083.61	967.96	10088.9	968	10095.45	968.03
10100.01	968.13	10115.44	968.33	10116.52	968.36	10124.6	968.29	10125.57	968.3
10128.1	968.68								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9277.98	.05	9937.48	.048	10042.33	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9937.48	10042.33	584.93	593.34	603.23	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	968.44	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.22	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	968.22	Reach Len. (ft)	584.93	593.34	603.23
Crit W.S. (ft)		Flow Area (sq ft)	272.32	415.96	10.20
E.G. Slope (ft/ft)	0.002832	Area (sq ft)	272.32	415.96	10.20
Q Total (cfs)	2051.00	Flow (cfs)	342.29	1703.98	4.73
Top Width (ft)	603.13	Top Width (ft)	434.02	104.85	64.26
Vel Total (ft/s)	2.94	Avg. Vel. (ft/s)	1.26	4.10	0.46
Max Chl Dpth (ft)	5.17	Hydr. Depth (ft)	0.63	3.97	0.16
Conv. Total (cfs)	38538.2	Conv. (cfs)	6431.7	32017.6	88.9
Length Wtd. (ft)	592.33	Wetted Per. (ft)	434.87	106.09	64.26
Min Ch El (ft)	963.05	Shear (lb/sq ft)	0.11	0.69	0.03
Alpha	1.65	Stream Power (lb/ft s)	10128.10	0.00	0.00
Frctn Loss (ft)	2.54	Cum Volume (acre-ft)	12.68	38.97	9.53
C & E Loss (ft)	0.04	Cum SA (acres)	22.28	11.30	23.02

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 0.837

INPUT
Description:
Station Elevation Data num= 82

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9668.69	967.29	9670.99	967.23	9681.52	966.92	9686.95	964.46	9688.88	963.49
9690.88	963.6	9708.54	963.22	9708.72	963.2	9708.93	963.33	9716.06	967.2

```
 9721.76  967.06 9724.23  966.91 9729.13  966.97 9732.17  967.05 9743.73  966.84
 9747.27  964.98 9749.33  964.25 9751.21  964.32 9754.23   964.5 9763.16  965.87
 9764.11      966 9768.26   966.2 9781.68  966.22 9783.66   966.2 9784.04  966.19
 9784.64  966.19 9803.52  965.71 9811.77  965.88 9819.53  965.84 9826.84  965.72
 9836.84  965.67 9837.39  965.67 9842.29  965.53 9859.09  965.43  9866.2  965.25
 9869.16  965.35 9880.84  965.43 9893.98   965.3 9898.58  965.52 9907.86  965.94
  9916.4  965.84 9934.58   965.5 9959.69  965.32 9960.88   965.3  9962.1  964.77
 9964.76  963.55 9971.64   960.4  9974.7   960.4 9984.15   960.4 9993.58   960.4
   10000  960.4710010.76  960.5910019.67  960.7410022.22  960.6610026.94  962.94
10031.33 964.97310034.37  966.3810042.26  966.0110046.04  965.8310054.02  965.46
 10055.5  965.4510070.83  965.47 10075.8  965.5510090.72  965.7310105.53  965.58
10118.63  965.62 10128.4  965.2710130.67  965.2810156.65  965.5910157.61   965.6
10158.84  965.6210181.18  965.8610196.84  965.5410203.76  965.4710205.67  965.33
10222.12  965.7910229.55  965.95 10239.3  965.8310262.04  965.88 10269.4  965.91
10296.93      96610305.33  966.01

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9668.69     .05  9962.1    .04810031.33     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9962.110031.33            407.83   407.1  406.41            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  965.86  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.64  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  965.22  * Reach Len. (ft)         *  407.83  *  407.10  *  406.41  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   49.79  *  285.79  *    0.07  *
* E.G. Slope (ft/ft)      *0.007205  * Area (sq ft)            *   49.79  *  285.79  *    0.07  *
* Q Total (cfs)           * 2051.00  * Flow (cfs)              *  153.57  * 1897.39  *    0.04  *
* Top Width (ft)          *  110.03  * Top Width (ft)          *   40.26  *   69.23  *    0.53  *
* Vel Total (ft/s)        *    6.11  * Avg. Vel. (ft/s)        *    3.08  *    6.64  *    0.58  *
* Max Chl Dpth (ft)       *    4.82  * Hydr. Depth (ft)        *    1.24  *    4.13  *    0.12  *
* Conv. Total (cfs)       * 24163.3  * Conv. (cfs)             *  1809.3  * 22353.5  *     0.4  *
* Length Wtd. (ft)        *  407.13  * Wetted Per. (ft)        *   41.52  *   71.16  *    0.58  *
* Min Ch El (ft)          *  960.40  * Shear (lb/sq ft)        *    0.54  *    1.81  *    0.05  *
* Alpha                   *    1.11  * Stream Power (lb/ft s)   *10305.33  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.45  * Cum Volume (acre-ft)     *   10.51  *   34.19  *    9.46  *
* C & E Loss (ft)         *    0.08  * Cum SA (acres)           *   19.10  *   10.12  *   22.57  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 0.760

INPUT
Description:
Station Elevation Data     num=     108
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
***********************************************************************************
 9596.94  963.96 9599.74  963.95 9604.42  963.88 9608.72  963.62 9620.84  962.83
 9637.96  963.63 9639.72  963.68 9643.97  963.67 9655.37  963.55 9662.48  963.69
 9662.74   963.7 9673.77  963.56 9687.86  963.43 9694.17  963.45 9704.84  963.02
 9707.92  962.86 9712.13  962.82 9718.73  962.94 9736.47  963.22 9748.16  963.49
 9760.78  963.76 9764.43  963.79 9767.95   963.8 9779.18  963.73 9783.03  963.32
 9790.73  962.81 9797.23  962.98 9824.91  963.92 9828.97  962.89 9835.31  961.13
  9840.3  960.78 9843.55  960.56 9847.86  962.79 9852.44  964.87 9871.41  963.71
 9877.78  963.41 9878.97  963.24 9884.53  963.32 9921.91  963.12 9922.78  963.11
 9928.49   963.4 9932.25   963.8 9935.62 962.671 9943.62  959.99 9944.43   959.7
 9944.94   959.7 9957.45  959.62  9963.1  959.54 9973.33   959.3 9987.34  959.24
 9997.93  958.82   10000  958.7710010.35  958.5110018.63  958.5710023.19  958.74
10033.77  959.2310040.85  963.0310043.58  964.9710051.15   964.110055.35  964.24
10056.45  964.3910058.16  964.6210066.09   964.410082.07  963.5110096.63  963.37
10114.56  963.3910133.67  963.0810137.67  963.0910144.65  963.1310158.93  963.16
10170.22  962.89 10180.3  962.4810191.27  962.1110193.29  962.1210202.23  962.03
10215.75  962.3610226.88   962.410231.02  962.4510242.25  962.6210253.54  962.87
10279.35  962.6110279.92  962.6110288.79  962.8910302.37   962.810318.69  962.54
   10333  962.42 10334.3   962.410334.85  962.4110342.72   962.7 10354.3  962.65
10364.41  962.9210375.91   963.310386.72  963.0310398.16  962.8310418.06  963.08
10430.84  963.4110436.89  963.3610450.85  963.4710453.46  963.35 10459.8  963.32
10476.59   963.510493.18  963.7310498.46  963.7210505.42   963.710512.14  963.81
10520.25   963.710521.96  963.8210540.04  963.83

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9596.94     .05 9935.62    .04810040.85     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9935.6210040.85           499.79     500  501.07            .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9596.94 9824.91  963.92        T

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  963.33  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.37  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  962.96  * Reach Len. (ft)         *  499.79  *  500.00  *  501.07  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   29.10  *  371.33  *   76.58  *
* E.G. Slope (ft/ft)      *0.005108  * Area (sq ft)            *   31.06  *  371.33  *   76.58  *
* Q Total (cfs)           * 2051.00  * Flow (cfs)              *   77.94  * 1888.43  *   84.63  *
* Top Width (ft)          *  366.96  * Top Width (ft)          *   46.52  *  105.09  *  215.35  *
* Vel Total (ft/s)        *    4.30  * Avg. Vel. (ft/s)        *    2.68  *    5.09  *    1.11  *
* Max Chl Dpth (ft)       *    4.45  * Hydr. Depth (ft)        *    1.43  *    3.53  *    0.36  *
* Conv. Total (cfs)       * 28698.0  * Conv. (cfs)             *  1090.6  * 26423.2  *  1184.2  *
* Length Wtd. (ft)        *  500.17  * Wetted Per. (ft)        *   21.26  *  106.55  *  215.39  *
* Min Ch El (ft)          *  958.51  * Shear (lb/sq ft)        *    0.44  *    1.11  *    0.11  *
```

```
* Alpha                  *    1.31  * Stream Power (lb/ft s) *10540.04  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.09  * Cum Volume (acre-ft)   *   10.14  *   31.12  *    9.10  *
* C & E Loss (ft)        *    0.05  * Cum SA (acres)         *   18.69  *    9.30  *   21.56  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 0.666

INPUT
Description:
Station Elevation Data    num=     158
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9582.23  961.94 9583.01  961.91 9592.25  961.84 9605.42  961.68 9614.55  961.51
 9614.74  961.49 9615.12   961.5 9616.29   961.5 9644.35  961.36 9655.65  961.64
 9658.92  961.64    9680  961.31  9688.7   961.2 9695.69   961.2 9700.81  961.18
 9708.47  960.98 9716.04  960.74 9734.25   960.1 9737.51     960 9757.06  960.71
  9761.8  960.81 9765.67  960.75 9782.29  960.48 9785.75  959.93 9791.25  959.15
 9795.38  960.31 9800.17  961.65 9806.51  961.43 9810.34  960.85 9810.49  960.81
 9829.67  960.87 9832.62  960.72 9836.55  960.75  9841.9  961.15 9845.76   961.4
  9851.5  959.43 9852.38  959.19 9854.02  959.16 9868.26  959.19 9868.77  959.19
 9869.39  959.41 9871.81  960.34 9876.59  962.19 9877.59  962.11  9881.7   961.8
 9889.54  961.59 9904.17  961.13 9912.66   961.2 9927.98  961.11 9928.88  961.07
 9930.25  961.14 9944.01  961.87 9945.69  961.77 9951.61  961.49 9952.63  961.44
 9953.26  961.41 9954.56  960.84 9961.46  957.82 9964.19  956.58 9968.98  956.56
 9976.48   956.5 9985.11  956.54   10000  956.5310006.63  956.53 10015.7   956.4
 10023.8   956.310026.98   958.610031.37  961.4510038.82  961.4510047.24  961.41
10058.17  961.3610061.47  960.6310068.27  958.5510068.78  958.5710070.24  958.89
10079.65  960.4710084.15   961.210086.95  962.0110096.75  961.4410098.68     961
10107.93   960.5 10130.3  960.2410138.23  959.9710155.94  959.4210157.14  959.46
10159.24  959.5510170.04     96010176.56  960.0710188.61  960.4110202.29  959.88
10207.13  959.8610209.47  959.8210213.05  959.8610234.42  960.0410244.86  959.98
10270.82  959.9710273.24  959.9310275.44  959.9510287.28   959.810300.09  960.07
10332.63  960.4710336.57  960.4910338.48  960.41 10341.9  960.4710342.02  960.48
 10353.6  960.11 10354.4   960.110355.94  960.1210381.71  960.3510394.31  960.24
10403.02  960.2310409.27   960.3 10411.1  960.3910416.75  960.3610449.06  960.22
10456.52  960.1510461.45  960.1910492.72  960.6110497.17  960.8710513.85  960.73
10529.89  960.7610552.28  960.44 10554.3  960.2610564.51  960.3310573.35  960.68
10580.45   961.2 10598.6  960.5110602.92   960.510625.78  960.43 10632.6  960.52
10638.48  960.5710641.88  960.6210646.74  960.7910658.91   960.510661.87  960.45
10671.84  960.5410681.92  960.6110687.44  960.7310693.69  960.7510725.34  960.73
10726.65   960.710727.44  960.7410729.76  960.8210731.83  960.8510753.28   961.1
10767.45  960.83 10779.9  960.6810784.97  960.7210786.76  960.79 10804.4  960.96
10807.09     96110807.25  961.01   10808  961.0110838.24  961.4510845.73  961.38
10865.48  961.0610872.14  961.5110877.87  961.62

Manning's n Values        num=       3
     Sta    n Val     Sta    n Val     Sta   n Val
*************************************************
 9582.23      .05 9952.63     .04810031.37     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9952.6310031.37           503.09  498.05  494.49             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9582.23 9800.17  961.65       T

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         *  961.19  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.22  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         *  960.98  * Reach Len. (ft)         *  503.09  *  498.05  *  494.49  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *   43.16  *  304.11  *  436.59  *
* E.G. Slope (ft/ft)     *0.003469  * Area (sq ft)            *   93.57  *  304.11  *  436.59  *
* Q Total (cfs)          * 2051.00  * Flow (cfs)              *   88.06  * 1364.60  *  598.34  *
* Top Width (ft)         *  925.04  * Top Width (ft)          *  145.66  *   76.39  *  702.99  *
* Vel Total (ft/s)       *    2.62  * Avg. Vel. (ft/s)        *    2.04  *    4.49  *    1.37  *
* Max Chl Dpth (ft)      *    4.68  * Hydr. Depth (ft)        *    0.76  *    3.98  *    0.62  *
* Conv. Total (cfs)      * 34822.5  * Conv. (cfs)             *  1495.2  * 23168.5  * 10158.8  *
* Length Wtd. (ft)       *  497.65  * Wetted Per. (ft)        *   57.16  *   78.77  *  703.69  *
* Min Ch El (ft)         *  956.30  * Shear (lb/sq ft)        *    0.16  *    0.84  *    0.13  *
* Alpha                  *    2.06  * Stream Power (lb/ft s) *10877.87  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.38  * Cum Volume (acre-ft)   *    9.42  *   27.25  *    6.15  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *   17.59  *    8.26  *   16.28  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
          This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 0.571

INPUT
Description:
Station Elevation Data    num=     182
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9578.27  959.98 9581.61  959.89 9584.13  959.77 9586.46  959.61 9589.02  959.43
 9598.14  959.63 9600.51  959.57 9605.81  959.43 9628.78  959.18 9633.16  959.16
  9635.9  959.12 9644.49  959.04 9650.92  959.01 9651.51     959 9661.46  958.61
 9661.75   958.6 9662.01   958.6 9673.67  958.51 9681.24  958.48 9683.64  958.34
 9687.26  958.49 9700.09  958.57 9708.56  958.59 9727.56  958.61 9745.65  958.61
 9746.21   958.6 9746.67  958.59 9772.31   957.9 9776.87  957.82 9794.72  957.65
```

```
 9820.22  957.63 9822.07   957.6  9824.6   957.6 9830.88  956.46 9836.49  955.88
 9836.79   955.9 9836.82  955.68 9838.25  955.53 9838.98  955.86 9847.31  955.71
  9848.4  956.26 9855.28  959.33 9859.23  959.45 9864.32  959.15 9876.73   958.5
 9883.64  958.57 9890.65  958.71 9896.91  959.23 9919.53  958.69 9926.89   958.7
 9928.41  958.56 9932.14  958.59 9937.33  958.71 9946.91  958.92 9957.47  958.81
 9958.78  958.82 9959.23  958.79 9961.12  958.75 9964.44  958.68 9968.01   958.6
 9974.65  954.86 9977.04  953.56 9980.01  953.55 9984.98  953.44   10000   953.5
  10002.5 953.5110008.57 953.7910010.57 953.8410020.06 953.9810023.06   955.7
10031.08 958.0710032.23 958.52110034.19 959.2910035.12   959.710039.84 959.39
10040.57 959.3410051.03 959.3210052.89  958.710058.16 958.7310070.72 958.43
10085.53 958.1910094.28 958.1510101.05 958.1810131.79   958.110131.91  958.1
10131.93  958.110131.97  958.110132.18  958.110145.72 958.3310147.19 958.36
10171.24 957.7310182.15 957.83 10200.7 958.3210202.68   958.310209.74 958.31
10233.54 958.2610243.61 958.2210246.14 958.2410246.69 958.2410250.55 958.32
10256.25 958.3810256.46 958.3910265.87 958.5110266.68   958.210269.47 957.97
10270.89 957.72 10276.3 956.4810281.69 957.1810289.79 958.4210299.95 958.38
10302.77 958.2310312.84 958.3310327.59 958.2410335.61 958.0510360.94 957.75
10371.19  957.610380.16  957.610404.52  957.610418.77 957.8810431.75 957.96
 10434.1 957.89 10457.2  957.610463.21 957.4410470.69 957.6910472.11 957.69
10484.39 957.8810503.27 958.0910503.93 958.0910504.72 958.1210507.49 958.13
10532.19 958.2110541.81  957.910544.39 957.8710554.29 957.9310579.03 958.16
10592.27 958.0510606.37 957.5610613.06  957.310622.12 957.5310641.81 958.06
10652.23 958.1210668.96 958.3510671.08 958.3910682.53 958.1410688.42 958.19
10696.36 958.3610700.69 958.4310729.83 958.2710756.52 958.2810757.84  958.3
10759.48 958.3210767.16  958.3 10782.9 958.24 10789.1 958.5210806.64 958.81
10813.14 958.3410832.64 958.4710850.47  958.610860.15 958.5110867.77 958.86
10890.36  958.910895.27 958.7310897.07 958.7310912.19 958.8210931.72 958.58
10935.96 958.4310939.71 958.4510943.56  958.510961.62 958.6910969.52 958.99
10970.22     95910986.39 958.7111010.44 958.1211011.44 958.1211012.12 958.11
11028.96  958.411035.83  958.411047.73 958.4911053.56 958.6611066.73 958.84
11068.41 958.8111069.07 958.87

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9578.27      .05 9968.01    .04810032.23     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       9968.0110032.23           510.56  498.07     494              .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  958.80  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.47  * Wt. n-Val.              *   0.050  *    0.048  *   0.050  *
* W.S. Elev (ft)          *  958.33  * Reach Len. (ft)         *  510.56  *   498.07  *  494.00  *
* Crit W.S. (ft)          *  958.33  * Flow Area (sq ft)       *   92.10  *   245.12  *  213.94  *
* E.G. Slope (ft/ft)      *0.007008  * Area (sq ft)            *   92.10  *   245.12  *  213.94  *
* Q Total (cfs)           * 2051.00  * Flow (cfs)              *  220.51  *  1533.64  *  296.85  *
* Top Width (ft)          *  827.96  * Top Width (ft)          *   96.57  *    63.24  *  668.15  *
* Vel Total (ft/s)        *    3.72  * Avg. Vel. (ft/s)        *    2.39  *     6.26  *    1.39  *
* Max Chl Dpth (ft)       *    4.89  * Hydr. Depth (ft)        *    0.95  *     3.88  *    0.32  *
* Conv. Total (cfs)       * 24500.8  * Conv. (cfs)             *  2634.2  *  18320.5  *  3546.1  *
* Length Wtd. (ft)        *  499.26  * Wetted Per. (ft)        *   97.56  *    65.34  *  668.56  *
* Min Ch El (ft)          *  953.44  * Shear (lb/sq ft)        *    0.41  *     1.64  *    0.14  *
* Alpha                   *    2.18  * Stream Power (lb/ft s) *11069.07  *     0.00  *    0.00  *
* Frctn Loss (ft)         *    2.39  * Cum Volume (acre-ft)    *    8.35  *    24.11  *    2.46  *
* C & E Loss (ft)         *    0.08  * Cum SA (acres)          *   16.19  *     7.46  *    8.50  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The program used critical depth
         for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
         water surface came back below critical depth.  This indicates that there is not a valid subcritical answer.  The program
         defaulted to critical depth.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 0.477

INPUT
Description:
Station Elevation Data    num=     158
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9400.73  956.42  9406.9  956.24 9416.26  956.52 9424.49  956.97 9436.18  956.45
  9439.7  956.33  9441.1  956.28 9455.43     956 9456.78  955.98 9471.67   955.6
 9481.21  955.73 9487.46   955.8 9503.25  955.82 9509.12  955.82 9519.77   955.5
 9528.91   955.3 9537.19  955.17 9540.58  955.27 9558.36  955.18 9559.86   955.1
 9573.21  954.89 9582.37  954.68 9590.67  954.86 9602.27  955.06 9612.09  955.11
 9617.98  955.19 9619.97  955.12 9620.86   955.1 9631.18  955.01 9657.51  954.65
 9665.46  954.72 9676.43  955.36 9679.46  955.47 9696.46  955.43 9710.48  955.57
  9720.3  955.63 9728.03   955.8 9734.06  955.82 9742.97   956.1 9751.21  954.14
 9751.76     954 9752.68  953.99 9757.79  953.87 9764.67  955.09 9768.14  955.73
 9769.71  956.09 9775.85  955.88  9790.6  955.53  9806.8  955.64 9819.31  955.66
 9835.54  956.19 9851.85  956.13 9852.86  956.13 9863.47  956.32 9865.59  956.16
 9869.93  954.55 9880.87  952.88 9883.49  952.74 9885.46  953.15 9890.06  954.33
 9895.57  955.23 9899.27  955.93 9904.88  956.05 9916.34  956.14 9922.71  955.63
 9922.75  955.63 9924.79  954.75 9929.49  952.73 9930.57  952.19 9932.86  952.09
 9944.85  951.34 9967.77  951.87 9968.43  951.89  9969.1  952.06 9976.54  953.82
 9983.06  953.94 9985.01  953.98 9986.64  953.7310000.83  951.7410003.83  951.66
10007.52   951.610011.27  952.7510013.17  951.61 10015.8  951.5710020.45   951.4
10022.03  951.4410027.59   951.710037.15  952.2110038.36  952.7810040.34  953.71
10044.26  955.4810046.52   956.510073.16  955.8910090.22  955.6810097.55  955.46
10112.48  955.5610128.53  955.4310136.24   955.310140.58  955.2510144.84  955.34
10149.87  955.3110185.46  956.0810200.32  956.4310207.97  955.3210210.31  955.02
10221.02  956.9610221.24     95710222.37  956.9310235.61   956.110243.13  956.07
10270.81   957.110271.19  957.1910271.88  957.0610275.92   956.310281.65  955.21
10282.91  955.4210290.94   956.910295.84  956.5110300.63  956.1810322.55  956.05
10345.42  956.4110356.21  956.2810371.17  955.7710393.38  955.7410403.66   955.8
10418.65  955.8810424.99  955.7810434.75   955.8 10456.4  955.0410459.02  954.99
10461.56  954.9410502.29  954.4810507.46   954.510512.29  954.4110519.11  955.27
```

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10523.52  955.8210551.24  955.57 10551.8  955.5910552.96   955.610578.43  955.65
10606.78  955.6910608.67  955.7610617.71  956.32 10622.3  956.4210658.32   956.4
10659.86  956.4110662.67  956.3810676.48  956.4310681.42  956.4410692.43  956.19
10693.56   956.2 10700.6  956.2210719.67   956.110726.25  956.0110731.06  956.09
 10741.7  956.1310771.86  956.53 10774.5  956.66

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9400.73     .05 9922.71    .04810044.26     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9922.7110044.26            510.23  503.88  492.38             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          *  955.90  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.21  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  955.69  * Reach Len. (ft)         *  510.23  *  503.88  *  492.38  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  195.18  *  404.29  *   93.81  *
* E.G. Slope (ft/ft)      *0.003482  * Area (sq ft)            *  195.18  *  404.29  *   93.81  *
* Q Total (cfs)           * 2051.00  * Flow (cfs)              *  306.66  * 1624.61  *  119.72  *
* Top Width (ft)          *  679.25  * Top Width (ft)          *  311.55  *  121.55  *  246.15  *
* Vel Total (ft/s)        *    2.96  * Avg. Vel. (ft/s)        *    1.57  *    4.02  *    1.28  *
* Max Chl Dpth (ft)       *    4.35  * Hydr. Depth (ft)        *    0.63  *    3.33  *    0.38  *
* Conv. Total (cfs)       * 34756.0  * Conv. (cfs)             *  5196.7  * 27530.5  *  2028.8  *
* Length Wtd. (ft)        *  504.80  * Wetted Per. (ft)        *  312.61  *  123.92  *  246.49  *
* Min Ch El (ft)          *  951.34  * Shear (lb/sq ft)        *    0.14  *    0.71  *    0.08  *
* Alpha                   *    1.51  * Stream Power (lb/ft s) *10774.50  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.86  * Cum Volume (acre-ft)    *    6.66  *   20.39  *    0.71  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)          *   13.80  *    6.40  *    3.31  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31
REACH: A56                RS: 0.381

INPUT
Description:
Station Elevation Data    num=     182
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9056.04  954.07 9061.31  954.12 9064.16  954.07 9070.42  954.04 9093.95   953.7
 9096.61  953.68 9113.19  953.27 9118.28  953.26 9125.51  953.09 9131.03  952.91
 9141.87  952.88 9161.63  952.75 9169.47  952.75 9179.82  952.99 9195.17  952.77
 9199.23  952.72 9211.63  952.28 9223.49  952.34  9242.7  952.16 9251.48  952.17
 9254.91   952.2 9256.47   952.2 9256.56  952.17 9258.38  952.21 9272.41  952.46
 9289.09  952.39 9291.52  952.37 9296.51  952.28  9307.1  952.09 9309.66  952.06
 9317.79      952 9317.97     952 9322.78     952 9347.25  951.66  9358.3  951.42
  9364.8  951.15 9372.05  951.86 9376.28  951.95 9379.52  952.15 9390.56   951.1
 9390.57   951.1 9411.49   951.9  9429.3  951.37 9441.84  951.16 9444.24  951.26
 9451.08  951.42 9463.61  951.85  9479.2   951.9 9484.45  951.86 9489.68  951.98
 9500.26   952.1 9516.73  952.37 9536.79  951.96  9549.7  951.47 9557.74  951.54
 9569.91  951.92 9574.52  951.91 9586.55   952.3 9595.12  952.54 9608.64   952.4
 9620.29  952.51 9624.47  952.68 9633.01  952.75 9650.92  952.41 9653.74  952.34
 9657.31  952.38 9665.99   952.4 9680.66  952.47 9693.36  952.57  9704.8  952.22
 9719.88  952.15 9726.14  952.03 9742.12  952.73 9753.11  953.39 9756.01  953.32
 9778.46  952.64 9795.67  952.63 9815.43  952.68 9822.24  952.77 9830.19   952.7
 9851.04  953.16 9855.74  953.38 9878.13  952.81 9878.57  952.94 9880.85  953.86
 9881.39  953.88 9893.33  952.71 9893.43   952.7 9912.22  953.41  9914.5  953.38
 9915.63  953.28 9918.44  953.24    9949  952.32 9949.64  952.06 9951.94  951.49
 9953.58  951.09 9962.05     949 9963.79  949.04 9970.98  949.11 9971.67  949.18
 9977.78      950 9983.88  949.26 9987.48  948.84   10000  951.7410002.47  948.34
 10004.7  948.2510007.02  948.210009.95  948.1810021.59  948.1410028.83 952.115
10030.86  953.23 10033.3  954.6210035.21  954.5410040.03  954.3410064.07   953.8
10075.78  953.0210101.46   953.3 10104.5  953.3210106.81  953.3110108.59  953.32
10137.87  953.35 10141.6  953.3110171.41  953.2710182.95  953.8410192.59  953.57
10198.37  953.4110211.43  953.2110220.22  953.3310226.87  953.0610231.11  952.62
10233.66  952.5910240.66   952.410246.46  952.6510253.12   953.110262.22  953.29
 10264.1  952.9210292.79  952.9210298.57  952.98 10302.7  952.8710328.16   952.9
 10339.6  952.9410343.58  952.9410369.37  952.8110401.51  953.49 10402.8  953.49
10403.02   953.510404.57  953.5110432.85  953.3610450.84   953.710459.52   953.7
10474.48   953.710479.38   953.710487.08  953.6710496.99  953.7510499.83  953.78
10523.27  953.8710529.66  953.9110534.38  953.9810559.28  954.1610571.78   953.8
 10575.2   953.810585.61  954.2910585.77   954.310585.84   954.310610.79  954.46
10612.92  954.4810618.34  954.44   10627  954.3210656.06  953.8510679.76   953.8
10686.93  953.8310695.35  953.4810697.06  953.7110703.45  953.3710727.24  953.65
10735.68  953.8310779.68   954.810784.81  954.7410788.43  954.6810791.24  954.58
10794.02  954.52   10800  954.33

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9056.04     .05    9949    .04810028.83     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          994910028.83           1194.97 1203.49 1243.21             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          *  953.01  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.51  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  952.50  * Reach Len. (ft)         * 1194.97  * 1203.49  * 1243.21  *
* Crit W.S. (ft)          *  952.46  * Flow Area (sq ft)       *  242.33  *  238.91  *    0.45  *
* E.G. Slope (ft/ft)      *0.010764  * Area (sq ft)            *  242.33  *  238.91  *    0.45  *
* Q Total (cfs)           * 2051.00  * Flow (cfs)              *  503.87  * 1546.86  *    0.26  *
* Top Width (ft)          *  582.03  * Top Width (ft)          *  495.34  *   79.83  *    6.86  *
* Vel Total (ft/s)        *    4.26  * Avg. Vel. (ft/s)        *    2.08  *    6.47  *    0.58  *
```

* Max Chl Dpth (ft)	*	4.36	* Hydr. Depth (ft)	*	0.49	*	2.99	*	0.07 *
* Conv. Total (cfs)	*	19769.0	* Conv. (cfs)	*	4856.7	*	14909.8	*	2.5 *
* Length Wtd. (ft)	*	1202.43	* Wetted Per. (ft)	*	495.55	*	83.47	*	6.96 *
* Min Ch El (ft)	*	948.14	* Shear (lb/sq ft)	*	0.33	*	1.92	*	0.04 *
* Alpha	*	1.80	* Stream Power (lb/ft s)	*	10800.00	*	0.00	*	0.00 *
* Frctn Loss (ft)	*	6.50	* Cum Volume (acre-ft)	*	4.10	*	16.67	*	0.18 *
* C & E Loss (ft)	*	0.09	* Cum SA (acres)	*	9.07	*	5.24	*	1.88 *

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 0.154

INPUT
Description:
Station Elevation Data num= 93

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9578.07	946.5	9578.8	946.48	9593.2	945.69	9613.67	945.53	9614.29	945.53
9615.62	945.53	9627.26	946.12	9633.2	946.34	9639.63	946.35	9654.64	946.46
9691.91	946.5	9700.17	946.49	9701.47	946.51	9703.38	946.54	9733.87	946.46
9738.3	946.28	9778.6	946.78	9780.92	946.81	9781.53	946.79	9791.02	946.65
9808.11	946.38	9814.09	946.37	9829.22	946.42	9847.26	946.5	9859.61	946.47
9864.78	946.39	9868.11	946.31	9871.14	946.34	9895.29	946.5	9900.93	946.48
9915.37	946.3	9925.91	946.55	9938.7	946.23	9956.94	946.17	9958.12	946.19
9965.1	946.89	9970.17	946.82	9975.22	946.62	9985.45	944.04	9993.77	941.98
9998.77	941.88	10004.56	941.77	10020.66	941.34	10025.09	942.31	10027.96	943
10033.84		94310034.49		94310034.84		94310035.43		94310063.27	943.24
10072.11	943.01	10102.42	943.48	10103.82	943.51	10107.53	943.44	10141.31	943.19
10151.27	945.94	10155.52	947.42	10159.67	947.33	10182.04	946.51	10188.84	946.43
10198.57	946.3	10206.03	946.28	10223.9	946.16	10235.74	945.98	10256.43	946.23
10285.86	946.19	10289.9	946.11	10296.37	946.02	10299.15	946.03	10318.43	946.3
10328.51	946.25	10344.59	946.31	10367.73	946.41	10371.08	946.39	10390.83	946.22
10400.42	946.31	10417.2	946.28	10434.08	946.51	10442.82	946.61	10452.32	946.5
10473.18	946.51	10478.32	946.48	10483.66	946.47	10496.66	946.66	10516.95	946.57
10520.3	946.61	10522.45	946.61	10535.14	947.19	10539.22	947.23	10551.7	947
10561.99	947.16	10573.68	947.19	10578.91	947.15				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9578.07	.05	9975.22	.048	10151.27	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.22	10151.27		487.67	521.92	555.24	.1 .3

CROSS SECTION OUTPUT Profile #100-Year

* E.G. Elev (ft)	*	946.42	* Element	*	Left OB	*	Channel	*	Right OB *
* Vel Head (ft)	*	0.21	* Wt. n-Val.	*	0.050	*	0.048	*	0.050 *
* W.S. Elev (ft)	*	946.21	* Reach Len. (ft)	*	487.67	*	521.92	*	555.24 *
* Crit W.S. (ft)	*		* Flow Area (sq ft)	*	20.88	*	542.41	*	7.11 *
* E.G. Slope (ft/ft)	*	0.003241	* Area (sq ft)	*	20.88	*	542.41	*	7.11 *
* Q Total (cfs)	*	2051.00	* Flow (cfs)	*	20.47	*	2028.07	*	2.45 *
* Top Width (ft)	*	312.47	* Top Width (ft)	*	59.15	*	174.42	*	78.90 *
* Vel Total (ft/s)	*	3.60	* Avg. Vel. (ft/s)	*	0.98	*	3.74	*	0.35 *
* Max Chl Dpth (ft)	*	4.87	* Hydr. Depth (ft)	*	0.35	*	3.11	*	0.09 *
* Conv. Total (cfs)	*	36028.1	* Conv. (cfs)	*	359.6	*	35625.4	*	43.1 *
* Length Wtd. (ft)	*	521.26	* Wetted Per. (ft)	*	59.18	*	175.52	*	78.95 *
* Min Ch El (ft)	*	941.34	* Shear (lb/sq ft)	*	0.07	*	0.63	*	0.02 *
* Alpha	*	1.07	* Stream Power (lb/ft s)	*	10578.91	*	0.00	*	0.00 *
* Frctn Loss (ft)	*	1.78	* Cum Volume (acre-ft)	*	0.49	*	5.88	*	0.07 *
* C & E Loss (ft)	*	0.01	* Cum SA (acres)	*	1.47	*	1.73	*	0.66 *

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31
REACH: A56 RS: 0.055

INPUT
Description:
Station Elevation Data num= 107

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9565.03	945	9565.86	944.9	9575.58	944	9583.56	943.94	9604.42	944.24
9616.05	943.86	9632.45	943.9	9638.37	943.9	9646.44	944.06	9653.54	944.32
9685.89	944.01	9686.18	944	9687.29	944.02	9699.58	944.18	9708.46	942.5
9709.85	942.2	9710.5	942.26	9724.17	944.1	9734.73	944.77	9736.06	944.87
9736.55	944.85	9738.59	944.87	9778.04	944.15	9782.18	944.22	9812.44	945.11
9814.34	945.11	9817.6	945.01	9828.92	944.3	9843.28	944.75	9846.34	944.77
9848.62	944.79	9862.95	944.8	9890.81	944.19	9894.89	944.13	9895.6	944.13
9899.42	944.21	9912.55	944.61	9918.81	944.75	9925.28	944.8	9932.32	944.25
9933.25	944.25	9936.87	944.25	9956.52	944.74	9957.93	944.6	9959.86	943.98
9965.23	942.02	9970.42	940.22	9972.89	939.26	9978.9	939.29	9979.9	939.27
10003.49	938.41	10004.82	938.47	10009.39	939.17	10016.85	939.86	10027.87	939.01
10031.21	940.26	10038.31	941.95	10041.52	941.94	10049.98	940.95	10059.18	941.79
10074.17	944.39	10074.63	944.39	10075.21	944.42	10076.8	944.44	10095.91	944.66
10100.56	944.71	10102.99	944.81	10115.55	944.52	10132.22	944.41	10140.59	944.19
10163.33	944.74	10172.56	944.96	10174.47	945.1	10177.45	945.1	10177.67	945
10197.21	945.03	10212.78	945.17	10217.1	945.21	10220.1	945.03	10234.75	945.05
10248.02	945.41	10253.13	945.26	10261.96	944.51	10264.89	944.48	10279.73	944.37
10286.86	944.37	10308.75	944.35	10341.61	944.71	10343.86	944.71	10344.77	944.75

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10353.03  945.0610367.81  945.4410376.57  945.6510384.49  946.7310388.55  947.07
10401.47  946.28 10410.1  946.1610420.73  946.06 10435.3   946.410454.45  946.24
10459.06  946.2410465.31  946.3110470.65  946.3910501.54  946.6310509.52  946.72
 10518.7  947.1310534.97  947.09

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9565.03     .05 9959.86    .04810074.17     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9959.8610074.17              0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  944.64  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.31  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  944.33  * Reach Len. (ft)         *          *          *          *
* Crit W.S. (ft)          *  942.39  * Flow Area (sq ft)       *   67.06  *  439.07  *    4.04  *
* E.G. Slope (ft/ft)      *0.003606  * Area (sq ft)            *   67.06  *  439.07  *    4.04  *
* Q Total (cfs)           * 2051.00  * Flow (cfs)              *   62.52  * 1986.32  *    2.17  *
* Top Width (ft)          *  341.28  * Top Width (ft)          *  202.83  *  113.95  *   24.51  *
* Vel Total (ft/s)        *    4.02  * Avg. Vel. (ft/s)        *    0.93  *    4.52  *    0.54  *
* Max Chl Dpth (ft)       *    5.92  * Hydr. Depth (ft)        *    0.33  *    3.85  *    0.16  *
* Conv. Total (cfs)       * 34155.4  * Conv. (cfs)             *  1041.1  * 33078.2  *    36.1  *
* Length Wtd. (ft)        *          * Wetted Per. (ft)        *  203.25  *  115.65  *   24.51  *
* Min Ch El (ft)          *  938.41  * Shear (lb/sq ft)        *    0.07  *    0.85  *    0.04  *
* Alpha                   *    1.23  * Stream Power (lb/ft s)  *10534.97  *    0.00  *    0.00  *
* Frctn Loss (ft)         *          * Cum Volume (acre-ft)    *          *          *          *
* C & E Loss (ft)         *          * Cum SA (acres)          *          *          *          *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 2.421

INPUT
Description: Butterfly Road
Station Elevation Data    num=     110
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9688.03    1082    9692 1082.07  9697.4 1081.98 9702.93 1081.92 9707.31 1081.87
 9713.86 1081.82 9722.14 1081.53 9723.98 1081.47  9724.8 1081.46  9726.9 1081.42
 9735.73 1081.21 9739.15 1081.14 9746.66  1081.2 9746.88 1081.19 9757.59 1080.82
 9761.89 1080.68 9768.53 1080.66 9771.62 1080.69 9779.46 1080.72 9785.66 1080.84
 9790.39 1080.96 9792.22 1080.92 9796.37  1080.9 9801.32 1080.88 9805.25 1080.88
 9812.26    1081 9814.97 1080.95 9821.11 1080.95 9823.19 1080.97 9824.84 1080.99
 9834.12 1081.13 9844.43 1081.31 9845.06 1081.32 9845.85  1081.3 9852.88  1081.1
 9855.99  1081.1 9864.02 1080.96 9866.92 1080.92 9868.05 1080.93 9870.59 1080.93
 9875.63 1080.95 9877.85 1080.94 9883.61 1080.84 9888.79 1080.74 9890.79 1080.77
 9895.33 1080.89 9899.72    1081 9903.19 1080.92 9910.65 1080.81 9920.07 1080.48
 9921.12 1080.44 9921.59 1080.43 9922.78 1080.41 9932.52 1080.23 9936.29 1080.19
 9943.45 1080.28 9944.81 1080.29 9954.38 1080.22 9961.96 1080.26 9965.32 1080.31
 9969.56 1080.24  9974.2 1080.28 9976.25 1080.26 9981.78 1080.61 9985.09 1079.97
 9992.58 1078.52 9995.03 1078.24 9996.71    1078   10000 1078.5210001.39 1078.74
10009.05 1080.0310011.47 1080.3110013.67 1080.5610019.04 1081.1710019.98 1081.24
10020.73 1081.2210030.91 1080.6710040.31 1080.9610041.85 1080.9910043.78 1081.01
10050.02 1080.9810052.78 1080.99 10059.9 1080.8210063.71 1080.7210065.19 1080.71
10068.52 1080.6910074.64 1080.6310076.44 1080.6110084.79 1080.6410085.28 1080.65
10085.52 1080.6510086.22 1080.6510093.39 1080.6610095.87 1080.6610100.98 1080.69
10106.45 1080.7910109.11 1080.8210116.78 1080.9910116.97    108110117.03    1081
10124.83 1080.8710127.61 1080.8610132.69 1080.77 10138.2 1080.7710150.81  1080.9
10151.04  1080.910151.07 1080.8810158.61 1079.4710164.72 1081.5310167.51 1081.79

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9688.03     .05 9981.78    .04810013.67     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9981.7810013.67            348.96  354.07  350.38             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1081.56  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.29  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1081.27  * Reach Len. (ft)         *  348.96  *  354.07  *  350.38  *
* Crit W.S. (ft)          * 1081.26  * Flow Area (sq ft)       *  122.48  *   63.25  *   74.93  *
* E.G. Slope (ft/ft)      *0.015032  * Area (sq ft)            *  122.48  *   63.25  *   74.93  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  298.15  *  375.56  *  171.29  *
* Top Width (ft)          *  425.77  * Top Width (ft)          *  243.61  *   31.89  *  150.27  *
* Vel Total (ft/s)        *    3.24  * Avg. Vel. (ft/s)        *    2.43  *    5.94  *    2.29  *
* Max Chl Dpth (ft)       *    3.27  * Hydr. Depth (ft)        *    0.50  *    1.98  *    0.50  *
* Conv. Total (cfs)       *  6892.2  * Conv. (cfs)             *  2431.8  *  3063.2  *  1397.1  *
* Length Wtd. (ft)        *  351.04  * Wetted Per. (ft)        *  243.66  *   32.32  *  150.77  *
* Min Ch El (ft)          * 1078.00  * Shear (lb/sq ft)        *    0.47  *    1.84  *    0.47  *
* Alpha                   *    1.79  * Stream Power (lb/ft s)  *10167.51  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.29  * Cum Volume (acre-ft)    *   27.79  *   27.23  *   25.61  *
* C & E Loss (ft)         *    0.06  * Cum SA (acres)          *   35.13  *   11.81  *   34.65  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 2.354
```

```
INPUT
Description:
Station Elevation Data    num=      136
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9479.61 1078.15 9480.22 1078.15 9484.95 1078.18 9490.22 1078.22 9494.95 1078.18
 9499.68 1078.33 9504.95 1078.28 9510.22 1078.27 9514.95 1078.13 9519.68 1078.06
 9524.95 1078.04 9530.22 1078.08 9534.95 1078.08 9540.22 1078.14 9544.95 1078.43
 9549.68 1078.45 9554.95 1078.48 9560.22 1078.69 9564.95 1078.58 9569.68 1078.45
 9574.95 1078.33 9580.22 1077.81 9584.95  1077.5 9589.68 1077.38 9594.95 1077.31
 9600.22 1077.54 9604.95 1077.83 9610.22 1077.88 9614.95 1077.91 9619.68 1077.92
 9624.95 1077.93 9630.22 1077.98 9634.95 1078.05 9639.68 1078.07 9644.95  1078.1
 9650.22 1078.06 9654.95 1077.94 9659.68 1077.97 9668.56 1077.76 9676.58  1077.4
 9686.32 1076.94 9688.85 1076.46 9694.31 1075.48 9695.25 1075.19 9708.28 1077.36
 9709.07  1077.5  9709.2  1077.5 9709.53 1077.49 9724.95 1077.01 9730.22 1077.16
 9734.95 1077.13 9739.68 1077.27 9744.95 1077.38 9750.22 1077.61 9754.95 1077.68
 9759.68 1077.63 9764.95 1077.47 9770.22 1077.48 9774.95 1077.56 9779.68  1077.6
 9784.95 1077.57 9790.22 1077.65 9794.95 1077.66 9800.06 1077.67 9800.31 1077.67
 9805.23 1077.66 9807.63 1077.68  9814.6 1077.54  9815.8 1077.52 9823.36 1077.69
 9826.38 1077.67 9831.23 1077.44 9836.96 1077.31 9845.32 1077.01 9847.53 1076.92
 9854.83 1077.15 9858.11  1077.2 9864.82 1077.08 9868.68 1076.99 9876.04 1077.25
 9878.43 1077.35 9879.26 1077.36 9880.95 1077.47 9889.84 1077.77 9897.08  1077.4
 9900.41 1077.34 9902.04 1077.32 9906.76 1077.39 9910.99 1077.47 9913.21 1077.47
 9921.56 1077.62 9929.33 1077.51 9932.14 1077.46 9937.48 1077.44 9941.38 1077.45
 9942.72 1077.45 9945.46 1077.43 9953.29 1077.42 9959.95 1077.08 9966.63 1076.67
 9971.21 1076.38 9976.26 1076.72 9985.02 1077.67   10000 1075.6510000.26 1075.61
10000.36  1075.610000.45 1075.61 10008.6 1077.0210011.291077.47810012.18 1077.63
10016.75 1077.68 10026.1 1077.6610027.32 1077.6110029.65 1077.62 10037.9  1077.6
10042.23 1077.5910048.47 1077.5610051.52 1077.5810059.05 1077.3210060.37 1077.34
10069.63 1077.4910074.49 1077.45 10080.2  1077.410090.61  1077.410090.78  1077.4
10091.09 1077.4110101.35 1077.6810106.59 1077.7110111.93  1077.810121.81  1077.9
10122.51 1077.9110122.87 1077.9110133.08 1077.9210138.06 1078.0810140.11 1078.11
10145.31 1078.26

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9479.61     .05 9695.25    .048  9709.2     .05 9953.29    .04810011.29     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9953.2910011.29            623.76  633.69  628.21             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*******************************************************************************************
* E.G. Elev (ft)         * 1078.22  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.08  * Wt. n-Val.              *   0.050  *    0.048  *   0.050  *
* W.S. Elev (ft)         * 1078.14  * Reach Len. (ft)         *  623.76  *   633.69  *  628.21  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *  260.01  *    78.41  *   65.50  *
* E.G. Slope (ft/ft)     *0.006392  * Area (sq ft)            *  260.01  *    78.41  *   65.50  *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *  510.14  *   236.20  *   98.66  *
* Top Width (ft)         *  589.17  * Top Width (ft)          *  401.46  *    58.00  *  129.71  *
* Vel Total (ft/s)       *    2.09  * Avg. Vel. (ft/s)        *    1.96  *     3.01  *    1.51  *
* Max Chl Dpth (ft)      *    2.95  * Hydr. Depth (ft)        *    0.65  *     1.35  *    0.50  *
* Conv. Total (cfs)      * 10569.2  * Conv. (cfs)             *  6380.8  *   2954.3  *  1234.0  *
* Length Wtd. (ft)       *  627.07  * Wetted Per. (ft)        *  401.97  *    58.39  *  129.74  *
* Min Ch El (ft)         * 1075.60  * Shear (lb/sq ft)        *    0.26  *     0.54  *    0.20  *
* Alpha                  *    1.17  * Stream Power (lb/ft s) *10145.31  *     0.00  *    0.00  *
* Frctn Loss (ft)        *    5.25  * Cum Volume (acre-ft)    *   26.26  *    26.65  *   25.05  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)          *   32.55  *    11.44  *   33.52  *
*******************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 2.234

INPUT
Description:
Station Elevation Data    num=      120
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9761.94 1073.28  9764.2 1073.26 9772.33 1073.26    9783 1073.23  9783.7 1073.24
 9784.14 1073.21 9790.95 1073.08 9795.95 1072.98  9801.8 1072.96 9807.76 1072.95
 9817.81 1072.91 9819.56  1072.9 9820.61  1072.9  9827.3 1072.82 9830.23 1072.73
 9833.74 1072.67 9840.04 1072.86 9843.74 1072.93 9849.84 1072.85 9853.74  1072.8
 9859.65 1072.57 9863.75 1072.52 9869.46 1072.56 9873.75 1072.44 9879.26 1072.12
 9883.75  1071.9 9889.07  1072.1 9893.75 1072.05 9898.88 1071.76 9903.75 1071.73
 9908.68 1071.69 9913.76 1071.72 9918.49 1071.75 9923.76 1071.81 9933.55 1071.75
 9945.61 1070.14 9953.67 1071.62 9956.69 1072.07 9962.43 1071.72 9967.52 1071.67
 9973.77 1072.11 9979.47 1071.91 9987.13 1071.91 9990.34 1071.91 9996.44 1070.76
 9997.25 1070.78   10000 1071.0610009.46 1072.0310010.81 1072.1710020.52 1071.99
10023.78  1071.910026.36 1071.9110033.78    107210036.17 1071.9810043.78 1072.02
10045.98 1072.0810053.78 1072.1710055.78  1072.210063.79 1072.1810065.59 1072.17
10073.79 1072.18 10075.4 1072.1810083.79 1072.27 10085.2 1072.2510093.79 1072.14
10095.01 1072.1310103.79 1071.9910104.82 1071.94 10113.8 1071.7110114.62 1071.72
 10123.8 1071.5910124.43 1071.61 10133.8 1071.8910134.24  1071.9 10143.8 1072.23
10144.04 1072.23 10153.8 1072.3410153.85 1072.34 10156.1 1072.3910163.81 1072.55
10173.46 1072.6210173.81 1072.6210181.81 1072.8110182.96 1072.8410183.95 1072.84
10186.17 1072.8510194.66 1072.8910198.45 1072.8610205.37 1072.9510208.34 1072.97
10213.93 1073.0410216.07 1073.0510221.68 1073.0610226.78 1073.1110229.42 1073.15
10236.31  1073.110237.49  1073.110238.22 1073.12 10248.2 1073.3510252.65 1073.46
10258.91  1073.410264.27 1073.4410269.61 1073.4810275.88  1073.410280.32 1073.42
10283.62 1073.4610291.03 1073.5110292.24 1073.5110299.11 1073.5610301.74 1073.49
10306.85  1073.610312.45 1073.5510314.59 1073.56 10320.2  1073.710322.34 1073.77
10323.15  1073.810330.08 1074.0110333.86 1073.9710342.34 1074.0510344.06 1074.05

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9761.94     .05 9933.55    .048 9956.69     .05 9973.77    .04810010.81     .05
```

```
Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
       9973.7710010.81            497.34     500  501.02              .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          * 1072.96  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.16  * Wt. n-Val.              *   0.049  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1072.80  * Reach Len. (ft)         *  497.34  *  500.00  *  501.02  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  117.94  *   42.85  *  115.80  *
* E.G. Slope (ft/ft)      *0.011462  * Area (sq ft)            *  117.94  *   42.85  *  115.80  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  404.57  *  155.99  *  284.44  *
* Top Width (ft)          *  338.28  * Top Width (ft)          *  130.54  *   37.04  *  170.70  *
* Vel Total (ft/s)        *    3.06  * Avg. Vel. (ft/s)        *    3.43  *    3.64  *    2.46  *
* Max Chl Dpth (ft)       *    2.66  * Hydr. Depth (ft)        *    0.90  *    1.16  *    0.68  *
* Conv. Total (cfs)       *  7892.7  * Conv. (cfs)             *  3778.9  *  1457.0  *  2656.8  *
* Length Wtd. (ft)        *  499.39  * Wetted Per. (ft)        *  130.88  *   37.22  *  170.73  *
* Min Ch El (ft)          * 1070.76  * Shear (lb/sq ft)        *    0.64  *    0.82  *    0.49  *
* Alpha                   *    1.08  * Stream Power (lb/ft s)  *10344.06  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.81  * Cum Volume (acre-ft)    *   23.56  *   25.77  *   23.74  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *   28.74  *   10.75  *   31.36  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 2.139

INPUT
Description: Ocotillo Road
Station Elevation Data    num=     115
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9742.83 1070.11 9743.59 1070.12 9750.78 1069.95 9757.42 1069.92 9765.25 1069.83
 9768.32 1069.82 9771.26 1069.69 9779.71 1069.49  9785.1 1069.39 9794.18 1069.18
 9796.85 1069.07 9802.37 1068.88 9807.74 1068.71 9811.58 1068.53  9823.6  1068.4
 9823.85 1068.39 9828.66 1068.31 9838.73 1068.13 9840.29 1068.15 9842.64 1068.13
 9852.05  1068.2 9857.37  1068.2  9864.1  1068.2 9869.98 1068.23 9880.96 1068.15
 9884.67 1068.16 9894.06 1068.17 9897.38 1068.22 9897.75 1068.23 9910.05 1068.42
 9911.74 1068.41 9921.99 1068.55 9924.69 1068.71 9932.54 1068.79 9935.38  1068.7
 9946.94 1069.47 9948.01 1069.43 9948.81 1069.15  9956.8  1065.6 9957.79 1065.88
  9964.7  1068.9 9969.65  1069.9 9972.95 1069.38 9975.03 1068.65 9977.14 1067.91
 9981.64  1066.6 9984.41 1065.97 9988.86 1066.14 9989.67 1066.35 9992.06 1066.94
 9994.98 1067.68 9999.95 1067.35   10000 1067.3510007.15 1067.7510013.22 1068.33
10015.56 1068.5510021.66 1068.3310027.26 1068.3810033.71 1068.1710038.37    1068
10045.09 1068.0210048.53    106810055.62 1067.8610060.47 1067.5910071.27 1066.75
10082.02 1067.9510086.18 1068.1710088.28 1068.1910096.52 1068.0610105.57 1068.38
10106.68 1068.38 10116.1 1068.4810116.89 1068.4910125.19 1068.5110126.35 1068.51
10126.42 1068.5110126.51 1068.5110136.44 1068.5510145.16 1068.4110146.47 1068.43
10147.95 1068.3710156.49 1068.4910158.68 1068.4410166.51 1068.3910173.38 1068.24
10176.53 1068.3810180.12 1068.3110181.62 1068.3110186.76 1068.3410194.47 1068.51
10196.77 1068.5410197.78 1068.5510207.43 1068.66   10214 1068.62 10222.9 1068.56
10227.58 1068.5810230.76 1068.5810246.86 1068.5210247.37 1068.5210249.32  1068.5
10255.11  1068.310263.67 1068.1910265.67 1068.2310266.37 1068.2110268.03 1068.19
10279.41 1068.2510282.91  1068.210295.11 1068.86 10295.8 1068.9110296.11 1068.91
10308.44 1068.9810311.99 1069.1210318.12 1069.6810323.59 1069.9810329.58  1070.3

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************
 9742.83     .05 9946.94     .048 9969.65     .05 9975.03    .04810015.56     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
       9975.0310015.56            398.41  405.78  406.65              .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          * 1069.12  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.              *   0.049  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1069.04  * Reach Len. (ft)         *  398.41  *  405.78  *  406.65  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  121.38  *   69.34  *  214.22  *
* E.G. Slope (ft/ft)      *0.005448  * Area (sq ft)            *  121.38  *   69.34  *  214.22  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  240.68  *  224.29  *  380.03  *
* Top Width (ft)          *  495.06  * Top Width (ft)          *  160.15  *   40.53  *  294.38  *
* Vel Total (ft/s)        *    2.09  * Avg. Vel. (ft/s)        *    1.98  *    3.23  *    1.77  *
* Max Chl Dpth (ft)       *    3.44  * Hydr. Depth (ft)        *    0.76  *    1.71  *    0.73  *
* Conv. Total (cfs)       * 11447.8  * Conv. (cfs)             *  3260.6  *  3038.7  *  5148.5  *
* Length Wtd. (ft)        *  403.16  * Wetted Per. (ft)        *  161.67  *   41.17  *  294.55  *
* Min Ch El (ft)          * 1065.97  * Shear (lb/sq ft)        *    0.26  *    0.57  *    0.25  *
* Alpha                   *    1.22  * Stream Power (lb/ft s)  *10329.58  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.71  * Cum Volume (acre-ft)    *   22.19  *   25.13  *   21.84  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *   27.08  *   10.31  *   28.68  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 2.062

INPUT
Description:
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
```

```
  9719.3 1067.14 9724.26 1067.05 9727.18 1067.03 9730.39 1067.01 9737.19 1067.01
 9743.37 1067.05  9747.2 1067.01 9751.41 1067.03 9757.21 1066.97 9762.48 1066.93
 9767.22  1066.8 9772.04 1066.76 9777.23 1066.81 9782.95 1066.84 9787.25 1066.83
 9791.15 1066.85 9797.26 1066.85 9803.97 1066.88 9807.27 1066.83 9810.27 1066.83
 9817.28 1066.76 9824.99 1066.72 9827.29 1066.72 9829.38 1066.75  9837.3 1066.87
 9838.94  1066.8 9847.31 1066.53 9856.53 1066.23 9857.33 1066.21 9867.04 1065.72
 9867.45 1065.69 9868.13 1065.64 9876.14 1064.98 9881.05 1064.56 9887.13 1062.83
  9887.7 1062.68 9891.68  1063.5 9896.48 1064.41  9897.5 1064.49 9900.93 1064.67
 9907.22 1065.02 9909.08 1065.14 9917.39 1065.37 9919.59 1065.34  9927.4 1065.35
  9934.5 1065.64 9937.42 1065.68 9940.62 1065.71 9947.43 1065.61 9951.13 1065.56
 9957.44 1065.52 9963.18 1065.47 9967.45 1065.38 9972.15 1065.19 9977.46 1064.96
 9982.32 1064.71 9984.32 1064.64 9989.32 1064.44  9998.6 1062.93   10000    1063
 10002.3 1063.1110005.93 1064.1310008.15  1064.210012.78 1064.35 10016.2 1064.49
10020.52 1064.6210027.52  1064.610030.07 1064.8610037.53 1065.5810045.73 1065.71
10047.54 1065.7510049.19 1065.7310057.55 1065.9610066.75 1066.0310067.56 1066.06
10077.26 1066.2410077.57 1066.2510077.86 1066.2410083.77 1066.1910087.59 1066.16
10087.78 1066.16 10097.6 1066.2210098.29 1066.2110107.61 1066.59

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
  9719.3     .05 9887.13    .048 9909.08     .05 9984.32    .04810020.52     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9984.3210020.52           596.87  594.22  587.87             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1066.39  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.23  * Wt. n-Val.              *   0.049  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1066.16  * Reach Len. (ft)         *  596.87  *  594.22  *  587.87  *
* Crit W.S. (ft)         * 1065.78  * Flow Area (sq ft)       *  132.46  *   78.00  *   31.80  *
* E.G. Slope (ft/ft)     *0.008520  * Area (sq ft)            *  132.46  *   78.00  *   31.80  *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *  412.67  *  369.93  *   62.41  *
* Top Width (ft)         *  215.40  * Top Width (ft)          *  126.03  *   36.20  *   53.17  *
* Vel Total (ft/s)       *    3.49  * Avg. Vel. (ft/s)        *    3.12  *    4.74  *    1.96  *
* Max Chl Dpth (ft)      *    3.48  * Hydr. Depth (ft)        *    1.05  *    2.15  *    0.60  *
* Conv. Total (cfs)      *  9154.5  * Conv. (cfs)             *  4470.7  *  4007.7  *   676.1  *
* Length Wtd. (ft)       *  594.61  * Wetted Per. (ft)        *  126.57  *   36.48  *   53.22  *
* Min Ch El (ft)         * 1062.93  * Shear (lb/sq ft)        *    0.56  *    1.14  *    0.32  *
* Alpha                  *    1.22  * Stream Power (lb/ft s) *10107.61  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    4.34  * Cum Volume (acre-ft)   *   21.03  *   24.44  *   20.69  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *   25.77  *    9.95  *   27.06  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 1.950

INPUT
Description:
Station Elevation Data     num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
    9800 1062.27 9805.47 1062.25 9808.41 1062.23 9815.56 1062.26 9817.31 1062.27
 9825.65 1062.03 9826.21 1062.01  9830.4    1062 9835.11 1061.98 9835.74 1061.99
 9836.56 1061.98 9845.83 1061.81 9852.92 1061.89 9855.92 1061.89 9859.84 1061.89
 9866.01    1062 9870.72 1061.94 9876.09 1062.03 9883.12 1061.98 9886.18 1061.97
 9888.52 1061.95 9896.27 1061.93 9897.42 1061.92 9906.06  1061.9 9906.36  1061.9
  9906.4  1061.9 9916.45 1061.66 9924.13 1061.51 9926.54 1061.52 9929.69 1061.38
 9936.62  1061.3 9941.93 1061.29 9946.71 1061.23 9958.83 1059.58 9964.56 1058.78
 9980.28 1059.09  9984.3 1059.23 9987.29  1058.8 9987.74 1058.59 9988.86 1058.05
 9997.08 1056.68   10000 1057.6210005.081059.25710006.05 1059.5710008.69 1060.31
10010.01  1060.910013.51 1061.2110014.43 1061.2810027.42 1062.3810030.95 1062.33
10037.51 1062.4410039.85 1062.36 10047.6 1061.9410048.75 1061.9310057.39  1061.9
10057.65  1061.910057.69  1061.910066.55 1061.8110067.78 1061.8110069.37 1061.71
10077.86 1061.1810084.36  1060.710087.95 1060.3810092.65 1060.4410098.04 1060.58
10102.16 1060.6610108.13 1060.7210111.06 1060.7510118.22 1061.0710127.58 1061.56
10128.31 1061.6110128.86 1061.6310133.05 1061.7510137.77 1061.8910138.39 1061.92
10146.67 1062.1810148.48  1062.210155.57 1061.9910158.57 1061.9510164.47 1062.12
10168.66 1062.2910173.37 1062.3410178.75 1062.1810182.27 1062.1910188.84 1062.24
10191.18 1062.2710198.93 1062.09   10200 1062.09

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************
    9800     .05  9984.3    .04810005.08     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9984.310005.08            498.33  499.32  502.32             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1062.05  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.34  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1061.71  * Reach Len. (ft)         *  498.33  *  499.32  *  502.32  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *   93.30  *   78.83  *   59.20  *
* E.G. Slope (ft/ft)     *0.006311  * Area (sq ft)            *   93.30  *   78.83  *   59.20  *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *  266.64  *  460.98  *  117.39  *
* Top Width (ft)         *  167.28  * Top Width (ft)          *   69.88  *   20.78  *   76.62  *
* Vel Total (ft/s)       *    3.65  * Avg. Vel. (ft/s)        *    2.86  *    5.85  *    1.98  *
* Max Chl Dpth (ft)      *    5.03  * Hydr. Depth (ft)        *    1.34  *    3.79  *    0.77  *
* Conv. Total (cfs)      * 10636.7  * Conv. (cfs)             *  3356.4  *  5802.7  *  1477.6  *
* Length Wtd. (ft)       *  499.50  * Wetted Per. (ft)        *   70.06  *   21.50  *   77.00  *
* Min Ch El (ft)         * 1056.68  * Shear (lb/sq ft)        *    0.52  *    1.44  *    0.30  *
* Alpha                  *    1.63  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.75  * Cum Volume (acre-ft)   *   19.48  *   23.37  *   20.08  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *   24.43  *    9.56  *   26.18  *
*****************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2S2WS7A
REACH: A52 RS: 1.855

INPUT
Description: West Spur Road
Station Elevation Data num= 91

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9754.18	1058.54	9758.71	1058.52	9766.74	1058.49	9768.74	1058.49	9771.06	1058.51
9778.76	1058.52	9785.39	1058.55	9788.79	1058.35	9792.74	1057.85	9798.82	1057.13
9803.59	1056.97	9808.85	1056.51	9813.37	1056.82	9818.88	1057	9825.28	1057.41
9828.91	1057.49	9832.03	1057.62	9838.93	1057.97	9846.96	1057.47	9848.96	1057.49
9850.68	1057.42	9858.99	1057.74	9868.65	1057.35	9869.02	1057.35	9873.56	1057.34
9879.05	1057.33	9887.99	1056.69	9889.07	1056.57	9890.34	1056.55	9899.1	1056.37
9906.64	1057.01	9909.13	1057.32	9915.97	1057.83	9919.16	1057.84	9922.87	1057.99
9929.19	1058.15	9934.62	1057.92	9939.22	1057.89	9944.55	1057.8	9949.24	1057.61
9953.28	1057.48	9959.27	1057.17	9966.24	1057.49	9969.3	1057.78	9971.93	1057.71
9984.36	1057.31	9988.61	1057.17	9990.28	1056.59	9990.82	1056.41	9999.46	1053.52
10000	1053.63	10008.6	1055.46	10015.48	1056.78	10018.29	1057.31	10020.55	1057.52
10027.73	1058.21	10037.22	1057.91	10039.5	1057.73	10046.55	1057.49	10049.53	1057.25
10056.44	1056.44	10063.36	1055.75	10072.87	1056.78	10079.61	1057.67	10083.86	1057.49
10089.64	1057.48	10093.18	1057.66	10099.67	1057.37	10102.51	1057.47	10109.7	1058.04
10111.84	1058.02	10119.72	105	810121.17	1058.02	10129.75	1058.11	10130.49	1058.1
10139.78	1057.98	10139.82	1057.98	10140.36	1057.98	10149.15	1058.02	10149.81	1058.02
10150.58	1058.02	10159.84	1058.2	10167.8	1058.26	10169.86	1058.32	10172.26	1058.29
10179.89	1058.38	10186.46	1058.41	10189.92	1058.47	10195.78	1058.51	10199.95	1058.48
10200.17	1058.49								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9754.18	.05	9984.36	.04	810018.29	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9984.36	10018.29		479.94	482.24	487.28	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	1058.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.24	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	1058.02	Reach Len. (ft)	479.94	482.24	487.28
Crit W.S. (ft)		Flow Area (sq ft)	122.12	80.66	65.82
E.G. Slope (ft/ft)	0.009085	Area (sq ft)	122.12	80.66	65.82
Q Total (cfs)	845.00	Flow (cfs)	269.15	415.92	159.93
Top Width (ft)	326.81	Top Width (ft)	185.02	33.93	107.86
Vel Total (ft/s)	3.15	Avg. Vel. (ft/s)	2.20	5.16	2.43
Max Chl Dpth (ft)	4.50	Hydr. Depth (ft)	0.66	2.38	0.61
Conv. Total (cfs)	8865.5	Conv. (cfs)	2823.8	4363.7	1678.0
Length Wtd. (ft)	481.95	Wetted Per. (ft)	185.31	34.91	108.15
Min Ch El (ft)	1053.52	Shear (lb/sq ft)	0.37	1.31	0.35
Alpha	1.59	Stream Power (lb/ft s)	10200.17	0.00	0.00
Frctn Loss (ft)	3.24	Cum Volume (acre-ft)	18.25	22.46	19.36
C & E Loss (ft)	0.03	Cum SA (acres)	22.97	9.25	25.12

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2S2WS7A
REACH: A52 RS: 1.764

INPUT
Description:
Station Elevation Data num= 130

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9658.28	1056.14	9663.76	1056.13	9669.77	1056.17	9674.18	1056.16	9676.01	1056.13
9684.6	1055.75	9690.74	1055.77	9695.02	1055.86	9705.37	1055.56	9705.43	1055.56
9705.44	1055.56	9705.47	1055.56	9715.86	1055.47	9720.2	1055.42	9726.28	1055.29
9729.61	1055.31	9736.7	1055.18	9740.97	1055.2	9747.12	1055.23	9749.66	1055.22
9757.54	1055.09	9761.85	1055.04	9767.96	1054.88	9776.57	1054.78	9777.97	1054.77
9778.38	1054.77	9786.03	1054.76	9788.8	1054.78	9793.86	1054.64	9799.22	1054.59
9802.15	1054.53	9809.64	1054.31	9812.17	1054.25	9820.06	1054	9826.33	1053.84
9830.62	1053.22	9835.89	1052.45	9843.48	1050.85	9847.68	1051.85	9858.57	1054.05
9861.73	1054.06	9867.51	1053.96	9872.15	1053.87	9874.69	1053.8	9882.57	1053.71
9883.37	1053.74	9892.99	1054.15	9896.98	1054.21	9903.41	1054.29	9911.71	1054.41
9913.83	1054.46	9918.97	1054.29	9924.25	1054.14	9931.12	1054.16	9934.67	1053.99
9941.17	1053.76	9945.09	1053.59	9954.57	1053.76	9955.3	1053.77	9955.51	1053.77
9955.9	1053.8	9965.93	1054.14	9971.42	1054.35	9976.35	1054.43	9985.45	1053.86
9989.16	1053.63	9989.37	1053.62	9990.53	1053.23	9998.26	1050.9	10000	1051.22
10006.53	1052.43	10012.25	1053.67	10013.48	1053.94	10026.28	1054.61	10028.45	1054.74
10035.9	1054.63	10038.87	1054.57	10044.29	1054.38	10049.29	1054.28	10052.02	1054.2
10059.71	1054.04	10061.36	1054.04	10070.13	1054.12	10073.75	1054.11	10080.55	1054.14
10088.48	1054.24	10090.96	1054.27	10096.96	1054.15	10100.38	1054.07	10101.38	1054.07
10108.44	1054.29	10111.8	1054.38	10117.94	1054.39	10122.22	1054.43	10124.56	1054.41
10128.83	1054.51	10133.4	1054.54	10137.84	1054.52	10143.76	1054.72	10144.98	1054.77
10145.9	1054.76	10152.12	1054.67	10158.39	1054.71	10159.27	1054.69	10160.43	1054.7
10166.41	1054.77	10170.89	1054.71	10177.11	1054.7	10180.7	1054.73	10183.38	1054.71
10187.84	1054.75	10193.79	1054.76	10195.88	1054.79	10202.13	1054.85	10208.38	1054.89
10210.47	1054.91	10216.41	1055.01	10220.87	1055.05	10227.14	1055.13	10230.7	1055.15
10233.37	1055.16	10237.84	1055.11	10243.82	1055.09	10245.86	1055.08	10252.13	1055.04
10258.36	1055.14	10259.27	1055.15	10260.5	1055.17	10266.42	1055.24	10270.1	1055.2

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val

```
*******************************************************************************
 9658.28     .05 9835.89    .048 9847.68     .05 9989.16    .04810012.25     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9989.1610012.25            444.34  437.88  431.43            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1055.00  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.14  * Wt. n-Val.              *   0.049  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1054.86  * Reach Len. (ft)         *  444.34  *  437.88  *  431.43  *
* Crit W.S. (ft)          * 1054.46  * Flow Area (sq ft)       *  204.36  *   60.32  *   79.37  *
* E.G. Slope (ft/ft)      *0.005178  * Area (sq ft)            *  204.36  *   60.32  *   79.37  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  500.68  *  249.99  *   94.33  *
* Top Width (ft)          *  434.10  * Top Width (ft)          *  219.51  *   23.09  *  191.50  *
* Vel Total (ft/s)        *    2.46  * Avg. Vel. (ft/s)        *    2.45  *    4.14  *    1.19  *
* Max Chl Dpth (ft)       *    4.01  * Hydr. Depth (ft)        *    0.93  *    2.61  *    0.41  *
* Conv. Total (cfs)       * 11742.9  * Conv. (cfs)             *  6957.9  *  3474.1  *  1310.9  *
* Length Wtd. (ft)        *  439.90  * Wetted Per. (ft)        *  220.20  *   23.77  *  191.58  *
* Min Ch El (ft)          * 1050.90  * Shear (lb/sq ft)        *    0.30  *    0.82  *    0.13  *
* Alpha                   *    1.46  * Stream Power (lb/ft s) *10270.10  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.95  * Cum Volume (acre-ft)    *   16.45  *   21.68  *   18.55  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *   20.74  *    8.93  *   23.45  *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 1.681

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9888.43 1051.99 9891.31 1051.98 9898.38 1051.92 9901.66 1051.66 9908.39 1051.32
 9914.69 1050.81 9918.39 1050.61 9922.34 1050.24  9928.4 1049.83 9934.07 1049.81
  9938.4 1050.07 9943.03 1050.19 9948.41 1050.48 9953.38 1050.59 9958.41  1050.9
 9963.13 1050.94 9968.42 1051.08 9972.82 1051.04 9978.42 1050.96 9987.66 1050.21
 9988.64  1050.1 9991.63 1049.76 9995.78  1048.8  9999.8 1047.78   10000 1047.82
10003.69 1048.5110010.32 1049.6510013.14 1050.1310020.32 1050.7710028.45 1051.34
10030.95 1051.1710038.46 1050.7410046.47 1050.6210048.46 1050.5310050.32 1050.55
10058.47 1050.4810064.84 1050.5810067.46 1050.6110068.48 1050.6210069.12 1050.65
10071.89 1050.7810080.91 1051.22   10083 1051.3310086.33  1051.410090.25 1051.53
10092.71 1051.5810097.51 1051.66 10104.5 1051.7310104.77 1051.7310105.19 1051.74
10112.02 1051.9510112.88 1051.98

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9888.43     .05 9988.64    .04810013.14     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9988.6410013.14            492.4  497.82  503.52            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1052.04  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.29  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1051.75  * Reach Len. (ft)         *  492.40  *  497.82  *  503.52  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   97.66  *   66.48  *   72.29  *
* E.G. Slope (ft/ft)      *0.009045  * Area (sq ft)            *   97.66  *   66.48  *   72.29  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  295.42  *  376.06  *  173.51  *
* Top Width (ft)          *  204.83  * Top Width (ft)          *   88.07  *   24.50  *   92.26  *
* Vel Total (ft/s)        *    3.57  * Avg. Vel. (ft/s)        *    3.02  *    5.66  *    2.40  *
* Max Chl Dpth (ft)       *    3.97  * Hydr. Depth (ft)        *    1.11  *    2.71  *    0.78  *
* Conv. Total (cfs)       *  8885.0  * Conv. (cfs)             *  3106.3  *  3954.2  *  1824.5  *
* Length Wtd. (ft)        *  497.98  * Wetted Per. (ft)        *   88.21  *   24.96  *   92.35  *
* Min Ch El (ft)          * 1047.78  * Shear (lb/sq ft)        *    0.63  *    1.50  *    0.44  *
* Alpha                   *    1.46  * Stream Power (lb/ft s) *10112.88  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.81  * Cum Volume (acre-ft)    *   14.91  *   21.04  *   17.79  *
* C & E Loss (ft)         *    0.06  * Cum SA (acres)          *   19.17  *    8.69  *   22.04  *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 1.587

INPUT
Description: Rainbow Road
Station Elevation Data    num=     135
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
  9692.8 1048.51 9696.48 1048.45  9700.1 1048.39 9710.39 1048.14 9710.42 1048.14
 9710.43 1048.14 9710.44 1048.14 9720.76 1047.83 9726.82  1047.7 9731.09 1047.63
 9738.37 1047.71 9741.43 1047.76 9750.14 1047.81 9751.76 1047.82 9752.33 1047.81
 9762.09 1047.67 9766.29 1047.71 9772.42 1047.76 9780.25  1047.7 9782.76 1047.68
 9789.89 1047.39 9792.43  1047.3 9793.09  1047.3 9806.89 1045.67 9809.55  1045.3
 9817.98 1046.38 9824.09 1047.18 9825.23 1047.25 9829.64 1047.32 9833.43 1047.45
 9834.42 1047.42  9836.1 1047.43 9844.75 1047.55 9849.83 1047.53 9855.08 1047.61
 9864.02 1047.57 9865.41 1047.55 9866.23 1047.57 9869.39  1047.6 9875.75 1047.67
 9877.98 1047.67 9886.08 1047.66 9891.94 1047.63 9896.41 1047.61  9905.9 1047.51
 9906.74 1047.51 9909.14 1047.54 9917.08 1047.67 9923.64 1047.64 9927.41 1047.57
 9933.83 1047.67 9937.74 1047.72 9947.79 1047.64 9948.07 1047.64 9948.24 1047.64
 9948.88 1047.67 9958.41 1047.97 9961.75 1047.92 9968.74 1047.81 9972.84 1047.82
 9979.35 1047.66  9988.9 1047.64 9992.88 1046.42 9998.07 1044.83 9999.36 1044.38
   10000 1044.5510010.531047.40710010.69 1047.4510011.581047.66110012.76 1047.94
```

```
 10012.9 1047.9510014.46 1047.9910030.25 1048.3210030.73 1048.3310034.22 1048.15
10048.98 1047.2410050.81 1046.7710055.42 1046.1110063.02 1044.7510066.82 1045.27
10071.09 1046.4410078.35 1047.3910082.39 1047.61 10087.4 1047.6510092.73 1047.62
10101.36 1047.0910103.06 1046.9710107.88 1046.8710113.39 1046.7610120.45 1047.18
10123.72 1047.4110129.29 1047.4910134.05  1047.610143.25 1047.3810144.39 1047.36
10145.06 1047.3610147.63 1047.4310153.26 1047.5510154.72 1047.7410157.21 1047.63
10165.05 1047.6710171.17 1047.4610175.38  1047.410177.86 1047.2610185.72 1046.71
10187.38 1046.6910194.26 1046.6610196.05 1046.7510202.46 1047.3110206.38 1047.25
10213.05 1047.3810216.71 1047.3410218.86 1047.4210227.05 1047.6310227.13 1047.63
10237.38 1047.6910240.98 1047.6810247.71 1047.6910251.67 1047.6510258.04 1047.62
10266.88 1047.6210268.38 1047.6210276.27 1047.7610278.71  1047.810282.86  1047.8
10289.04 1047.9210292.67 1047.8710299.37 1047.9410306.63 1047.92 10309.7  1047.9
10310.78  1047.910320.04 1047.9410322.63 1047.9710323.75 1047.9910331.04 1048.21

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***************************************************
  9692.8     .05  9988.9    .04810011.58     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9988.910011.58            552.07  549.27  541.36              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1048.17  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.09  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1048.08  * Reach Len. (ft)         *  552.07  *  549.27  *  541.36  *
* Crit W.S. (ft)          * 1047.59  * Flow Area (sq ft)       *  157.73  *   46.33  *  209.51  *
* E.G. Slope (ft/ft)      *0.006551  * Area (sq ft)            *  157.73  *   46.33  *  209.51  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  260.88  *  181.95  *  402.18  *
* Top Width (ft)          *  597.21  * Top Width (ft)          *  276.34  *   22.68  *  298.19  *
* Vel Total (ft/s)        *    2.04  * Avg. Vel. (ft/s)        *    1.65  *    3.93  *    1.92  *
* Max Chl Dpth (ft)       *    3.70  * Hydr. Depth (ft)        *    0.57  *    2.04  *    0.70  *
* Conv. Total (cfs)       * 10440.0  * Conv. (cfs)             *  3223.2  *  2247.9  *  4968.9  *
* Length Wtd. (ft)        *  546.93  * Wetted Per. (ft)        *  276.61  *   23.61  *  298.87  *
* Min Ch El (ft)          * 1044.38  * Shear (lb/sq ft)        *    0.23  *    0.80  *    0.29  *
* Alpha                   *    1.42  * Stream Power (lb/ft s)  *10331.04  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.63  * Cum Volume (acre-ft)    *   13.47  *   20.40  *   16.17  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *   17.11  *    8.42  *   19.79  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 1.483

INPUT
Description:
Station Elevation Data    num=      72
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
  9845.8 1044.27 9848.27 1044.26 9855.67 1044.04    9860 1043.99 9865.77 1043.98
 9870.13 1043.79 9875.86 1043.68 9883.44 1043.61 9885.96 1043.61 9892.38 1043.09
 9902.33 1042.34 9914.32 1040.08  9916.6  1039.6 9919.55 1040.14 9928.41  1041.7
 9937.53 1042.51 9946.53 1043.22 9949.92 1043.23 9956.63 1043.23 9958.78 1043.09
 9966.72 1042.53 9974.32  1042.5 9976.82 1042.51 9977.91 1042.49  9985.1 1042.47
 9990.92 1042.45 9994.15 1041.37 9998.54 1040.25   10000 1040.6210007.01 1042.41
10010.15 1043.0910012.57 1043.0910019.88 1043.08 10027.3 1042.9710029.71 1042.92
 10037.4 1042.8310039.46  1042.810056.12  1042.210060.68 1040.4110063.73 1040.45
10075.15 1043.2310082.28 1043.5810087.87  1043.810094.45 1043.8410097.97 1043.83
10100.63  1043.810108.07 1043.68 10117.9  1043.710118.16  1043.710118.36 1043.71
 10119.8  1043.710128.26 1043.7110129.62 1043.6710138.35 1043.8110141.34 1043.67
10148.45 1043.3110156.21 1042.2510162.37 1041.3710165.94 1041.7610175.57 1042.54
10178.74 1042.8510188.24 1043.2810188.83 1043.2910192.54  1043.410198.93 1043.56
10207.02 1043.8610209.03 1043.9310211.68 1044.0210219.12 1044.2610224.75 1044.31
10229.22 1044.2210230.69 1044.25

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************************************************
  9845.8     .05 9958.78    .04810010.15     .0510060.68    .04810075.15     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9958.7810010.15           531.92  533.45  534.97              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1043.52  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.19  * Wt. n-Val.              *   0.050  *   0.048  *   0.049  *
* W.S. Elev (ft)          * 1043.33  * Reach Len. (ft)         *  531.92  *  533.45  *  534.97  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   88.44  *   59.09  *   95.47  *
* E.G. Slope (ft/ft)      *0.011332  * Area (sq ft)            *   88.44  *   59.09  *   95.47  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  327.08  *  211.91  *  306.01  *
* Top Width (ft)          *  230.24  * Top Width (ft)          *   69.41  *   51.37  *  109.45  *
* Vel Total (ft/s)        *    3.48  * Avg. Vel. (ft/s)        *    3.70  *    3.59  *    3.21  *
* Max Chl Dpth (ft)       *    3.73  * Hydr. Depth (ft)        *    1.27  *    1.15  *    0.87  *
* Conv. Total (cfs)       *  7937.8  * Conv. (cfs)             *  3072.5  *  1990.6  *  2874.7  *
* Length Wtd. (ft)        *  533.29  * Wetted Per. (ft)        *   69.97  *   52.05  *  110.36  *
* Min Ch El (ft)          * 1040.25  * Shear (lb/sq ft)        *    0.89  *    0.80  *    0.61  *
* Alpha                   *    1.01  * Stream Power (lb/ft s)  *10230.69  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.59  * Cum Volume (acre-ft)    *   11.91  *   19.73  *   14.27  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *   14.92  *    7.95  *   17.25  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
          This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION
```

```
RIVER: 2S2WS7A
REACH: A52                RS: 1.382

INPUT
Description:
Station Elevation Data    num=      85
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
    9800 1041.19 9803.74 1041.24 9810.04 1041.18 9813.95 1041.08 9819.92 1041.07
 9824.17 1041.09 9826.95 1041.07 9834.38 1040.92  9835.4 1040.91 9840.29 1040.84
 9843.85 1040.83  9844.6 1040.84 9845.73 1040.77 9854.81 1040.66 9860.76 1040.52
 9865.03 1040.61 9871.53 1040.54 9875.24 1040.54 9884.44  1040.1 9885.45 1040.08
 9886.12 1040.09 9889.32 1040.11 9895.67 1040.14 9897.34 1040.06 9905.88 1039.39
 9910.24 1039.41  9916.1 1039.33 9921.93 1038.79 9929.52 1037.93  9940.8 1035.96
 9941.58  1035.8 9943.31 1036.13 9950.09 1037.57 9954.36 1037.49 9957.61  1037.1
 9967.82 1038.33 9977.39 1039.27 9982.33 1039.32 9992.13 1039.15 9993.11 1039.13
 9996.31 1036.91 9997.17  1036.3 9998.76 1036.66   10000 1036.9310010.48  1039.2
10010.53 1039.2110019.21 1037.5110020.82  1037.210026.48 1036.3110031.73 1035.53
10037.22 1037.6410039.96 1038.6610041.12 1038.7810055.19  1039.6 10059.1 1039.65
10065.08 1039.7910069.32 1039.84 10072.1  1039.910079.53 1040.0310085.44 1040.26
10089.01 1040.4110089.75 1040.3810090.88 1040.3710099.96 1039.9810105.91 1039.93
10110.18  1039.810116.69 1039.8610120.39 1039.8610129.59 1039.7810130.61 1039.78
10131.27 1039.7910134.47 1039.9310140.82 1040.1410142.49 1040.1310151.04 1039.98
 10155.4 1040.2210161.25 1040.29 10168.3 1040.0210171.47  1040.1 10181.2 1040.09
10181.68  1040.1 10183.5 1040.11 10191.9 1040.21 10198.9 1040.12   10200 1040.19

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
    9800     .05 9929.52    .048 9967.82     .05 9992.13    .04810010.48     .05
10026.48    .04810041.12     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9992.1310010.48            503.8     500   496.8             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1039.93  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.17  * Wt. n-Val.              *   0.048  *   0.048  *   0.049  *
* W.S. Elev (ft)          * 1039.76  * Reach Len. (ft)         *  503.80  *  500.00  *  496.80  *
* Crit W.S. (ft)          *           * Flow Area (sq ft)       *  135.80  *   35.59  *   85.22  *
* E.G. Slope (ft/ft)      *0.004454  * Area (sq ft)            *  135.80  *   35.59  *   85.22  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  441.77  *  109.64  *  293.59  *
* Top Width (ft)          *  162.78  * Top Width (ft)          *   91.00  *   18.35  *   53.43  *
* Vel Total (ft/s)        *    3.29  * Avg. Vel. (ft/s)        *    3.25  *    3.08  *    3.45  *
* Max Chl Dpth (ft)       *    4.23  * Hydr. Depth (ft)        *    1.49  *    1.94  *    1.59  *
* Conv. Total (cfs)       * 12661.2  * Conv. (cfs)             *  6619.3  *  1642.8  *  4399.1  *
* Length Wtd. (ft)        *  499.88  * Wetted Per. (ft)        *   91.60  *   19.55  *   54.36  *
* Min Ch El (ft)          * 1036.30  * Shear (lb/sq ft)        *    0.41  *    0.51  *    0.44  *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.13  * Cum Volume (acre-ft)    *   10.54  *   19.15  *   13.16  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *   13.94  *    7.53  *   16.25  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 1.287

INPUT
Description:
Station Elevation Data    num=      76
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
    9800  1038.1 9804.96 1038.21 9809.64 1038.42 9814.96 1038.44 9819.59 1038.59
 9824.96 1038.75 9829.54 1038.68 9834.96 1038.61 9839.48 1038.57 9844.96 1038.46
 9849.43 1038.37 9854.97 1038.25 9859.37 1038.04 9864.97 1037.79 9869.32 1037.55
 9874.97 1037.15 9879.26 1036.92 9888.39 1036.14 9896.19 1035.39 9901.24 1035.56
 9908.55 1035.87 9914.97 1036.18 9919.04 1036.12 9924.97  1036.1 9928.99 1036.03
 9934.97 1035.83 9938.93 1035.78 9944.97 1035.66 9956.59 1036.01 9964.63 1036.12
    9969 1035.98 9974.97 1035.67 9985.26 1035.72 9989.35 1035.76 9992.54 1034.95
 9993.39 1034.74   10000 1033.0910000.56 1032.9510006.93 1035.4910007.631035.745
10010.52  1036.810012.09  1036.810017.22  1036.810024.97 1036.7410028.44 1036.67
10034.97 1036.5410038.39 1036.4510044.97 1036.2810051.62 1035.9310058.82 1035.88
10065.53 1036.0410070.92 1034.0210076.03 1032.1710082.04 1034.1910087.95 1036.33
10094.87 1036.1610101.79 1036.0710107.84 1033.9910112.67 1032.5210116.94 1033.94
10124.48 1036.4510129.95 1036.4110142.13 1036.5910144.97 1036.7110147.78 1036.76
10154.97 1036.6610157.73 1036.6510164.97 1036.6610167.67 1036.7310174.97 1037.17
10177.62 1037.1710184.97 1037.3410187.56 1037.3810194.97 1037.4210197.51 1037.43
   10200 1037.46

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
    9800     .05 9989.35    .04810007.63     .0510070.92    .04810116.94     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9989.3510007.63            476.79  481.71  484.32             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1036.80  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.              *   0.050  *   0.048  *   0.048  *
* W.S. Elev (ft)          * 1036.56  * Reach Len. (ft)         *  476.79  *  481.71  *  484.32  *
* Crit W.S. (ft)          *           * Flow Area (sq ft)       *   72.18  *   40.41  *  125.04  *
* E.G. Slope (ft/ft)      *0.009454  * Area (sq ft)            *   72.18  *   40.41  *  125.04  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  161.40  *  200.00  *  483.60  *
* Top Width (ft)          *  233.05  * Top Width (ft)          *  105.92  *   18.28  *  108.84  *
```

```
* Vel Total (ft/s)        *    3.56  * Avg. Vel. (ft/s)        *    2.24  *    4.95  *    3.87  *
* Max Chl Dpth (ft)       *    4.39  * Hydr. Depth (ft)        *    0.68  *    2.21  *    1.15  *
* Conv. Total (cfs)       *  8690.8  * Conv. (cfs)             *  1660.0  *  2057.0  *  4973.8  *
* Length Wtd. (ft)        *  481.60  * Wetted Per. (ft)        *  106.02  *   19.16  *  111.61  *
* Min Ch El (ft)          * 1032.95  * Shear (lb/sq ft)        *    0.40  *    1.24  *    0.66  *
* Alpha                   *    1.21  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.77  * Cum Volume (acre-ft)    *    9.34  *   18.72  *   11.96  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)          *   12.81  *    7.32  *   15.33  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 1.196

INPUT
Description:
Station Elevation Data    num=      88
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9749.14 1034.35 9749.74 1034.36 9757.23 1033.78 9760.25  1033.8 9766.15 1033.84
 9770.76 1033.77 9773.11 1033.77  9780.4 1033.68 9781.27 1033.67    9789 1033.51
 9791.78 1033.57 9797.21 1033.53 9802.28 1033.44 9804.88 1033.46 9812.79 1033.25
 9812.91 1033.25  9823.3 1033.41 9828.71 1033.29 9833.81 1033.27  9843.8 1033.37
 9844.32 1033.36 9844.59 1033.35 9845.41 1033.31 9854.83 1032.74 9860.47 1032.88
 9865.34  1032.9 9875.08 1032.38 9878.82 1032.13 9880.59 1032.04 9883.86 1031.72
 9892.66  1030.7 9899.21 1031.79 9903.63  1032.4 9917.52 1032.89 9920.91 1032.97
 9922.74 1033.09 9933.62 1033.57  9944.4 1034.09 9945.73 1034.11 9947.74 1033.96
 9959.93  1033.6 9968.05 1033.11 9970.44 1033.03 9985.24 1033.35 9987.31  1033.4
 9987.98 1033.12 9988.23 1033.01 9999.52 1028.42 9999.57  1028.410003.67 1029.94
10011.27 1032.9310014.12 1032.9410018.49 1032.9710024.58 1032.9210031.99 1032.96
10034.13 1032.1210040.29  1029.510049.23 1031.5510054.84 1032.9610062.66 1032.96
10066.96 1033.0410072.96 1033.1510075.54 1033.2310076.77 1033.2910086.05  1033.9
 10092.3    103410096.56 1033.9710105.47 1034.0410106.67 1034.0710107.06 1034.05
10107.83 1034.0510117.57 1034.1210122.56 1034.0910128.08 1034.17 10130.5  1034.1
10137.97 1033.9610138.44 1033.9510138.59 1033.9510138.89 1033.95 10149.1 1033.86
10154.33 1033.8710159.61 1033.8110169.95  1033.610170.12  1033.610170.48  1033.6
10180.63 1033.6510185.48 1033.9410191.14 1034.13

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9749.14     .05 9987.98    .04810014.12     .0510031.99    .04810054.84     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9987.9810014.12            457.73  462.76  465.74             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          * 1034.00  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.13  * Wt. n-Val.              *   0.050  *   0.048  *   0.048  *
* W.S. Elev (ft)          * 1033.87  * Reach Len. (ft)         *  457.73  *  462.76  *  465.74  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  174.19  *   76.51  *  102.61  *
* E.G. Slope (ft/ft)      *0.003871  * Area (sq ft)            *  174.19  *   76.51  *  102.61  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  278.68  *  288.65  *  277.66  *
* Top Width (ft)          *  354.32  * Top Width (ft)          *  220.92  *   26.14  *  107.27  *
* Vel Total (ft/s)        *    2.39  * Avg. Vel. (ft/s)        *    1.60  *    3.77  *    2.71  *
* Max Chl Dpth (ft)       *    5.47  * Hydr. Depth (ft)        *    0.79  *    2.93  *    0.96  *
* Conv. Total (cfs)       * 13581.9  * Conv. (cfs)             *  4479.3  *  4639.6  *  4463.0  *
* Length Wtd. (ft)        *  462.45  * Wetted Per. (ft)        *  221.29  *   27.91  *  108.40  *
* Min Ch El (ft)          * 1028.40  * Shear (lb/sq ft)        *    0.19  *    0.66  *    0.23  *
* Alpha                   *    1.42  * Stream Power (lb/ft s) *10191.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.38  * Cum Volume (acre-ft)    *    7.99  *   18.07  *   10.70  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *   11.02  *    7.07  *   14.12  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 1.108

INPUT
Description:
Station Elevation Data    num=     123
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9774.86 1032.19 9775.92 1032.16 9778.53 1032.09 9779.15 1032.07 9780.18 1032.08
 9786.43 1032.12 9790.25 1032.24 9799.35 1032.23 9801.97 1032.11 9808.25 1031.62
 9813.69 1031.69 9815.52 1031.69 9818.52 1031.69  9822.8 1031.68 9825.41 1031.68
 9836.27 1031.61 9837.13  1031.6 9837.34  1031.6 9837.69 1031.59 9844.62 1031.34
 9848.86 1031.26 9856.85 1030.99 9860.58 1030.85 9866.44 1030.55  9872.3 1030.25
 9876.02 1030.09 9880.99 1029.94 9884.02  1029.8 9895.19 1029.94 9895.53 1029.95
 9895.74 1029.95 9902.81 1030.32 9907.46 1030.57 9914.36 1030.83 9919.19 1031.07
 9926.79 1031.19 9930.91 1031.37 9933.52 1031.38 9942.63 1031.51 9946.45 1031.46
 9952.69  1031.5 9954.35 1031.49 9956.96 1031.47 9966.07 1031.36 9968.27 1031.33
 9973.18 1031.08 9985.69 1030.59 9986.72 1030.15 9992.01 1027.85 9996.44  1025.9
   10000 1027.0710001.89 1027.6910010.63 1030.5210015.49 1030.4910016.56 1030.49
10023.63 1030.6810029.61 1030.6610033.02  1030.510047.81 1030.5910048.28 1030.59
10048.53  1030.610059.85 1030.73 10067.7 1030.84 10070.1 1030.8610071.57 1030.89
10077.66  1030.810083.29 1030.6910084.65 1030.6910086.87 1030.6910095.01 1030.76
10099.19 1030.8410102.62 1030.7110106.19 1030.5810112.41 1030.4510116.36 1030.38
10124.32 1030.1210127.79 1030.1910137.25 1030.6510145.09 1030.2910150.06  1030.2
10157.04 1030.3610167.18 1031.1210167.21 1031.1210167.33 1031.1210177.38 1030.68
10184.39 1030.7210187.55 1030.7810192.14 1030.8310197.72 1030.9310204.62 1031.08
```

```
10207.89 1031.1310210.13 1031.1610218.06 1031.3210222.24 1031.3410227.29 1031.36
10228.23 1031.3510229.59 1031.37 10238.4 1031.3110244.45 1031.3310248.57  1031.3
10254.55 1031.3410258.74 1031.3410261.62 1031.4110268.91 1031.3610277.16 1031.45
10279.08 1031.4810287.36 1031.4810289.25 1031.4810291.99 1031.4310299.42 1031.45
10304.52 1031.7710309.59 1031.82 10313.1 1031.6810319.76 1031.8410329.44 1031.98
10329.93 1031.9810330.26 1031.9810332.08 1031.9610338.84 1031.91 10340.1 1031.89
10341.92 1031.8810350.27 1031.9310352.78 1031.92

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
 9774.86     .05 9985.69    .04810010.63     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9985.6910010.63           533.79  522.18  514.69             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          * 1031.61  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.25  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1031.36  * Reach Len. (ft)         *  533.79  *  522.18  *  514.69  *
* Crit W.S. (ft)          * 1031.23  * Flow Area (sq ft)       *   74.85  *   77.87  *  144.02  *
* E.G. Slope (ft/ft)      *0.007168  * Area (sq ft)            *   74.85  *   77.87  *  144.02  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  153.70  *  417.14  *  274.17  *
* Top Width (ft)          *  375.48  * Top Width (ft)          *  105.81  *   24.94  *  244.72  *
* Vel Total (ft/s)        *    2.85  * Avg. Vel. (ft/s)        *    2.05  *    5.36  *    1.90  *
* Max Chl Dpth (ft)       *    5.46  * Hydr. Depth (ft)        *    0.71  *    3.12  *    0.59  *
* Conv. Total (cfs)       *  9980.7  * Conv. (cfs)             *  1815.4  *  4927.0  *  3238.3  *
* Length Wtd. (ft)        *  524.81  * Wetted Per. (ft)        *  105.89  *   26.65  *  244.81  *
* Min Ch El (ft)          * 1025.90  * Shear (lb/sq ft)        *    0.32  *    1.31  *    0.26  *
* Alpha                   *    1.99  * Stream Power (lb/ft s) *10352.78  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.97  * Cum Volume (acre-ft)    *    6.68  *   17.25  *    9.38  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *    9.30  *    6.80  *   12.24  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 1.009

INPUT
Description:
Station Elevation Data     num=      96
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9720.92 1028.02 9721.75 1028.04 9729.95 1027.93  9738.5 1027.74 9739.95 1027.69
 9741.34 1027.68 9749.95 1027.49 9758.94 1027.62 9759.89 1027.59 9760.93 1027.61
 9769.96 1027.67 9770.73 1027.68 9779.96 1027.46 9780.52 1027.46 9789.96 1027.48
 9799.81 1027.75 9799.96 1027.75 9800.11 1027.75 9806.92 1027.53  9809.9 1027.44
 9809.97 1027.44  9819.7 1027.23 9819.97 1027.22 9829.49 1027.07 9829.97 1027.05
 9839.29 1026.82 9839.97  1026.8 9849.08 1026.98 9849.98 1026.98 9858.88 1026.66
 9859.98 1026.64 9870.13 1026.12 9872.47 1026.13 9883.53  1025.3 9888.89 1024.93
 9897.06    1025 9897.86 1025.03 9909.37 1026.49 9912.22 1026.71 9919.99 1027.04
 9927.44  1027.3 9929.99 1027.39 9937.24  1027.5    9940 1027.59 9947.03 1027.45
    9950 1027.33 9956.82  1026.6    9960 1026.23 9963.55 1025.96 9970.92 1025.17
 9980.65 1025.86 9986.39 1026.27 9988.85 1026.44 9990.89 1025.93   10000 1023.75
10000.18 1023.7110007.91 1025.7210009.79 1026.2610010.48 1026.2910014.27 1026.49
10020.01 1026.7110025.39 1026.6810030.02 1026.5910035.18 1026.5110040.02 1026.51
10044.98 1026.5410050.02  1026.710054.77  1026.910060.02 1027.0110064.57 1026.97
10070.03 1026.9910074.36 1027.0810080.03 1027.3410084.16 1027.1710090.03 1026.81
10096.16 1026.9710101.05 1027.15 10108.8 1027.5610111.68 1027.4710123.57 1027.01
10124.29 1027.0110124.62    102710125.61 1027.0110140.04 1027.1710142.92 1027.21
10150.04 1027.5710152.72 1027.6910160.05 1028.0310162.51 1028.0410170.05 1027.74
10172.31 1027.7710180.05 1027.97 10182.1 1028.0510190.05 1028.18 10191.9 1028.19
10198.36  1028.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
**********************************************
 9720.92     .05 9988.85    .04810014.27     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9988.8510014.27           521.09  524.47  524.96             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          * 1027.62  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.17  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1027.45  * Reach Len. (ft)         *  521.09  *  524.47  *  524.96  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  173.29  *   55.76  *   63.87  *
* E.G. Slope (ft/ft)      *0.007978  * Area (sq ft)            *  173.29  *   55.76  *   63.87  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  477.98  *  255.83  *  111.19  *
* Top Width (ft)          *  319.66  * Top Width (ft)          *  166.28  *   25.42  *  127.96  *
* Vel Total (ft/s)        *    2.88  * Avg. Vel. (ft/s)        *    2.76  *    4.59  *    1.74  *
* Max Chl Dpth (ft)       *    3.74  * Hydr. Depth (ft)        *    1.04  *    2.19  *    0.50  *
* Conv. Total (cfs)       *  9460.4  * Conv. (cfs)             *  5351.3  *  2864.2  *  1244.9  *
* Length Wtd. (ft)        *  523.61  * Wetted Per. (ft)        *  166.63  *   26.08  *  128.02  *
* Min Ch El (ft)          * 1023.71  * Shear (lb/sq ft)        *    0.52  *    1.06  *    0.25  *
* Alpha                   *    1.33  * Stream Power (lb/ft s) *10198.36  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.34  * Cum Volume (acre-ft)    *    5.16  *   16.45  *    8.15  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *    7.63  *    6.50  *   10.04  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION

RIVER: 2S2WS7A
```

```
REACH: A52                RS: 0.910

INPUT
Description:
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
  9853.2 1024.51 9853.33 1024.51 9858.11 1024.58 9863.38 1024.69 9867.25 1024.73
 9873.43 1024.98 9880.98    1025 9883.48 1025.03 9892.15 1024.49 9893.53 1024.45
 9894.66 1024.42 9903.58 1024.15 9905.95  1024.1 9912.93 1023.96 9913.63 1023.95
 9914.48 1023.93 9923.68 1023.92  9931.2 1023.86 9933.73 1023.87 9940.34 1023.76
 9943.78 1023.66 9947.98 1023.64 9953.83 1023.54 9958.61 1023.47 9963.88 1023.81
  9975.1 1023.48 9978.22 1023.54 9979.95 1023.14 9980.05 1023.12 9989.84 1021.25
   10000 1020.7310004.22 1020.5110004.46  1020.5 10004.6 1020.5310011.99 1022.17
10015.49 1022.9510029.88 1022.9510034.23 1022.9210040.84 1022.8610044.28 1022.87
10049.97  1023.110054.33 1023.4210059.11  1023.610064.38 1023.7910068.25 1023.83
10074.43 1023.83 10077.2 1023.8810077.35 1023.8810083.73 1023.6610084.79 1023.65
10085.32 1023.6810092.22 1023.8810096.54 1023.5410099.86 1023.4410103.28 1023.39
10112.82 1023.2710118.64 1023.2610122.53 1023.2910129.97 1022.9110136.55 1022.92
 10141.5  1023.210144.03 1023.2110149.89 1023.1610151.71 1023.1210152.64 1023.07
10155.49 1023.0610163.86 1022.7710166.59 1022.8510171.94  1023.410174.02 1023.65
10175.97 1023.6310189.12 1023.66 10193.7 1023.0910200.86 1022.1510207.28 1021.91
 10212.9  1021.610217.88 1023.04   10224 1025.5710237.91 1025.2110240.95 1025.14
 10242.4  1025.210248.39 1025.3310253.62 1025.4510255.82 1025.4310260.15 1025.57
10264.84 1025.71 10270.7 1025.8510276.06 1025.7810278.13 1025.7310282.21 1025.75
10285.57 1025.7410287.28 1025.7510293.01 1025.76 10298.5 1026.1810304.26 1026.19
10309.72 1026.1510314.78 1026.25

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************
  9853.2     .05 9979.95    .04810015.49     .0510189.12    .04810217.88     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.9510015.49           481.63  490.79  498.29             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1024.28  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.17  * Wt. n-Val.              *   0.050  *   0.048  *   0.049  *
* W.S. Elev (ft)         * 1024.11  * Reach Len. (ft)         *  481.63  *  490.79  *  498.29  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *   27.17  *   92.70  *  192.64  *
* E.G. Slope (ft/ft)     *0.005220  * Area (sq ft)            *   27.17  *   92.70  *  192.64  *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *   29.72  *  389.47  *  425.81  *
* Top Width (ft)         *  315.19  * Top Width (ft)          *   74.66  *   35.54  *  204.99  *
* Vel Total (ft/s)       *    2.70  * Avg. Vel. (ft/s)        *    1.09  *    4.20  *    2.21  *
* Max Chl Dpth (ft)      *    3.61  * Hydr. Depth (ft)        *    0.36  *    2.61  *    0.94  *
* Conv. Total (cfs)      * 11695.2  * Conv. (cfs)             *   411.4  *  5390.5  *  5893.3  *
* Length Wtd. (ft)       *  493.90  * Wetted Per. (ft)        *   74.73  *   36.01  *  205.63  *
* Min Ch El (ft)         * 1020.50  * Shear (lb/sq ft)        *    0.12  *    0.84  *    0.31  *
* Alpha                  *    1.46  * Stream Power (lb/ft s) *10314.78  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.14  * Cum Volume (acre-ft)    *    3.96  *   15.55  *    6.60  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)          *    6.19  *    6.13  *    8.04  *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.817

INPUT
Description:
Station Elevation Data    num=     112
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9941.26 1021.54 9942.69 1021.57  9951.6 1021.47 9956.75 1021.28 9961.94 1021.22
 9970.81 1020.44 9972.29 1020.32 9973.77 1020.27 9981.65    1020 9984.58 1019.89
 9991.29 1018.62  9994.6 1018.02   10000 1017.7510002.98  1017.610008.37 1017.38
10012.02 1017.8310013.72 1018.0410024.55 1019.3710030.14  1020.110038.59 1020.84
10044.69  1020.910054.61 1020.8710055.04 1020.8610055.19 1020.8610065.38 1020.76
10069.25 1020.6910075.73  1020.510083.32 1020.6110086.07  1020.610093.73 1020.82
10096.41 1020.8910104.03 1021.0310106.76 1021.0510111.44 1021.11 10117.1 1021.22
 10125.5 1021.2610127.44 1021.2810128.57 1021.2710132.84 1021.2910136.74 1021.29
10136.77 1021.2910137.87 1021.3210138.24 1021.3310139.02 1021.3110145.72 1021.26
10148.99 1021.21 10153.2 1021.1810160.11 1020.9510160.68 1020.9310161.85 1020.88
10168.16 1020.7110171.24 1020.5110175.64 1020.35 10185.7 1020.0210192.16  1019.7
10195.14  1018.610196.91  1017.810205.76 1017.7210207.43 1017.7110209.43 1018.19
10219.31 1020.9910232.91 1021.8210235.48 1022.0510237.98 1022.1110242.96 1022.13
 10249.1 1022.3310250.44 1022.3210253.18  1022.210257.92 1021.8710260.23 1021.91
 10265.4 1021.9710271.35 1022.0110276.01 1021.9810282.47 1021.9210287.84 1022.01
 10293.6 1022.1110298.84 1022.13 10302.8 1022.1510304.72 1022.1410310.28 1022.26
10315.84 1022.3710321.68 1022.2110325.23 1022.0810326.97    102210332.71 1021.79
10338.09 1021.8510340.19 1021.8710344.51    102210349.21 1022.1810355.15 1022.21
10360.34 1021.9510362.63 1022.0310367.34 1022.0710370.11 1022.1310371.46 1022.16
10377.59 1022.4910382.59 1022.5910385.07 1022.6910390.17 1022.9110393.71 1023.06
10400.03 1022.9810404.83  1023.110407.51 1023.1610413.01 1023.2210415.96 1023.21
10418.76 1023.1910427.08 1023.0710429.95 1023.1110435.84 1023.2510437.43  1023.3
 10438.2 1023.29 10439.4 1023.29

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************
 9941.26     .05 9973.77    .04810030.14     .05 10185.7    .04810219.31     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.7710030.14           521.21   518.1  511.46             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1021.13  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.27  * Wt. n-Val.              *   0.050  *   0.048  *   0.048  *
* W.S. Elev (ft)         * 1020.85  * Reach Len. (ft)         *  521.21  *  518.10  *  511.46  *
```

```
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *    2.50  *  117.42  *   86.82  *
* E.G. Slope (ft/ft)      *0.007936  * Area (sq ft)            *    2.50  *  117.42  *   86.82  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *    3.13  *  525.91  *  315.96  *
* Top Width (ft)          *  169.10  * Top Width (ft)          *    7.67  *   56.37  *  105.07  *
* Vel Total (ft/s)        *    4.09  * Avg. Vel. (ft/s)        *    1.25  *    4.48  *    3.64  *
* Max Chl Dpth (ft)       *    3.47  * Hydr. Depth (ft)        *    0.33  *    2.08  *    0.83  *
* Conv. Total (cfs)       *  9485.5  * Conv. (cfs)             *    35.2  *  5903.6  *  3546.7  *
* Length Wtd. (ft)        *  516.07  * Wetted Per. (ft)        *    7.69  *   56.73  *  105.93  *
* Min Ch El (ft)          * 1017.38  * Shear (lb/sq ft)        *    0.16  *    1.03  *    0.41  *
* Alpha                   *    1.04  * Stream Power (lb/ft s) *10439.40  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.71  * Cum Volume (acre-ft)    *    3.80  *   14.37  *    5.01  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *    5.74  *    5.61  *    6.26  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.719

INPUT
Description:
Station Elevation Data    num=     123
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
    9800 1019.09 9802.51 1019.04 9808.83 1018.97 9814.36 1019.06 9818.94 1019.04
  9826.2 1018.98 9829.05 1018.97 9838.05 1018.84 9839.16 1018.82 9845.57 1018.76
 9849.26 1018.73  9857.6 1018.62 9859.37 1018.57 9861.75 1018.51 9869.48 1018.33
 9873.59 1018.28 9879.59 1018.13 9884.04 1017.99 9889.69 1017.65 9897.29  1017.3
  9899.8 1017.22 9909.14 1017.25 9909.91 1017.24 9910.48 1017.22 9914.38 1016.94
 9920.01 1016.63 9920.99 1016.63 9930.12 1016.75 9932.83 1016.73 9940.23 1016.65
 9944.68 1016.49 9950.34  1016.6 9956.53 1016.28 9960.44 1016.27 9968.38 1015.67
 9970.55  1015.4 9975.47 1015.51 9977.36 1015.57 9985.08  1015.8  9989.2 1014.35
 9990.17  1014.1   10000 1013.5710000.66 1013.5310003.18  1013.410004.33 1013.62
10017.07    101610021.09 1016.7510025.05 1016.79 10031.2 1016.5310039.46 1016.86
 10041.3 1016.9210051.31 1017.4510051.41 1017.4510051.48 1017.4510051.98 1017.45
 10060.3 1017.4110061.52 1017.4210063.16 1017.3810071.62 1017.2510075.01  1017.1
10081.73 1016.7110086.73 1016.8810091.84 1016.3810095.55 1016.0410102.77 1015.14
 10109.5 1014.1110113.46 1015.0710126.13 1017.0810127.53 1017.1210139.61 1017.62
10142.38 1017.8110148.42 1018.4310152.48 1018.6610157.24 1018.7210162.59 1018.83
10162.59 1018.8410169.79 1018.82 10172.7  1018.810174.86 1018.7710182.81 1018.76
10183.67 1018.7310189.59 1018.7510192.49 1018.7510192.91 1018.7410193.49 1018.73
10203.02 1018.5810205.33 1018.5710213.13 1018.4110218.92 1018.4110223.23  1018.4
10229.03 1018.4610233.34 1018.4510240.88 1018.3810243.45 1018.3910252.72 1018.31
10253.56 1018.3110254.18  1018.310258.39  1018.310263.66 1018.3110264.57 1018.29
10273.77  1018.310276.42 1018.2510283.88 1018.1110288.27 1017.9910293.99  1017.9
10300.12 1017.8310304.09 1017.7710311.96  1017.4 10314.2 1017.2710315.97 1017.24
10326.48  1017.110327.23  1016.910332.74 1015.5410333.69 1015.49 10339.9 1015.03
10347.18  1016.810349.07 1017.2910352.08 1017.4610364.74 1018.11 10371.2  1018.2
10374.84 1018.2510377.55 1018.1610378.48 1018.13

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************************
    9800     .05 9985.08    .04810017.07     .0510326.48    .04810347.18     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9985.0810017.07           495.06  500.42  504.78             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          * 1017.41  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.              *   0.050  *   0.048  *   0.049  *
* W.S. Elev (ft)          * 1017.17  * Reach Len. (ft)         *  495.06  *  500.42  *  504.78  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   62.27  *   90.20  *  103.84  *
* E.G. Slope (ft/ft)      *0.006551  * Area (sq ft)            *   62.27  *   90.20  *  103.84  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  133.57  *  446.03  *  265.40  *
* Top Width (ft)          *  217.16  * Top Width (ft)          *   73.87  *   31.99  *  111.30  *
* Vel Total (ft/s)        *    3.30  * Avg. Vel. (ft/s)        *    2.14  *    4.95  *    2.56  *
* Max Chl Dpth (ft)       *    3.77  * Hydr. Depth (ft)        *    0.84  *    2.82  *    0.93  *
* Conv. Total (cfs)       * 10440.2  * Conv. (cfs)             *  1650.3  *  5510.8  *  3279.1  *
* Length Wtd. (ft)        *  501.77  * Wetted Per. (ft)        *   73.95  *   32.53  *  112.32  *
* Min Ch El (ft)          * 1013.40  * Shear (lb/sq ft)        *    0.34  *    1.13  *    0.38  *
* Alpha                   *    1.44  * Stream Power (lb/ft s) *10378.48  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.75  * Cum Volume (acre-ft)    *    3.41  *   13.14  *    3.89  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)          *    5.25  *    5.09  *    4.99  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.624

INPUT
Description:
Station Elevation Data    num=     105
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
 9892.64 1014.93 9897.51 1014.96 9898.49 1014.96 9899.06 1014.96 9909.16 1014.84
 9913.77 1014.75 9919.83 1014.65 9926.15 1014.53 9929.81 1014.43 9932.12 1014.33
 9942.12 1013.96 9950.09 1014.16 9951.85 1014.14 9954.79 1014.25 9962.52 1014.53
 9966.54 1014.35 9980.01 1013.75 9980.02 1013.74 9988.08 1011.45 9989.04 1011.21
 9990.66 1011.19   10000  1011.110006.91 1011.0310015.16 1012.2410016.59 1012.45
10022.35  1013.310031.67 1014.0410037.22 1014.4710040.71 1014.4910047.89 1014.37
10052.15 1014.4710058.56 1014.5310069.16 1014.5710069.23 1014.5710069.35 1014.58
10079.91 1015.0910086.17 1015.1110090.58 1015.0210092.59 1015.0210097.99 1014.95
10101.25 1014.8810103.18 1014.8910111.92  1014.810120.19 1014.6110122.59 1014.59
```

```
10126.63 1014.5410133.26 1014.4510139.24 1014.4410143.93 1014.4510154.21 1014.37
10154.61 1014.3710155.27 1014.3610162.56 1014.1910165.28 1014.1510170.34 1014.05
10175.95 1013.9310183.91 1013.9210186.62 1013.8910188.23 1013.9210197.29 1013.86
10201.44 1014.0110207.97 1014.1210212.55 1014.1610218.64 1014.2210222.25 1014.32
10229.31 1014.4310239.26 1014.3410239.98 1014.3410241.19 1014.3410250.65  1014.3
10256.27 1014.3510261.32 1014.3910269.83 1014.7310271.41 1014.7910271.99 1014.78
10273.28 1014.7910282.67 1014.7110290.29 1014.9710293.34 1015.0210294.73 1015.02
10298.47 1014.8510304.01 1014.68 10307.3 1014.7310314.68 1014.7810324.31 1014.51
10325.35 1014.5110327.11 1014.4810336.02 1014.3810349.14 1014.04   10351    1014
10351.48 1013.9410364.27 1012.1410370.51 1012.2910371.03 1012.24 10382.2 1010.94
10383.71 1011.0610388.89 1011.2410390.16 1011.2910390.54  1011.310402.65 1013.23
10410.56  1014.3 10416.1 1014.38 10426.9 1014.5510432.07 1014.5710441.67  1014.6

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************
 9892.64     .05 9962.52    .04810037.22     .0510336.02    .048 10416.1     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9962.5210037.22              331  326.37  321.14             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1014.63  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.12  * Wt. n-Val.              *   0.050  *   0.048  *   0.048  *
* W.S. Elev (ft)         * 1014.51  * Reach Len. (ft)         *  331.00  *  326.37  *  321.14  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *   10.16  *  131.09  *  175.21  *
* E.G. Slope (ft/ft)     *0.004666  * Area (sq ft)            *   10.16  *  131.09  *  175.21  *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *    9.02  *  402.74  *  433.23  *
* Top Width (ft)         *  364.27  * Top Width (ft)          *   35.12  *   74.26  *  254.89  *
* Vel Total (ft/s)       *    2.67  * Avg. Vel. (ft/s)        *    0.89  *    3.07  *    2.47  *
* Max Chl Dpth (ft)      *    3.57  * Hydr. Depth (ft)        *    0.29  *    1.77  *    0.69  *
* Conv. Total (cfs)      * 12371.1  * Conv. (cfs)             *   132.1  *  5896.3  *  6342.7  *
* Length Wtd. (ft)       *  325.14  * Wetted Per. (ft)        *   35.13  *   74.85  *  255.36  *
* Min Ch El (ft)         * 1011.03  * Shear (lb/sq ft)        *    0.08  *    0.51  *    0.20  *
* Alpha                  *    1.07  * Stream Power (lb/ft s)  *10441.67  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.50  * Cum Volume (acre-ft)    *    3.00  *   11.86  *    2.27  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)          *    4.63  *    4.48  *    2.87  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.562

INPUT
Description:
Station Elevation Data    num=     159
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*****************************************************************************
 9738.65 1013.28 9740.34 1013.26 9747.79 1013.19 9749.36 1013.17 9757.86 1013.05
 9758.38 1013.01 9762.94 1012.76 9767.41 1012.51 9767.93  1012.5 9776.43 1012.55
 9777.99  1012.5 9785.46  1012.2 9788.74 1012.07 9796.16 1011.79 9807.58 1011.19
 9812.38 1011.05 9815.18    1011 9821.15 1010.74 9823.33 1010.21 9828.66 1008.99
 9837.63 1010.47 9839.37  1010.6 9840.46 1010.51 9849.01 1010.45 9857.34  1009.1
 9857.45 1009.11 9857.68 1009.15 9870.77 1010.68 9875.93 1010.54 9879.25 1010.33
 9886.22 1008.19 9887.26 1008.42 9892.61  1010.5 9904.72 1011.32 9908.85 1011.59
 9911.81 1011.52 9918.92 1011.59 9927.89  1011.4 9928.99 1011.39 9929.86 1011.41
 9937.38 1011.28 9938.88 1011.25 9939.05 1011.25 9939.27 1011.26 9949.12 1011.49
 9956.93 1011.55 9959.19 1011.47 9972.09 1011.88 9972.47  1011.9 9972.99  1011.8
 9977.59 1010.81 9986.22 1008.96   10000 1008.7610002.39 1008.73 10004.2 1008.73
10004.81 1008.8810018.26 1011.6910018.48 1011.69 10021.7 1011.6410029.65 1011.46
10038.15 1011.4910039.72 1011.5310047.18 1011.8310049.78 1011.8810053.07 1012.02
10059.85  1012.410065.23 1012.5610069.92 1012.6510074.25 1012.6410079.98 1012.62
10087.21 1012.4310090.05 1012.35 10092.3 1012.3210100.12 1012.1810101.33 1012.11
10110.18 1011.7410110.35 1011.7310111.83 1011.7410119.38 1011.7710120.25 1011.75
 10128.4 1011.2510130.32 1011.1510137.43  1011.410140.38 1011.4310146.45 1011.61
10150.45 1011.7810155.48 1011.9410160.51  1012.1 10164.5 1012.1910170.58 1012.39
10173.53 1012.4210180.65 1012.3510182.55  1012.410190.71 1012.5710191.58 1012.59
10199.05 1012.64 10200.6 1012.6510200.78 1012.6510201.01 1012.6510210.85 1012.68
10218.65 1012.7710220.91 1012.7610227.68 1012.7610230.98  1012.910235.15 1012.95
10241.05 1012.9610245.72 1012.9210251.11  1012.710254.75 1012.6610261.18 1012.42
10263.77 1012.3110271.24 1011.9610280.66 1011.3910281.31 1011.3310281.82  1011.4
10286.27 1011.7410290.85 1012.1310291.38 1012.1710299.87 1012.1510301.44 1012.18
 10308.9  1012.310311.51 1012.26 10314.8 1012.1910326.03 1012.0110331.75  1011.9
10338.29 1010.3210341.41  1009.610342.67 1009.7310347.95 1010.2710354.06  1011.1
10359.42 1011.9810371.39 1012.6810371.91  1012.710372.07 1012.6910373.49 1012.71
10381.97 1012.7910390.12 1012.3610392.04 1012.2910399.15 1012.4510402.11 1012.39
10408.17 1012.5410412.17 1012.6110417.22 1012.6110422.24 1012.6910426.22 1012.79
10432.31 1012.7710435.25 1012.7410442.37 1012.7310451.36 1012.9310452.44 1012.93
 10453.3 1012.9510460.71 1013.0110462.32 1013.0310462.51 1013.0410462.74 1013.04
10472.57 1013.4710474.12 1013.5110482.64 1013.6910483.81 1013.72

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************
 9738.65     .05 9972.99    .04810018.48     .0510331.75    .04810359.42     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9972.9910018.48            625.27  630.63  632.18             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9738.65 9872.24    1012       F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1012.09  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.40  * Wt. n-Val.              *   0.050  *   0.048  *   0.048  *
* W.S. Elev (ft)         * 1011.69  * Reach Len. (ft)         *  625.27  *  630.63  *  632.18  *
```

```
* Crit W.S. (ft)          * 1011.43  * Flow Area (sq ft)       *   64.13  *   89.63  *   41.03  *
* E.G. Slope (ft/ft)      *0.015039  * Area (sq ft)            *  162.87  *   89.63  *   41.03  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *  180.12  *  533.88  *  131.00  *
* Top Width (ft)          *  301.01  * Top Width (ft)          *  168.27  *   45.00  *   87.74  *
* Vel Total (ft/s)        *    4.34  * Avg. Vel. (ft/s)        *    2.81  *    5.96  *    3.19  *
* Max Chl Dpth (ft)       *    3.50  * Hydr. Depth (ft)        *    0.68  *    1.99  *    0.47  *
* Conv. Total (cfs)       *  6890.5  * Conv. (cfs)             *  1468.8  *  4353.5  *  1068.2  *
* Length Wtd. (ft)        *  630.15  * Wetted Per. (ft)        *   94.81  *   45.60  *   88.18  *
* Min Ch El (ft)          * 1008.73  * Shear (lb/sq ft)        *    0.64  *    1.85  *    0.44  *
* Alpha                   *    1.36  * Stream Power (lb/ft s) *10483.81  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.93  * Cum Volume (acre-ft)    *    2.34  *   11.04  *    1.47  *
* C & E Loss (ft)         *    0.06  * Cum SA (acres)          *    3.86  *    4.03  *    1.61  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.443

INPUT
Description:
Station Elevation Data    num=      52
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9780.67 1009.22 9785.43 1009.27 9790.04 1009.21 9795.03 1009.23 9800.05 1009.19
 9805.46 1009.12 9810.06 1009.22  9814.3 1009.02 9820.07 1009.03 9826.31 1008.86
 9830.07 1008.78 9836.73 1008.64 9840.08 1008.63 9843.17 1008.65 9850.09 1008.62
 9857.58 1008.47  9860.1 1008.46 9862.42 1008.39 9870.11 1008.26 9878.43 1007.94
 9880.11 1007.84 9881.66  1007.8 9890.12 1007.61 9899.28 1007.76 9900.13 1007.79
 9909.71 1008.02 9910.14 1008.02 9910.53 1008.02 9920.15 1007.98 9932.04 1007.31
 9934.43 1007.24 9938.57 1006.88 9949.87  1006.1 9952.59 1005.91 9961.96    1005
 9964.42 1004.89 9965.73 1004.68 9977.68 1004.75 9985.02 1004.71 9988.65 1004.73
 9998.35 1004.45   10000 1004.4110002.87 1004.3410006.01  1004.210012.15    1005
10019.82 1005.8410020.23 1005.8810027.36    100710039.11 1008.84 10044.8 1009.28
10050.25 1009.5110054.88  1009.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***************************************************
 9780.67     .05 9938.57    .04810027.36     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9938.5710027.36           503.13  541.79  547.62            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          * 1008.09  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.19  * Wt. n-Val.             *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1007.91  * Reach Len. (ft)        *  503.13  *  541.79  *  547.62  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *   12.57  *  238.89  *    2.64  *
* E.G. Slope (ft/ft)      *0.003392  * Area (sq ft)            *   12.57  *  238.89  *    2.64  *
* Q Total (cfs)           *  845.00  * Flow (cfs)              *   10.97  *  831.35  *    2.68  *
* Top Width (ft)          *  137.88  * Top Width (ft)          *   43.29  *   88.79  *    5.80  *
* Vel Total (ft/s)        *    3.33  * Avg. Vel. (ft/s)        *    0.87  *    3.48  *    1.01  *
* Max Chl Dpth (ft)       *    3.71  * Hydr. Depth (ft)        *    0.29  *    2.69  *    0.45  *
* Conv. Total (cfs)       * 14508.2  * Conv. (cfs)             *   188.4  * 14273.8  *    46.0  *
* Length Wtd. (ft)        *  541.54  * Wetted Per. (ft)        *   43.33  *   89.08  *    5.87  *
* Min Ch El (ft)          * 1004.20  * Shear (lb/sq ft)        *    0.06  *    0.57  *    0.10  *
* Alpha                   *    1.08  * Stream Power (lb/ft s) *10054.88  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.36  * Cum Volume (acre-ft)    *    1.08  *    8.66  *    1.16  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *    2.34  *    3.06  *    0.93  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.340

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
  9904.5 1006.67 9907.42 1006.78 9910.08 1006.87 9910.47 1006.87 9923.36 1006.82
 9925.67  1006.8 9936.64 1006.58 9940.87 1006.63 9949.91 1006.67 9956.07  1006.6
 9959.87 1006.49 9969.22 1004.94  9972.1 1004.55 9975.02 1003.73 9976.34 1003.41
 9986.59 1000.93 9996.88 1000.73   10000 1000.6210006.35  1000.410015.45 1003.56
10019.24 1004.9710026.72 1005.5910029.17  1005.810030.42 1005.8410032.08 1006.03
10042.85 1006.5410044.92 1006.5410047.28 1006.75   10052 1006.8810056.13 1006.79
10062.48 1006.6710069.41 1006.6710077.68 1006.3710082.69 1006.3110092.88 1006.37
10095.96 1006.3610099.33 1006.35

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***************************************************
  9904.5     .05 9969.22    .04810019.24     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9969.2210019.24           470.05  453.07  401.05            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          * 1005.71  * Element                *  Left OB *  Channel * Right OB *
```

```
* Vel Head (ft)          *    0.41  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1005.30  * Reach Len. (ft)         *  470.05  *  453.07  *  401.05  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *    0.39  *  164.35  *    0.66  *
* E.G. Slope (ft/ft)     *0.005828  * Area (sq ft)            *    0.39  *  164.35  *    0.66  *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *    0.28  *  844.27  *    0.45  *
* Top Width (ft)         *   56.18  * Top Width (ft)          *    2.17  *   50.02  *    3.99  *
* Vel Total (ft/s)       *    5.11  * Avg. Vel. (ft/s)        *    0.72  *    5.14  *    0.68  *
* Max Chl Dpth (ft)      *    4.90  * Hydr. Depth (ft)        *    0.18  *    3.29  *    0.17  *
* Conv. Total (cfs)      * 11068.5  * Conv. (cfs)             *     3.7  * 11058.9  *     5.9  *
* Length Wtd. (ft)       *  453.02  * Wetted Per. (ft)        *    2.20  *   51.29  *    4.00  *
* Min Ch El (ft)         * 1000.40  * Shear (lb/sq ft)        *    0.06  *    1.17  *    0.06  *
* Alpha                  *    1.01  * Stream Power (lb/ft s)  *10099.33  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.25  * Cum Volume (acre-ft)    *    1.01  *    6.15  *    1.14  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)          *    2.08  *    2.20  *    0.87  *
*****************************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.254

INPUT
Description:
Station Elevation Data    num=      37
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9936.48 1004.39 9938.58 1004.38 9944.43 1004.26 9949.08  1004.1 9952.38 1004.05
 9959.58 1003.76 9960.91  1003.7 9970.65 1003.65 9974.05 1002.64 9978.17 1001.42
 9986.11  999.43 9988.58  999.19   10000  998.3710000.09  998.3610002.89  998.35
10016.73  998.2710018.75  998.7610022.16   999.610025.56 1000.0310029.94 1000.76
10033.361001.34710036.58  1001.910046.31 1003.5810047.32 1003.7910048.24 1003.82
10053.63 1003.7710063.27 1003.71 10064.6 1003.7510071.65 1003.93 10075.1 1003.99
 10079.6 1004.19 10085.6 1004.2810087.55 1004.2110093.63  1004.210096.11 1004.19
10103.46 1004.0810104.44  1004.1

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9936.48     .05 9978.17    .04810033.36     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9978.1710033.36           539.26  542.03  543.73             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)         * 1002.44  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.50  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1001.94  * Reach Len. (ft)         *  539.26  *  542.03  *  543.73  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *    0.46  *  148.79  *    1.04  *
* E.G. Slope (ft/ft)     *0.009058  * Area (sq ft)            *    0.46  *  148.79  *    1.04  *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *    0.52  *  843.18  *    1.30  *
* Top Width (ft)         *   60.43  * Top Width (ft)          *    1.77  *   55.19  *    3.47  *
* Vel Total (ft/s)       *    5.62  * Avg. Vel. (ft/s)        *    1.13  *    5.67  *    1.25  *
* Max Chl Dpth (ft)      *    3.67  * Hydr. Depth (ft)        *    0.26  *    2.70  *    0.30  *
* Conv. Total (cfs)      *  8878.5  * Conv. (cfs)             *     5.5  *  8859.4  *    13.6  *
* Length Wtd. (ft)       *  542.12  * Wetted Per. (ft)        *    1.85  *   55.78  *    3.53  *
* Min Ch El (ft)         *  998.27  * Shear (lb/sq ft)        *    0.14  *    1.51  *    0.17  *
* Alpha                  *    1.01  * Stream Power (lb/ft s)  *10104.44  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.09  * Cum Volume (acre-ft)    *    1.00  *    4.52  *    1.13  *
* C & E Loss (ft)        *    0.12  * Cum SA (acres)          *    2.05  *    1.65  *    0.83  *
*****************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
          This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.152

INPUT
Description:
Station Elevation Data    num=     135
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9633.49 1002.24 9641.28 1002.13 9642.95 1002.16 9650.32 1002.17 9653.02 1002.07
 9659.36 1002.03 9663.08 1001.89  9668.4 1001.74 9673.15 1001.69 9677.44 1001.59
 9683.21 1001.56 9686.48 1001.66 9693.27 1001.72 9695.52 1001.67 9703.34 1001.35
 9704.56 1001.25  9713.4 1001.16  9713.6 1001.16 9715.37 1001.16 9723.46 1001.15
 9731.68 1001.16 9733.53 1001.12 9740.72 1000.94 9743.59 1000.85  9747.2 1000.76
 9754.84 1000.34 9758.29 1000.21 9769.49 1000.05 9771.36  1000.1 9783.02 1000.02
 9785.92 1000.01 9793.91 1000.49 9794.96 1000.47 9803.98 1000.06 9804.23 1000.05
 9813.04  999.71 9814.04  999.71 9822.08  999.79  9824.1  999.76 9831.12  999.73
 9834.17  999.71 9840.16  999.75 9844.23  999.72  9849.2  999.79  9854.3  999.74
 9858.24  999.66 9864.36  999.62 9867.28  999.57 9874.42  999.54 9876.32   999.7
 9884.49  999.88 9885.36  999.82 9893.09  999.57 9894.55  999.53 9903.44  999.42
 9904.62  999.45 9912.48  999.59 9914.68   999.6 9917.44  999.55 9924.74   999.9
 9930.56 1000.15 9934.81 1000.35  9939.6 1000.01 9944.87  999.89 9951.49  999.37
 9954.94  999.11 9962.83  998.72  9966.3  998.47 9973.19  997.57 9975.43  997.27
    9981   996.5 9983.73  996.37 9995.19  995.65 9998.39   995.7   10000  995.72
10010.86  995.8610023.42  998.8610025.04  999.2510025.23   999.310025.39   999.3
10041.28  997.8510046.62  997.5510051.35  997.8610052.58  997.9210060.98  998.49
10065.25  998.6310071.06  999.0210077.19  999.4310083.59  999.6710091.12  999.94
10095.83 1000.3510102.32 1000.8410105.89 1001.1510111.36 1001.8410115.96  1002.2
10121.73 1002.3210126.02  1002.410129.44 1002.3810136.09 1002.4210138.48 1002.39
10146.15 1002.5110155.77 1002.1710156.21 1002.1610156.56 1002.1510171.09 1001.97
10174.12 1001.9510181.31 1001.8810186.41 1001.8410192.72 1001.8310196.47  1001.8
10201.76 1001.7510206.53 1001.72 10210.8 1001.76 10216.6 1001.7610219.84 1001.71
10226.66  1001.810228.89 1001.8110236.73 1001.6110237.93 1001.6210246.79 1001.57
```

```
10246.97 1001.5710248.52  1001.610256.01 1001.7310256.85 1001.7210265.05 1001.64
10266.92 1001.6310269.27 1001.6410276.98 1001.5710283.13 1001.8610287.05 1001.93
10292.17 1001.8610297.11 1001.8910303.32 1001.9510307.17 1001.9510310.18 1001.98

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9633.49     .05 9951.49    .04810025.23     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9951.4910025.23           483.81  489.74   494.7             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1000.23  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.11  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1000.12  * Reach Len. (ft)         *  483.81  *  489.74  *  494.70  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *   59.45  *  218.75  *   94.03  *
* E.G. Slope (ft/ft)     *0.002125  * Area (sq ft)            *   59.45  *  218.75  *   94.03  *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *   44.39  *  640.99  *  159.62  *
* Top Width (ft)         *  306.18  * Top Width (ft)          *  164.43  *   73.74  *   68.01  *
* Vel Total (ft/s)       *    2.27  * Avg. Vel. (ft/s)        *    0.75  *    2.93  *    1.70  *
* Max Chl Dpth (ft)      *    4.47  * Hydr. Depth (ft)        *    0.36  *    2.97  *    1.38  *
* Conv. Total (cfs)      * 18332.4  * Conv. (cfs)             *   963.1  * 13906.4  *  3462.9  *
* Length Wtd. (ft)       *  490.05  * Wetted Per. (ft)        *  164.51  *   74.33  *   68.16  *
* Min Ch El (ft)         *  995.65  * Shear (lb/sq ft)        *    0.05  *    0.39  *    0.18  *
* Alpha                  *    1.38  * Stream Power (lb/ft s) *10310.18  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.52  * Cum Volume (acre-ft)    *    0.63  *    2.24  *    0.53  *
* C & E Loss (ft)        *    0.10  * Cum SA (acres)          *    1.03  *    0.85  *    0.39  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.059

INPUT
Description:
Station Elevation Data     num=      55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
  9948.9  998.23 9967.06   997.3 9967.07   997.3 9967.09   997.3 9971.17  996.52
 9977.64  995.28 9979.67  994.84 9982.06  994.44 9989.67     993 9992.14  993.01
 9998.24  993.25   10000 993.29 10007.1 993.4610015.77  997.210018.39  998.33
10020.06 998.9810021.03 998.9910023.65 999.0610039.42  999.510039.56  999.51
10039.74 999.5110049.65 999.7210051.46 999.7110059.75 999.7910066.02  999.63
10069.84 999.5910074.91 999.5710079.94 999.5810086.63 999.5610090.04  999.54
10098.35 999.3810100.13 999.3410101.48 999.3410110.23  999.410111.19  999.41
10120.32  999.48 10121.8 999.4710130.42 999.3110133.52 999.3510140.52  999.44
10145.24 999.3910150.61 999.5410156.96 999.5510160.71 999.3810168.68  999.31
 10170.8  999.310180.41 999.45 10180.9 999.4610183.96 999.4110190.14  999.31
10190.99 999.3410192.13 999.2910201.09 999.3510203.85 999.3610206.81  999.42

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
  9948.9     .05 9967.06    .04810015.77     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9967.0610015.77           214.33  209.01  205.49             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         *  997.60  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.15  * Wt. n-Val.              *          *   0.048  *          *
* W.S. Elev (ft)         *  996.45  * Reach Len. (ft)         *  214.33  *  209.01  *  205.49  *
* Crit W.S. (ft)         *  996.45  * Flow Area (sq ft)       *          *   97.99  *          *
* E.G. Slope (ft/ft)     *0.026225  * Area (sq ft)            *          *   97.99  *          *
* Q Total (cfs)          *  845.00  * Flow (cfs)              *          *  845.00  *          *
* Top Width (ft)         *   42.49  * Top Width (ft)          *          *   42.49  *          *
* Vel Total (ft/s)       *    8.62  * Avg. Vel. (ft/s)        *          *    8.62  *          *
* Max Chl Dpth (ft)      *    3.45  * Hydr. Depth (ft)        *          *    2.31  *          *
* Conv. Total (cfs)      *  5217.9  * Conv. (cfs)             *          *  5217.9  *          *
* Length Wtd. (ft)       *  210.59  * Wetted Per. (ft)        *          *   43.44  *          *
* Min Ch El (ft)         *  993.00  * Shear (lb/sq ft)        *          *    3.69  *          *
* Alpha                  *    1.00  * Stream Power (lb/ft s) *10206.81  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.01  * Cum Volume (acre-ft)    *    0.30  *    0.46  *          *
* C & E Loss (ft)        *    0.27  * Cum SA (acres)          *    0.11  *    0.20  *          *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The program used critical depth
         for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
         water surface came back below critical depth.  This indicates that there is not a valid subcritical answer.  The program
         defaulted to critical depth.

CROSS SECTION


RIVER: 2S2WS7A
REACH: A52                RS: 0.019

INPUT
```

```
Description:
Station Elevation Data     num=      109
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9388.04  999.63 9400.27  999.66 9416.69  999.79 9430.17  999.78 9441.31  999.79
    9448   999.6 9469.44  999.79 9471.87  999.77 9509.68  999.13 9511.73  999.13
 9513.38  999.11 9526.62  999.52 9550.56  999.13 9576.08  997.82  9581.6   997.8
 9610.73     998 9620.24  998.32  9624.7  998.37 9638.68  998.63 9666.75   998.9
 9673.64  998.97 9676.56  999.08  9686.4  999.05 9702.61  998.31 9713.75  998.06
 9725.67  997.62 9733.46  997.43 9734.59  997.42 9739.44  997.02 9739.76     997
 9748.31  997.36 9752.74  997.64 9772.71  997.93  9780.1  998.03 9787.28  998.87
 9790.12   998.9 9805.79  998.48 9809.23  998.35 9835.01  997.18 9838.46  996.94
 9843.91  996.56 9877.09  996.79 9877.35  996.79 9877.67   996.8 9877.96  996.81
 9878.53  996.78 9879.16  996.83 9898.78  997.36 9903.63  994.61 9906.31  993.25
 9910.35  991.21 9915.14  991.27 9931.56  991.77 9934.61  991.85 9937.25  991.85
 9946.04  991.83 9949.12  994.33 9951.49  996.41  9956.8  996.41 9971.88  997.03
 9978.92  993.27 9980.13  992.66 9981.12  992.16 9987.51   992.1   10000  991.97
 10000.5  991.9610012.09   991.710018.58  996.3410020.33   997.410021.85  997.24
10025.53  996.8510028.74  996.5110034.75  997.1910039.46  997.8110048.41  998.27
10051.96  998.4510060.54  999.4210062.24  999.5710065.58  999.5110083.82  998.98
10111.45  998.8210113.55   998.810133.77  998.7810139.53  998.7410148.57  998.76
10159.08   998.710163.69  998.6510182.91  998.4910195.04  998.3710200.15  998.36
10208.09   998.4 10222.2  998.5710232.43  998.4210234.61  998.4310236.48  998.45
10257.84  998.8110267.27   998.910271.62  998.88   10276  998.9110281.52  998.92
10285.76  998.8710289.79  998.9710292.83     99910296.04  999.0110299.91  998.95
10303.59     99910306.98  998.9610310.56  998.9910312.42      999

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9388.04     .05 9910.35    .048  9956.8     .05 9971.88    .04810020.33     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9971.8810020.33                 0       0       0              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  994.82  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.             *   0.048  *   0.048  *         *
* W.S. Elev (ft)          *  994.58  * Reach Len. (ft)        *          *          *         *
* Crit W.S. (ft)          *  993.44  * Flow Area (sq ft)      *  121.93  *   92.17  *         *
* E.G. Slope (ft/ft)      *0.004901  * Area (sq ft)           *  121.93  *   92.17  *         *
* Q Total (cfs)           *  845.00  * Flow (cfs)             *  503.15  *  341.85  *         *
* Top Width (ft)          *   85.38  * Top Width (ft)          *   45.72  *   39.66  *         *
* Vel Total (ft/s)        *    3.95  * Avg. Vel. (ft/s)        *    4.13  *    3.71  *         *
* Max Chl Dpth (ft)       *    3.37  * Hydr. Depth (ft)        *    2.67  *    2.32  *         *
* Conv. Total (cfs)       * 12069.8  * Conv. (cfs)             *  7186.9  *  4882.9  *         *
* Length Wtd. (ft)        *          * Wetted Per. (ft)        *   47.51  *   41.18  *         *
* Min Ch El (ft)          *  991.70  * Shear (lb/sq ft)        *    0.79  *    0.68  *         *
* Alpha                   *    1.01  * Stream Power (lb/ft s) *10312.42  *    0.00  *    0.00  *
* Frctn Loss (ft)         *          * Cum Volume (acre-ft)    *          *          *         *
* C & E Loss (ft)         *          * Cum SA (acres)          *          *          *         *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.894

INPUT
Description: Butterfly Road
Station Elevation Data     num=       55
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9923.57 1080.94 9925.61 1080.91 9932.84 1080.88 9933.98 1080.88 9941.54 1080.81
 9944.57 1080.76 9960.35  1080.7 9962.16 1080.71 9963.86 1079.95 9965.92 1078.85
 9966.41 1079.01 9972.34  1079.5 9986.48 1080.67 9988.12 1080.81 9988.76 1080.72
 9989.24 1080.61 9990.231080.371 9998.97 1078.26   10000 1078.3410002.86 1078.57
10009.81 1079.5610011.18 1079.7710011.39  1079.810012.21 1079.8610017.23 1079.93
10027.96  1080.310029.82    108010038.43 1079.7310048.16  1080.310050.43 1080.31
 10054.7 1080.4110059.39  1080.510061.02 1080.4810067.25 1080.4910071.61 1080.59
 10075.1 1080.5710082.19 1080.5510082.96 1080.5310085.16  1080.610090.81 1080.78
10095.64  1080.610102.43 1080.3510107.32 1080.5310115.78 1079.3410121.95 1078.64
10124.89 1078.48 10129.8 1079.0610136.42 1080.0710137.41  1080.210137.74  1080.3
 10139.8 1080.3710153.67 1080.82 10156.3 1080.8610161.73 1080.9710166.88 1081.11

Manning's n Values         num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9923.57     .05 9962.16    .048 9972.34     .05 9990.23    .04810027.96     .05
10115.78    .04810124.89     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9990.2310027.96             471.1  473.74  478.46              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1081.00  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.08  * Wt. n-Val.             *   0.049  *   0.048  *   0.049  *
* W.S. Elev (ft)          * 1080.92  * Reach Len. (ft)        *  471.10  *  473.74  *  478.46  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *   32.32  *   53.29  *   96.66  *
* E.G. Slope (ft/ft)      *0.005139  * Area (sq ft)           *   32.32  *   53.29  *   96.66  *
* Q Total (cfs)           *  405.00  * Flow (cfs)             *   65.71  *  147.95  *  191.34  *
* Top Width (ft)          *  234.32  * Top Width (ft)          *   65.29  *   37.73  *  131.30  *
* Vel Total (ft/s)        *    2.22  * Avg. Vel. (ft/s)        *    2.03  *    2.78  *    1.98  *
* Max Chl Dpth (ft)       *    2.66  * Hydr. Depth (ft)        *    0.49  *    1.41  *    0.74  *
* Conv. Total (cfs)       *  5649.8  * Conv. (cfs)             *   916.7  *  2063.9  *  2669.2  *
* Length Wtd. (ft)        *  475.69  * Wetted Per. (ft)        *   65.88  *   38.09  *  131.63  *
* Min Ch El (ft)          * 1078.26  * Shear (lb/sq ft)        *    0.16  *    0.45  *    0.24  *
* Alpha                   *    1.08  * Stream Power (lb/ft s) *10166.88  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.92  * Cum Volume (acre-ft)    *   16.46  *    7.24  *   24.48  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *   38.93  *    7.13  *   40.46  *
*****************************************************************************************
```

```
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.804

INPUT
Description:
Station Elevation Data    num=      48
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*******************************************************************************
 9935.52 1077.18 9936.59 1077.18 9946.21 1077.26 9951.88  1077.3 9963.93 1075.38
 9966.23 1075.01 9969.11 1076.18 9975.72 1078.02 9985.16 1076.74 9986.86 1076.48
 9988.06 1076.29 9999.26 1074.5510003.87 1075.45 10008.3 1076.3610009.56 1076.46
10011.24 1076.5910014.27 1076.8210025.73 1077.4910031.11 1077.2410035.75 1077.02
10039.81  1077.110052.85 1075.2410057.04 1074.4810060.61 1074.9810075.85 1076.57
10084.89 1076.6210085.87  1076.610086.72 1076.6210095.89  1076.710099.25 1076.52
10105.49 1076.1810105.92 1076.1710106.41 1076.1710115.94 1076.2610124.26 1076.03
10125.96 1075.8910127.92 1076.0410135.99 1076.6410143.03 1076.6410146.01 1076.64
10152.41 1076.6910156.03 1076.8510160.19 1076.9410166.06 1077.0410171.18 1077.24
10176.08 1077.32 10181.7  1077.510185.36 1077.62

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9935.52     .05 9951.88    .048 9975.72     .05 9986.86    .04810009.56     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9986.8610009.56           535.47  532.31  528.24             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*************************************************************************************************
* E.G. Elev (ft)         * 1077.07  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.20  * Wt. n-Val.              *   0.048  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1076.87  * Reach Len. (ft)        *  535.47  *  532.31  *  528.24  *
* Crit W.S. (ft)         *           * Flow Area (sq ft)      *   15.87  *   30.32  *   76.81  *
* E.G. Slope (ft/ft)     *0.015312  * Area (sq ft)           *   15.87  *   30.32  *   76.81  *
* Q Total (cfs)          *  405.00  * Flow (cfs)              *   54.60  *  139.52  *  210.88  *
* Top Width (ft)         *  163.56  * Top Width (ft)          *   19.69  *   22.70  *  121.18  *
* Vel Total (ft/s)       *    3.29  * Avg. Vel. (ft/s)        *    3.44  *    4.60  *    2.75  *
* Max Chl Dpth (ft)      *    2.39  * Hydr. Depth (ft)        *    0.81  *    1.34  *    0.63  *
* Conv. Total (cfs)      *  3272.9  * Conv. (cfs)             *   441.2  *  1127.5  *  1704.2  *
* Length Wtd. (ft)       *  529.89  * Wetted Per. (ft)        *   20.19  *   23.03  *  121.55  *
* Min Ch El (ft)         * 1074.55  * Shear (lb/sq ft)        *    0.75  *    1.26  *    0.60  *
* Alpha                  *    1.18  * Stream Power (lb/ft s) *10185.36  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    4.00  * Cum Volume (acre-ft)   *   16.20  *    6.78  *   23.53  *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)         *   38.47  *    6.80  *   39.07  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.704

INPUT
Description:
Station Elevation Data    num=      82
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*******************************************************************************
 9892.59 1073.05 9897.27 1073.09 9901.23 1073.23 9905.19 1073.23 9911.75 1073.12
 9913.12 1073.12 9917.32 1073.14 9922.27 1073.18 9928.98 1073.33 9932.79 1073.27
  9940.3 1073.43 9943.31 1073.46 9949.51 1073.49 9953.83 1073.49  9960.7 1073.39
 9964.35 1073.32 9968.63 1073.29 9983.35 1071.73 9983.51 1071.71 9983.63 1071.71
 9984.34 1071.72 9999.65  1071.9   10000 1071.8710005.09 1071.4510007.99 1071.42
 10009.7 1071.58 10017.1 1073.1310017.891073.30910019.75 1073.7310019.89 1073.75
10020.76 1073.86 10028.1 1073.2610036.19 1073.3710039.99  1073.410046.07 1073.25
10047.92 1073.1910048.52  1073.210055.85 1073.1210059.04 1073.2210066.84 1073.26
10075.16 1072.9810078.51 1071.9510080.63  1071.410084.05 1071.7110088.95 1072.23
10094.16  1072.110102.45 1071.53 10106.3 1071.4610111.591071.90410119.28 1072.55
10122.16 1072.5810135.63    107210136.79 1071.9610137.96 1071.9210138.51 1071.67
10143.21  1069.910148.08 1071.4510150.63 1072.1610156.62 1072.2110160.52 1070.89
10164.84  1070.910167.11  1070.210180.77 1072.3710184.86 1072.8310190.37 1073.75
10195.81 1074.1310198.57 1074.2410206.33 1074.43 10206.5 1074.4410207.01 1074.47
10214.43    107510216.85 1075.0710221.62 1075.0110227.37 1074.9410230.28 1074.96
10237.89 1075.5610238.21 1075.57 10239.2 1075.5610248.41 1075.3310254.07 1075.21
10258.93 1075.1910259.42  1075.2

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9892.59     .05 9968.63    .04810017.89     .0510102.45    .04810111.59     .05
10137.96    .04810150.63     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9968.6310017.89           474.82  473.78  465.64             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*************************************************************************************************
* E.G. Elev (ft)         * 1073.04  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.08  * Wt. n-Val.              *          *   0.048  *   0.049  *
* W.S. Elev (ft)         * 1072.96  * Reach Len. (ft)        *  474.82  *  473.78  *  465.64  *
* Crit W.S. (ft)         *           * Flow Area (sq ft)      *          *   44.41  *  132.01  *
* E.G. Slope (ft/ft)     *0.004486  * Area (sq ft)           *          *   44.41  *  132.01  *
```

```
* Q Total (cfs)          *  405.00  * Flow (cfs)              *          *   91.57  *  313.43  *
* Top Width (ft)         *  154.94  * Top Width (ft)          *          *   44.54  *  110.41  *
* Vel Total (ft/s)       *    2.30  * Avg. Vel. (ft/s)        *          *    2.06  *    2.37  *
* Max Chl Dpth (ft)      *    3.06  * Hydr. Depth (ft)        *          *    1.00  *    1.20  *
* Conv. Total (cfs)      *  6047.1  * Conv. (cfs)             *          *  1367.2  *  4679.8  *
* Length Wtd. (ft)       *  467.12  * Wetted Per. (ft)        *          *   44.77  *  112.00  *
* Min Ch El (ft)         * 1071.42  * Shear (lb/sq ft)        *          *    0.28  *    0.33  *
* Alpha                  *    1.01  * Stream Power (lb/ft s) *10259.42  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.14  * Cum Volume (acre-ft)    *   16.10  *    6.33  *   22.26  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)          *   38.35  *    6.39  *   37.67  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.614

INPUT
Description: Ocotillo Road
Station Elevation Data     num=      96
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*******************************************************************************************
 9793.78 1070.42 9798.57 1070.24  9800.1 1070.15 9801.69 1070.11 9807.18 1070.03
 9812.48 1069.94 9816.08 1069.93 9826.38 1069.99 9830.47 1070.02 9835.46 1070.02
 9840.29 1070.01 9844.86 1070.02  9854.2    1070 9859.25 1069.91 9863.75 1069.81
 9868.11 1069.75 9870.82 1069.72 9873.63 1069.75  9877.9 1069.78 9882.02 1069.87
 9888.02 1069.88 9891.49 1069.61 9892.08 1069.56 9896.03 1069.65 9903.22 1069.78
 9905.27 1069.76 9913.04 1069.68 9915.61 1069.72 9919.99 1069.68 9924.99 1069.44
 9934.81 1069.57 9936.75 1069.58 9942.79 1069.81 9946.61 1069.88 9947.97 1069.86
 9956.95 1069.72 9962.21 1069.74 9967.28 1069.64 9975.95 1069.97 9977.62 1070.02
  9979.9 1070.07  9991.5 1070.52 9992.66 1070.56 9995.46  1069.4 9996.07 1069.15
  9999.6 1067.78   10000 1067.8710003.13 1068.5410006.811069.38910008.68 1069.82
10009.06 1069.8110018.41 1069.5910019.57 1069.5610021.92 1069.59 10029.3 1069.63
10035.96 1069.5410039.63 1069.4910044.16 1069.5210050.85 1069.3310060.13  1068.9
10062.83 1068.7910070.93 1069.0410076.94 1069.2910080.98  1069.310088.45 1069.26
10092.73 1069.2310097.15 1068.32 10105.6 1066.6610112.14 1068.23 10117.4 1069.25
10124.08 1069.0810132.65 1069.6310140.62 1069.33 10142.5 1069.2410142.99 1069.19
10143.83 1069.2110153.32    106910167.23  1069.3   10174 1069.5810175.28 1069.42
10180.18 1069.5410183.47 1069.6110184.33 1069.5210191.67  1069.410194.67 1069.42
10199.86 1069.33   10205 1069.4410208.06 1069.4710215.34 1069.5710216.25 1069.56
10219.75 1069.7110224.45 1069.8310225.67 1069.9110232.64 1069.9410236.01 1069.98
10237.16 1070.01

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************************
 9793.78     .05 9995.46    .04810006.81     .0510097.15    .048 10117.4     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9995.4610006.81            474.85  473.76  469.61             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev  Permanent
 9793.78 9888.02 1069.88        F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)         * 1069.91  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.13  * Wt. n-Val.             *   0.050  *   0.048  *   0.049  *
* W.S. Elev (ft)         * 1069.77  * Reach Len. (ft)        *  474.85  *  473.76  *  469.61  *
* Crit W.S. (ft)         * 1069.61  * Flow Area (sq ft)      *    7.96  *   13.58  *  122.54  *
* E.G. Slope (ft/ft)     *0.011152  * Area (sq ft)           *    8.22  *   13.58  *  122.54  *
* Q Total (cfs)          *  405.00  * Flow (cfs)              *    6.27  *   48.64  *  350.09  *
* Top Width (ft)         *  304.18  * Top Width (ft)          *   79.63  *   11.35  *  213.21  *
* Vel Total (ft/s)       *    2.81  * Avg. Vel. (ft/s)        *    0.79  *    3.58  *    2.86  *
* Max Chl Dpth (ft)      *    3.11  * Hydr. Depth (ft)        *    0.11  *    1.20  *    0.57  *
* Conv. Total (cfs)      *  3835.1  * Conv. (cfs)             *    59.4  *   460.6  *  3315.2  *
* Length Wtd. (ft)       *  471.18  * Wetted Per. (ft)        *   69.38  *   11.83  *  213.88  *
* Min Ch El (ft)         * 1067.78  * Shear (lb/sq ft)        *    0.08  *    0.80  *    0.40  *
* Alpha                  *    1.09  * Stream Power (lb/ft s) *10237.16  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.83  * Cum Volume (acre-ft)    *   16.06  *    6.01  *   20.90  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *   37.92  *    6.09  *   35.94  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.524

INPUT
Description:
Station Elevation Data     num=      99
     Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev      Sta     Elev
*******************************************************************************************
 9835.71 1065.94  9836.6 1065.95 9845.81 1065.99 9850.59  1065.9  9856.3 1065.96
  9865.7 1065.99 9866.53 1065.98 9866.79 1065.98 9867.29 1065.97 9877.28 1065.72
 9882.46 1065.72 9887.77  1065.8 9897.98 1065.92 9898.25 1065.93  9898.4 1065.93
 9898.84 1065.92 9906.36 1065.87 9908.74 1065.85 9913.33 1065.87 9919.23 1065.86
  9922.3 1065.92 9929.72    1066 9931.99 1065.97 9938.23 1065.84 9940.21 1065.82
  9946.2 1065.98  9950.7 1066.19 9959.36 1066.06 9961.44 1065.95 9963.25 1065.84
  9981.1  1064.5  9981.8 1064.52 9982.27 1064.54 9987.13 1064.75  9988.3  1064.8
   10000 1063.0910001.78 1062.8310002.57  1062.710002.93 1062.8110009.33  1064.5
10013.12  1065.510013.16  1065.510021.67 1066.0810026.95 1066.2710031.42 1066.21
 10045.1 1066.0910049.78 1066.0310055.59 1065.9510057.74 1065.9710064.56 1065.78
```

```
10066.07 1065.7410067.88 1065.6110080.11 1064.7610083.24 1064.4110089.46 1064.15
10091.97 1064.3610104.51 1064.8510108.03 1064.9310113.52 1065.0710118.52  1065.6
10121.48  1065.810129.01 1065.8710129.45 1065.8710130.85 1065.8510137.42 1065.78
 10139.5 1065.71 10143.5 1065.7610149.99 1065.8110153.35 1065.7810160.47 1065.51
   10164  1065.410170.96 1065.2410177.26 1065.2710181.45 1065.1310189.53 1065.52
10191.94 1065.6410193.19 1065.6710197.14 1065.8910201.16 1066.1410202.43 1066.23
10209.13 1066.5210212.92 1066.6110217.09  1066.810223.41  1066.810225.06 1066.76
10230.29 1066.6310233.03 1066.59 10233.9 1066.5610235.57 1066.5310244.38 1066.37
10248.96  1066.510254.87  1066.910263.43 1067.37 10264.9 1067.4410265.36 1067.49
10272.87 1067.9510275.85 1068.2610280.83 1068.5210285.39 1068.53

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************
 9835.71     .05 9987.13    .04810009.33     .0510080.11    .04810091.97     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9987.1310009.33           518.24  526.24  533.48             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev  Permanent
 9835.71 9929.72    1066        F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1066.08  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.15  * Wt. n-Val.              *   0.050  *   0.048  *   0.049  *
* W.S. Elev (ft)         * 1065.93  * Reach Len. (ft)         *  518.24  *  526.24  *  533.48  *
* Crit W.S. (ft)         * 1065.50  * Flow Area (sq ft)       *   22.10  *   48.04  *   88.75  *
* E.G. Slope (ft/ft)     *0.006194  * Area (sq ft)            *   26.95  *   48.04  *   88.75  *
* Q Total (cfs)          *  405.00  * Flow (cfs)              *   45.20  *  193.52  *  166.27  *
* Top Width (ft)         *  264.69  * Top Width (ft)          *   93.83  *   22.20  *  148.66  *
* Vel Total (ft/s)       *    2.55  * Avg. Vel. (ft/s)        *    2.05  *    4.03  *    1.87  *
* Max Chl Dpth (ft)      *    3.23  * Hydr. Depth (ft)        *    0.62  *    2.16  *    0.60  *
* Conv. Total (cfs)      *  5146.1  * Conv. (cfs)             *   574.4  *  2459.0  *  2112.7  *
* Length Wtd. (ft)       *  530.30  * Wetted Per. (ft)        *   35.71  *   22.59  *  148.96  *
* Min Ch El (ft)         * 1062.70  * Shear (lb/sq ft)        *    0.24  *    0.82  *    0.23  *
* Alpha                  *    1.49  * Stream Power (lb/ft s) *10285.39  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.99  * Cum Volume (acre-ft)    *   15.87  *    5.68  *   19.76  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)          *   36.97  *    5.91  *   33.99  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.424

INPUT
Description:
Station Elevation Data     num=     105
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
    9875  1062.2 9875.11 1062.21 9876.52 1062.19 9885.12 1061.97 9887.11 1061.88
 9895.14 1062.04  9897.7 1062.09 9905.15 1061.95  9908.3 1061.99 9915.17 1062.01
 9918.89 1061.99 9925.18 1062.02 9929.49 1062.05  9935.2 1062.05 9940.08 1061.89
 9945.21 1061.79 9950.68 1061.93 9955.23 1061.94 9961.27  1061.9 9965.24 1061.97
 9971.86 1061.91 9975.26 1061.92 9985.41 1061.93 9985.96 1061.94 9990.54 1061.99
 9990.631061.966 9991.421061.756 9991.97 1061.61 9993.86 1061.27 9997.37 1060.19
   10000 1060.6110000.85 1060.7410002.52 1060.9110006.47 1061.2610008.61 1061.31
10023.94 1061.7210025.33 1061.6910033.89 1061.6710035.35 1061.6710044.77 1061.74
10045.36 1061.7410054.26 1061.7410056.05 1061.6610056.53  1061.610061.81 1060.93
10067.42 1060.2210071.91 1060.5110082.75  1061.310085.42 1061.35 10088.4 1061.25
10095.44 1061.0810101.74 1061.2310105.45  1061.310109.59 1061.3710115.47 1061.38
10120.73 1061.3810125.48 1061.3910130.78  1061.3 10135.5 1061.1210139.84 1060.98
10146.88 1060.6610150.75 1060.2610154.78 1060.4210158.84 1060.98 10172.5 1061.18
10175.56 1061.2310183.75 1061.4910185.57  1061.5 10187.2 1061.5310195.58  1061.5
10204.94 1061.47 10205.6 1061.4710215.53 1061.3810215.61 1061.3810215.69 1061.38
10217.02 1061.4110225.63 1061.6110234.68 1061.6910235.64 1061.6810244.17 1061.76
10245.66 1061.7810247.32 1061.8310251.26 1061.8910255.67 1061.9710263.17 1062.02
10265.69 1062.0510268.51 1062.12 10275.7 1062.2710282.16 1062.2610285.72 1062.23
10291.65 1062.3610295.73 1062.3110300.29 1062.4310305.75 1062.4810310.64 1062.56
10315.76 1062.6710321.48 1062.7310325.78 1062.7710329.64 1062.7810335.79  1062.7
10342.67 1062.7910345.81  1062.810348.63 1062.7210355.82  1062.710356.14 1062.71

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
    9875     .05 9991.42    .04810023.94     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9991.4210023.94           485.24  484.74  483.44             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev  Permanent
    9875 9929.49 1062.05        F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1062.07  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.08  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1061.99  * Reach Len. (ft)         *  485.24  *  484.74  *  483.44  *
* Crit W.S. (ft)         * 1061.69  * Flow Area (sq ft)       *    4.00  *   25.23  *  155.69  *
* E.G. Slope (ft/ft)     *0.009326  * Area (sq ft)            *    4.54  *   25.23  *  155.69  *
* Q Total (cfs)          *  405.00  * Flow (cfs)              *    2.02  *   63.31  *  339.67  *
* Top Width (ft)         *  335.03  * Top Width (ft)          *   67.83  *   32.52  *  234.67  *
* Vel Total (ft/s)       *    2.19  * Avg. Vel. (ft/s)        *    0.50  *    2.51  *    2.18  *
* Max Chl Dpth (ft)      *    1.80  * Hydr. Depth (ft)        *    0.07  *    0.78  *    0.66  *
* Conv. Total (cfs)      *  4193.7  * Conv. (cfs)             *    20.9  *   655.6  *  3517.3  *
* Length Wtd. (ft)       *  483.67  * Wetted Per. (ft)        *   54.38  *   32.81  *  234.90  *
* Min Ch El (ft)         * 1060.19  * Shear (lb/sq ft)        *    0.04  *    0.45  *    0.39  *
* Alpha                  *    1.04  * Stream Power (lb/ft s) *10356.14  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.74  * Cum Volume (acre-ft)    *   15.68  *    5.23  *   18.27  *
```

```
* C & E Loss (ft)        *    0.00  * Cum SA (acres)         *   36.01  *    5.58  *   31.64  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.333

INPUT
Description: West Spur Road
Station Elevation Data    num=      97
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9907.36  1058.5 9910.68 1058.32 9913.93  1058.4 9920.68 1058.29 9923.82 1058.31
 9930.68 1058.34 9937.71 1058.37 9940.68 1058.41 9943.59 1058.33 9950.68 1058.31
 9957.95 1058.34 9960.69  1058.4 9963.36 1058.45 9970.69 1058.41 9978.18 1058.45
 9980.69 1058.43 9982.62 1058.33  9983.81058.121 9985.351057.847 9987.71 1057.43
 9991.04 1057.09 9997.62  1056.4 9999.77 1055.87   10000 1055.9310005.32 1057.25
10008.86 1058.0310010.47 1058.0510016.93 1058.1210020.69 1058.2710022.68 1058.22
10030.69 1058.2410032.57 1058.3710040.69 1058.1110049.01 1058.2310050.69 1058.06
10053.95 1058.0610070.69 1057.8110079.36 1057.8810080.69 1057.84   10082 1057.82
10093.99 1057.1410099.67 1056.8110103.84 1056.2210104.14 1056.2210108.83  1056.8
10119.03 1057.6410121.54 1057.84 10130.7 1058.1410131.31 1058.0910147.61  1057.1
10147.86 1057.12 10160.5 1058.09   10161 1058.0510173.73  1056.910174.61 1056.82
10180.62  1056.210181.19  1056.310185.05 1056.9610200.61 1057.5210200.67 1057.53
10200.77 1057.53 10210.7 1057.47 10220.4 1057.68 10220.7 1057.6710221.01 1057.68
 10230.7 1057.9710240.18 1057.41 10240.7 1057.4110241.24 1057.43 10250.7 1057.86
10259.95 1058.0710260.71 1058.0910261.48  1058.110270.71 1058.04 10271.6 1058.04
10280.71 1058.1810289.61 1058.3410290.71 1058.3510291.83 1058.3710300.71 1058.51
10309.38 1058.5110310.71  1058.510312.07 1058.5110320.71 1058.7110322.19 1058.69
10330.71 1058.5510339.04 1058.4210340.71 1058.4110342.42 1058.4110350.71 1058.46
10358.81 1058.5110360.71 1058.5210362.66 1058.5210370.71  1058.510378.58 1058.73
10380.71 1058.8310382.32 1058.83

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9907.36     .05  9983.8    .04810016.93     .0510079.36    .04810108.83     .05
10173.73    .04810185.05     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9983.810016.93            510.88  515.26  517.49             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)         * 1058.32  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.              *   0.050  *   0.048  *   0.049  *
* W.S. Elev (ft)         * 1058.25  * Reach Len. (ft)         *  510.88  *  515.26  *  517.49  *
* Crit W.S. (ft)         * 1057.83  * Flow Area (sq ft)       *    0.04  *   32.38  *  158.00  *
* E.G. Slope (ft/ft)     *0.006514  * Area (sq ft)            *    0.04  *   32.38  *  158.00  *
* Q Total (cfs)          *  405.00  * Flow (cfs)               *    0.02  *   78.99  *  326.00  *
* Top Width (ft)         *  293.93  * Top Width (ft)           *    0.70  *   33.13  *  260.10  *
* Vel Total (ft/s)       *    2.13  * Avg. Vel. (ft/s)         *    0.37  *    2.44  *    2.06  *
* Max Chl Dpth (ft)      *    2.38  * Hydr. Depth (ft)         *    0.06  *    0.98  *    0.61  *
* Conv. Total (cfs)      *  5018.0  * Conv. (cfs)              *     0.2  *   978.7  *  4039.1  *
* Length Wtd. (ft)       *  516.45  * Wetted Per. (ft)         *    0.71  *   33.56  *  260.55  *
* Min Ch El (ft)         * 1055.87  * Shear (lb/sq ft)         *    0.02  *    0.39  *    0.25  *
* Alpha                  *    1.01  * Stream Power (lb/ft s)   *10382.32  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.39  * Cum Volume (acre-ft)     *   15.65  *    4.91  *   16.52  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)           *   35.63  *    5.21  *   28.89  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.235

INPUT
Description:
Station Elevation Data    num=     114
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9796.73 1054.96 9797.11 1054.96 9801.92 1054.89 9812.46 1054.69 9812.64 1054.69
 9812.75 1054.69 9823.35  1054.6 9830.16 1054.69 9834.07 1054.67 9840.31 1054.65
 9843.54 1054.61 9844.78 1054.58 9847.58 1054.54 9855.49 1054.44 9864.99 1054.33
 9866.21 1054.31 9866.75 1054.32 9868.16 1054.34 9874.49 1054.48 9876.92 1054.47
  9882.4 1054.41 9884.15 1054.39 9887.41 1054.38 9892.85 1054.46 9897.41 1054.54
 9902.31 1054.46 9907.42 1054.38 9912.18 1054.39 9917.43 1054.44 9923.05 1054.46
 9927.43 1054.58 9939.86  1054.5 9947.44 1054.43 9950.85 1054.46 9957.45 1054.39
 9960.52 1054.57 9967.46 1054.75  9974.9 1054.81 9977.46  1054.7 9982.69 1054.47
 9986.77 1054.26 9991.85    1054 9999.18 1053.53 9999.62  1053.5   10000 1053.48
10001.71 1053.3710006.51  1053.210013.42 1054.1210014.28 1054.2310016.83 1054.25
10023.63  1054.210027.11 1054.1910028.19 1054.22 10037.5 1054.2910047.49 1054.29
10047.51 1054.2910047.52 1054.29   10048 1054.2810057.19 1054.1410057.51 1054.12
10057.86 1054.1110067.52 1054.2310076.52  1055.110077.52 1055.2110079.75 1054.93
10093.04 1053.2310095.94 1052.7410096.98 1052.5510101.79  1053.310105.53  1053.8
10108.83 1053.7910117.55 1053.7310124.86 1054.2710127.56 1054.3910130.45 1054.41
10137.56 1054.2410144.19 1054.4210147.57 1054.4210151.19 1054.4610155.08 1054.48
10158.17 1054.4710161.34 1054.4610165.68 1054.4710168.49 1054.4710170.55 1054.44
10175.65 1054.4110182.63 1054.38 10182.8 1054.3810182.93 1054.3810183.74 1054.37
10195.31 1054.1810197.12 1054.1810199.59 1054.1910204.27 1054.27 10207.7  1054.3
10216.54 1054.4710218.59 1054.5110220.08 1054.5410229.66 1054.5810232.46 1054.59
 10232.9 1054.61 10233.5 1054.6210244.85 1054.9610247.21 1055.0210250.45  1055.1
10254.37 1055.1510257.23  1055.210261.53 1055.2510267.41  1055.510268.68 1055.55
10269.61 1055.6110275.57 1055.8510281.99 1056.12 10282.3 1056.13
```

```
Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9796.73     .05 9986.77    .04810016.83     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9986.7710016.83           444.24   444.6  444.96             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1054.92  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.06  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1054.86  * Reach Len. (ft)         *  444.24  *  444.60  *  444.96  *
* Crit W.S. (ft)         * 1054.63  * Flow Area (sq ft)       *   60.75  *   33.35  *  137.68  *
* E.G. Slope (ft/ft)     *0.006628  * Area (sq ft)            *   60.75  *   33.35  *  137.68  *
* Q Total (cfs)          *  405.00  * Flow (cfs)               *   70.37  *   89.89  *  244.74  *
* Top Width (ft)         *  431.85  * Top Width (ft)           *  183.32  *   30.06  *  218.47  *
* Vel Total (ft/s)       *    1.75  * Avg. Vel. (ft/s)         *    1.16  *    2.70  *    1.78  *
* Max Chl Dpth (ft)      *    2.31  * Hydr. Depth (ft)         *    0.33  *    1.11  *    0.63  *
* Conv. Total (cfs)      *  4974.7  * Conv. (cfs)              *   864.4  *  1104.2  *  3006.2  *
* Length Wtd. (ft)       *  444.80  * Wetted Per. (ft)         *  183.35  *   30.16  *  218.80  *
* Min Ch El (ft)         * 1053.20  * Shear (lb/sq ft)         *    0.14  *    0.46  *    0.26  *
* Alpha                  *    1.23  * Stream Power (lb/ft s)   *10282.30  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.70  * Cum Volume (acre-ft)     *   15.30  *    4.52  *   14.77  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)           *   34.55  *    4.84  *   26.05  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.151

INPUT
Description:
Station Elevation Data     num=     114
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9757.74 1051.98 9759.55 1051.94 9764.29 1051.83 9769.55 1051.82 9774.38 1051.82
 9779.55 1051.67 9784.63 1051.58 9789.55 1051.47 9794.55 1051.52 9799.55 1051.57
 9804.46 1051.51 9809.55 1051.34 9814.73 1051.31 9819.55 1051.23 9824.29 1051.22
 9829.55 1051.12  9834.9  1051.2 9839.55 1051.18 9844.99 1051.12 9849.55 1051.17
 9854.04 1051.24 9859.55 1051.37 9865.16 1051.41 9869.55 1051.51 9873.87 1051.45
 9879.55 1051.49 9885.34 1051.46 9889.55 1051.51  9893.7 1051.46 9899.55 1051.55
 9905.51 1051.56 9909.55 1051.56  9915.6 1051.54 9919.55 1051.59 9923.45 1051.61
 9929.56 1051.81 9935.77 1051.58 9939.56 1051.51 9943.28 1051.16 9949.56  1050.7
 9955.94 1050.41 9959.56 1050.42 9966.03 1050.88 9969.56 1051.34 9973.02 1051.16
 9979.56 1051.48 9985.43 1051.79  9986.2 1051.83  9994.2 1051.13 9999.38  1050.1
   10000 1050.1210010.11  1050.4 10012.7 1050.4610019.56 1050.6210026.55  1050.4
10029.56  1050.410036.64 1050.5910039.56 1050.6510042.43 1050.5710049.56 1050.39
10056.81 1050.7110059.56 1050.7210062.26 1050.8210069.56 1051.0210072.181051.024
10076.98 1051.0310079.56 1051.0510082.09 1051.1110089.56 1051.1910097.16 1051.26
10099.56 1051.2510107.24  1051.210109.56 1051.1910111.84 1051.2810119.56 1051.32
10123.58  1051.210133.18 1051.0710139.05 1051.1510144.57 1050.0910149.29 1050.34
10156.18 1051.3110166.63 1050.4210171.95    105010173.17 1049.6910179.74 1049.33
10182.51 1049.6610186.25 1050.0710196.34 1050.7410199.57 1051.0110201.08 1051.01
10209.57 1050.82 10218.2 1050.6210219.57 1050.5610221.88  1050.410231.66 1049.66
10233.95 1049.32 10239.6 1049.4310242.53  1049.910257.39 1050.5710259.57 1050.69
10268.63 1050.6510269.57 1050.6510278.72 1050.8610279.57 1050.88 10280.4 1050.93
10289.57 1051.1510298.89 1051.4710299.57  1051.510300.24 1051.5410309.57 1051.92
10319.06 1052.5810319.57  1052.610320.07 1052.6210327.35 1052.75

Manning's n Values         num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************
 9757.74     .05  9994.2    .04810072.18     .0510156.18    .04810182.51     .05
10221.88    .04810242.53     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9994.210072.18           471.29  471.46   471.6             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1051.22  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.11  * Wt. n-Val.              *   0.050  *   0.048  *   0.049  *
* W.S. Elev (ft)         * 1051.11  * Reach Len. (ft)         *  471.29  *  471.46  *  471.60  *
* Crit W.S. (ft)         * 1050.91  * Flow Area (sq ft)       *   10.43  *   43.34  *  105.20  *
* E.G. Slope (ft/ft)     *0.010723  * Area (sq ft)            *   10.43  *   43.34  *  105.20  *
* Q Total (cfs)          *  405.00  * Flow (cfs)               *   18.46  *   93.87  *  292.67  *
* Top Width (ft)         *  263.08  * Top Width (ft)           *   23.88  *   77.89  *  161.31  *
* Vel Total (ft/s)       *    2.55  * Avg. Vel. (ft/s)         *    1.77  *    2.17  *    2.78  *
* Max Chl Dpth (ft)      *    1.79  * Hydr. Depth (ft)         *    0.44  *    0.56  *    0.65  *
* Conv. Total (cfs)      *  3911.1  * Conv. (cfs)              *   178.3  *   906.5  *  2826.3  *
* Length Wtd. (ft)       *  471.54  * Wetted Per. (ft)         *   23.93  *   78.02  *  161.77  *
* Min Ch El (ft)         * 1050.10  * Shear (lb/sq ft)         *    0.29  *    0.37  *    0.44  *
* Alpha                  *    1.05  * Stream Power (lb/ft s)   *10327.35  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.24  * Cum Volume (acre-ft)     *   14.94  *    4.13  *   13.53  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)           *   33.49  *    4.29  *   24.11  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
          This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 1.061
```

```
INPUT
Description: Rainbow Road
Station Elevation Data    num=      84
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9843.54 1048.01 9843.56 1048.01 9846.11 1048.01 9853.62 1048.03 9856.11 1048.03
 9863.68 1048.09 9866.11 1048.11 9873.74 1048.02 9876.11 1048.04  9883.8 1047.74
 9886.11  1047.6 9893.86 1047.55 9896.11 1047.54 9903.91 1047.61 9906.11 1047.58
 9913.97 1047.31 9916.11  1047.3 9924.41 1046.61 9932.05 1046.05 9939.15 1046.65
 9946.11 1047.24 9954.21 1047.32 9956.11 1047.39 9964.27 1047.52 9966.11 1047.56
 9975.66  1047.7  9986.31047.917 9986.92 1047.93  9988.3  1047.6 9990.79 1046.99
 9992.54 1046.65 9998.45 1047.85   10000 1047.8510004.37 1047.8610008.82 1047.67
10016.11 1047.3510024.63 1047.2710026.11 1047.2810034.69 1046.9310036.11 1046.93
10044.75 1047.1710046.11 1047.1710054.81  1047.410056.11 1047.4110064.86 1047.45
10066.11 1047.4710074.92 1047.4810076.11 1047.4810084.98  1047.310086.11 1047.29
10095.04 1047.6110096.11 1047.5910109.25 1046.8810111.22 1046.8110112.01 1046.56
10117.36 1046.7610122.64  1046.310124.96  1046.710132.49 1047.0510136.12 1047.24
10145.34 1047.4510146.12 1047.44 10155.4  1047.310156.12 1047.2910157.21 1047.24
10160.93 1047.1410175.35 1046.6710176.07 1046.4710179.22 1045.6510180.84  1045.1
10181.99 1045.5910185.03  1047.210191.45 1047.1210199.72 1046.9410203.02 1047.05
10206.32 1047.1410210.89 1047.5710213.87 1048.0510217.24 1048.2210234.09 1048.76
10235.73  1048.8   10236 1048.8210236.36 1048.8310243.54 1048.67

Manning's n Values        num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9843.54     .05  9986.3    .04810004.37     .0510117.36    .04810124.96     .05
10179.22    .04810185.03     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9986.310004.37            551.77  548.76  539.31             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1047.97  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.05  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1047.92  * Reach Len. (ft)         *  551.77  *  548.76  *  539.31  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *   66.05  *    8.10  *  161.75  *
* E.G. Slope (ft/ft)     *0.004770  * Area (sq ft)            *   66.05  *    8.10  *  161.75  *
* Q Total (cfs)          *  405.00  * Flow (cfs)              *   98.11  *   10.18  *  296.71  *
* Top Width (ft)         *  333.59  * Top Width (ft)          *  107.18  *   17.69  *  208.71  *
* Vel Total (ft/s)       *    1.72  * Avg. Vel. (ft/s)        *    1.49  *    1.26  *    1.83  *
* Max Chl Dpth (ft)      *    2.82  * Hydr. Depth (ft)        *    0.62  *    0.46  *    0.78  *
* Conv. Total (cfs)      *  5864.1  * Conv. (cfs)             *  1420.6  *   147.4  *  4296.2  *
* Length Wtd. (ft)       *  544.60  * Wetted Per. (ft)        *  107.30  *   17.96  *  209.66  *
* Min Ch El (ft)         * 1046.65  * Shear (lb/sq ft)        *    0.18  *    0.13  *    0.23  *
* Alpha                  *    1.03  * Stream Power (lb/ft s) *10243.54  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.81  * Cum Volume (acre-ft)    *   14.52  *    3.85  *   12.08  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *   32.79  *    3.77  *   22.11  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 0.958

INPUT
Description:
Station Elevation Data    num=      94
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9801.91  1044.1 9805.67 1044.12 9808.53 1044.16 9818.42 1044.34  9821.1  1044.3
 9829.61 1044.09 9833.66 1043.95 9834.21 1043.97 9834.93 1043.93 9846.23 1043.75
 9851.44 1043.67 9855.62 1043.57  9858.8 1043.51 9867.96 1043.43 9869.89  1043.4
 9871.37 1043.42 9882.23 1043.25 9883.93 1043.23 9884.16 1043.22 9884.47 1043.22
  9891.3 1043.18 9896.08 1043.12 9896.42 1043.12 9902.31 1042.79 9906.64 1042.37
 9913.25 1043.09 9916.85 1043.38 9926.16 1043.17 9927.07 1043.17 9927.66 1043.18
 9930.51 1043.29 9936.11 1043.51 9937.28 1043.52 9939.07 1043.59  9947.5 1043.75
 9953.02 1043.89 9957.72    1044 9961.47 1044.01 9967.93 1043.83 9977.81  1043.6
 9978.15 1043.59 9978.46 1043.59 9978.74 1043.56 9986.28 1043.39 9994.43  1043.2
   10000 1043.5810004.98 1043.9210006.95  1043.910010.68 1043.88 10012.4 1043.87
10015.46 1043.8510018.91 1043.8310020.63 1043.7910028.37 1043.8310029.08 1043.83
10029.22 1043.8310037.53 1043.6910039.44  1043.710045.98 1043.8410049.66 1043.76
10054.43 1043.8310059.87 1043.8510062.88 1043.8110070.09 1043.8310071.33 1043.87
 10077.3 1043.9410079.78 1044.02 10080.3 1044.0310081.09 1044.0510094.82 1044.04
10101.49  1043.410109.39 1041.1610109.89    104110110.23 1041.0410110.62 1041.11
10116.01  1042.110127.41 1043.3410130.05 1043.6510131.38 1043.8110132.74 1043.81
 10141.6 1043.9110147.39 1043.7910151.81 1043.7610158.56 1043.8910162.03 1043.94
 10164.3 1043.9810172.24 1044.1310175.16  1044.2 10181.2 1044.3510182.46 1044.43
10184.38 1044.4710192.67 1044.73 10198.1 1044.7110200.38 1044.68

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9801.91     .05 9967.93    .04810004.98     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9967.9310004.98           532.17  534.26  536.79             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1044.16  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.07  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1044.09  * Reach Len. (ft)         *  532.17  *  534.26  *  536.79  *
* Crit W.S. (ft)         * 1043.91  * Flow Area (sq ft)       *   87.27  *   20.88  *   80.16  *
* E.G. Slope (ft/ft)     *0.011266  * Area (sq ft)            *   87.27  *   20.88  *   80.16  *
* Q Total (cfs)          *  405.00  * Flow (cfs)              *  202.40  *   46.77  *  155.83  *
* Top Width (ft)         *  340.50  * Top Width (ft)          *  138.32  *   37.05  *  165.13  *
```

```
* Vel Total (ft/s)        *    2.15  * Avg. Vel. (ft/s)        *    2.32  *    2.24  *    1.94  *
* Max Chl Dpth (ft)       *    3.09  * Hydr. Depth (ft)        *    0.63  *    0.56  *    0.49  *
* Conv. Total (cfs)       *  3815.7  * Conv. (cfs)             *  1906.9  *   440.6  *  1468.2  *
* Length Wtd. (ft)        *  534.05  * Wetted Per. (ft)        *  138.42  *   37.08  *  165.71  *
* Min Ch El (ft)          * 1043.20  * Shear (lb/sq ft)        *    0.44  *    0.40  *    0.34  *
* Alpha                   *    1.02  * Stream Power (lb/ft s) *10200.38  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.14  * Cum Volume (acre-ft)    *   13.55  *    3.67  *   10.58  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   31.23  *    3.42  *   19.79  *
*****************************************************************************************************
```

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2S2WS7B
REACH: A51 RS: 0.856

INPUT
Description:
Station Elevation Data num= 202

```
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9405.29 1041.09 9411.17 1041.09 9417.79 1041.04 9421.21    1041 9427.06 1040.93
 9431.24 1040.88 9436.17 1040.92 9441.28 1040.96  9445.6 1040.93 9451.31 1040.98
 9458.04 1040.81 9461.34 1040.72 9464.14 1040.71 9471.38 1040.54 9479.91 1040.57
 9481.41 1040.56 9482.68 1040.52 9491.44 1040.22 9491.95 1040.21 9498.08 1040.09
 9501.22 1040.02 9501.48 1040.02 9510.49 1039.97 9511.51 1039.95 9519.76 1039.89
 9521.55 1039.89 9529.03 1039.78 9531.58 1039.78  9538.3 1039.83 9541.61 1039.79
 9547.57 1039.78 9551.65 1039.79 9556.84 1039.77 9561.68 1039.64 9566.11 1039.56
 9571.72 1039.51 9575.38 1039.44 9581.75 1039.44 9584.65 1039.41 9591.78 1039.35
 9593.92 1039.38 9601.82  1039.3 9603.19 1039.31 9611.85  1039.4 9612.46 1039.38
 9619.79  1039.1 9621.73 1039.02 9621.89 1039.02 9622.07 1039.02 9634.46 1038.72
 9637.28 1038.76  9658.8 1039.06  9661.2 1039.03 9665.82 1039.06 9672.06  1039.3
 9676.75 1039.52 9682.09 1039.63 9686.61 1039.68 9692.12 1039.71 9698.62 1039.84
 9702.16 1039.91 9705.15 1039.93 9712.19 1039.96 9714.42 1039.98 9722.23 1040.05
 9731.43 1040.49 9732.26 1040.52 9732.96 1040.52 9741.49 1040.42 9742.23 1040.41
 9742.29 1040.41 9742.37 1040.41 9752.33 1040.57 9760.77 1040.87 9762.36 1040.89
 9764.24 1040.94 9772.39 1041.21 9779.31 1041.25 9782.43 1041.28 9786.11 1041.24
 9792.46 1041.03 9797.04 1040.88    9800 1040.84  9802.5  1040.8 9807.12 1040.88
 9812.53 1040.88 9818.91  1040.8 9822.56 1040.82 9825.66 1040.77  9832.6 1040.94
 9840.78 1040.79 9842.63 1040.79  9844.2  1040.8 9852.67 1040.73 9862.66  1040.8
  9862.7  1040.8  9863.2  1040.8 9872.01 1040.71 9872.73  1040.7 9881.28 1040.78
 9882.77 1040.79 9890.55 1040.74  9892.8 1040.75 9899.82 1040.83 9902.84 1040.82
 9909.09 1040.65 9912.87 1040.59 9918.36 1040.54  9922.9 1040.48 9927.63 1040.48
 9932.94 1040.64  9936.9  1040.6 9942.97 1040.51 9946.17 1040.54 9953.01 1040.64
 9955.43  1040.6 9963.04 1040.41  9964.7 1040.42 9973.07 1040.48  9987.5 1040.24
 9987.54 1040.24 9991.75 1040.11 9992.54 1039.83   10000 1037.3810000.02 1037.37
10025.53 1038.9910025.71    103910025.74    103910025.92 1038.9810030.91 1038.49
10035.39 1038.8510035.79 1038.8910039.55 1039.2210043.73 1039.2510053.34 1039.51
10059.49 1039.7610063.38 1039.7710066.67 1039.8710073.41 1040.1110081.37 1039.99
10083.45    104010085.21 1040.0110093.48 1040.0110103.24 1040.3510103.51 1040.35
10103.75 1040.3510106.61 1040.2610113.02 1040.0310113.55 1040.0310122.29 1040.13
10123.58 1040.1210131.56 1040.0110133.62 1040.0110140.83 1040.1110143.65 1040.08
 10150.1 1040.0810153.68 1040.0610159.37 1040.0510163.72 1040.0310168.64 1039.97
10173.75 1039.9810177.91 1039.8610183.79 1039.8110187.18 1039.7810193.82 1039.95
10197.17 1040.1110205.24 1040.2510212.02 1037.9110213.07 1037.8410217.58  1039.2
10232.88  1039.810233.96 1039.8410234.46 1039.8510243.99 1039.82 10245.4 1039.84
10254.02 1039.7910261.33  1039.810264.06 1039.7110267.27 1039.6510274.09 1039.43
 10278.2 1039.4410287.78 1039.4410295.87 1039.2510306.45  1039.910314.23 1040.31
10321.95 1041.1410324.26 1041.2310326.22 1041.2810334.29 1041.1110343.82 1040.94
10344.33 1040.9410344.76 1040.9510350.02 1041.1610354.36 1041.34 10363.3 1041.38
 10364.4 1041.4310365.69 1041.4310374.43 1041.6510381.84 1041.8810384.46 1041.86
10387.56 1041.8710392.83 1041.86
```

Manning's n Values num= 3

```
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9405.29     .05 9992.54    .04810066.67     .05
```

```
Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9992.5410066.67            499.58  500.93   504.7             .1       .3
```

CROSS SECTION OUTPUT Profile #100-Year

```
*****************************************************************************************************
* E.G. Elev (ft)          * 1040.01  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.06  * Wt. n-Val.              *   0.050  *    0.048  *   0.050  *
* W.S. Elev (ft)          * 1039.95  * Reach Len. (ft)         *  499.58  *   500.93  *  504.70  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   99.24  *    82.43  *   46.83  *
* E.G. Slope (ft/ft)      *0.005666  * Area (sq ft)            *   99.24  *    82.43  *   46.83  *
* Q Total (cfs)           *  405.00  * Flow (cfs)              *  140.65  *   205.20  *   59.16  *
* Top Width (ft)          *  393.16  * Top Width (ft)          *  197.01  *    74.13  *  122.02  *
* Vel Total (ft/s)        *    1.77  * Avg. Vel. (ft/s)        *    1.42  *     2.49  *    1.26  *
* Max Chl Dpth (ft)       *    2.58  * Hydr. Depth (ft)        *    0.50  *     1.11  *    0.38  *
* Conv. Total (cfs)       *  5380.6  * Conv. (cfs)             *  1868.6  *   2726.1  *   785.9  *
* Length Wtd. (ft)        *  502.10  * Wetted Per. (ft)        *  197.06  *    74.64  *  122.61  *
* Min Ch El (ft)          * 1037.37  * Shear (lb/sq ft)        *    0.18  *     0.39  *    0.14  *
* Alpha                   *    1.30  * Stream Power (lb/ft s) *10392.83  *     0.00  *    0.00  *
* Frctn Loss (ft)         *    3.09  * Cum Volume (acre-ft)    *   12.41  *     3.04  *    9.80  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   29.18  *     2.74  *   18.02  *
*****************************************************************************************************
```

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2S2WS7B
REACH: A51 RS: 0.761

INPUT
Description:
Station Elevation Data num= 210

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9339.34	1038.92	9340.86	1038.97	9348.86	1039.31	9358.89	1039.12	9358.93	1039.12
9368.99	1039.08	9370.3	1039.08	9379.06	1039.04	9381.67	1038.9	9389.12	1038.66
9393.04	1038.59	9399.19	1038.52	9404.41	1038.42	9409.25	1038.36	9415.78	1038.33
9419.32	1038.28	9427.15	1038.24	9429.38	1038.22	9438.52	1037.97	9439.45	1037.97
9446.64	1037.84	9449.52	1037.8	9458.25	1037.65	9459.58	1037.64	9461.26	1037.61
9469.65	1037.38	9472.63	1037.3	9479.71	1037.15	9485.34	1037.02	9489.78	1036.78
9495.37	1036.6	9499.84	1036.47	9503.4	1036.5	9509.91	1036.45	9518.11	1036.76
9519.98	1036.8	9521.46	1036.79	9530.04	1036.85	9534.39	1036.83	9540.11	1036.79
9540.85	1036.78	9550.17	1036.63	9557.58	1036.46	9562.23	1036.25	9570.63	1035.75
9574.05	1035.59	9576.6	1035.68	9590.43	1036.9	9597.7	1036.88	9600.5	1036.99
9609.07	1036.98	9610.57	1036.94	9620.44	1036.97	9620.63	1036.97	9622.14	1036.97
9630.23	1036.99	9630.7	1036.98	9631.22	1036.99	9640.76	1037.05	9649.27	1037.26
9650.83	1037.3	9658.79	1037.52	9660.89	1037.59	9663.25	1037.57	9670.96	1037.58
9677.83	1037.68	9681.02	1037.7	9684.61	1037.79	9691.09	1037.92	9696.87	1037.91
9701.16	1038.12	9706.39	1038.26	9711.22	1038.17	9716.64	1038.43	9721.29	1038.37
9725.43	1038.35	9731.35	1038.26	9738	1038.17	9741.42	1038.29	9744.47	1038.22
9751.48	1038.34	9759.35	1038.25	9761.55	1038.22	9763.51	1038.19	9771.61	1038.1
9773.03	1038.09	9781.68	1038.1	9791.39	1037.62	9791.75	1037.62	9792.07	1037.62
9797.64	1037.53	9800	1037.5	9801.81	1037.48	9802.35	1037.48	9811.88	1037.41
9813.72	1037.33	9821.94	1037.28	9825.09	1037.17	9832.01	1037	9836.46	1036.96
9842.07	1036.86	9847.83	1036.92	9852.14	1036.92	9859.2	1036.98	9862.2	1037.08
9870.57	1036.99	9872.27	1036.95	9881.94	1037.07	9882.34	1037.08	9885.39	1036.99
9891.68	1036.83	9892.4	1036.82	9893.31	1036.83	9902.47	1036.87	9904.68	1036.83
9912.53	1036.76	9918.77	1036.81	9922.6	1036.82	9927.42	1036.83	9932.66	1036.83
9936.83	1036.95	9942.73	1036.6	9950.16	1036.66	9952.79	1036.43	9954.89	1036.36
9962.86	1036.53	9972.9	1036.24	9972.93	1036.24	9986.46	1036.72	9988.2	1036.78
9990.67	1036.8	9993.29	1036.14	10000	1034.33	10000.19	1034.28	10006.79	1036.14
10008.66	1036.71	10010.64	1036.76	10011.68	1036.79	10023.25	1036.44	10029.75	1036.47
10033.32	1036.42	10036.16	1036.44	10043.38	1036.29	10052.49	1036.21	10053.45	1036.21
10054.22	1036.22	10060.89	1036.34	10063.25	1036.38	10063.52	1036.37	10063.86	1036.37
10073.58	1036.41	10081.31	1036.48	10083.65	1036.47	10090.34	1036.14	10093.71	1036.11
10097.97	1036.12	10103.78	1036.14	10108.39	1036.23	10113.84	1036.31	10120.7	1036.31
10123.91	1036.27	10126.45	1036.28	10133.98	1036.26	10143.44	1036.31	10144.04	1036.34
10144.51	1036.31	10148.64	1036.22	10154.11	1036.11	10162.57	1036.31	10164.56	1036.23
10165.75	1036.2	10177.8	1036.06	10178.49	1035.95	10180.2	1035.59	10186.12	1034.43
10187.36	1034	10192.58	1035.55	10200.78	1035.59	10204.67	1036.29	10207.72	1036.41
10214.5	1036.36	10223.03	1036.71	10224.57	1036.72	10225.78	1036.75	10234.63	1036.51
10236.39	1036.53	10244.7	1036.71	10252.87	1036.61	10254.76	1036.46	10257.14	1036.47
10264.83	1036.65	10270.93	1036.61	10274.89	1036.67	10279.88	1036.68	10284.96	1036.76
10291.25	1036.91	10295.02	1036.95	10298.02	1037	10305.09	1037.31	10313.99	1037.78
10315.16	1037.84	10316.08	1037.89	10324.14	1038.22	10325.22	1038.26	10325.36	1038.26
10335.29	1038.69	10336.73	1038.68	10345.35	1038.87	10348.1	1038.91	10353.7	1038.81

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9339.34	.05	9986.46	.04	10010.64	.05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9986.46 10010.64 498.95 500 500.76 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	1036.92	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.05	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	1036.87	Reach Len. (ft)	498.95	500.00	500.76
Crit W.S. (ft)	1036.60	Flow Area (sq ft)	59.22	25.02	159.94
E.G. Slope (ft/ft)	0.006703	Area (sq ft)	59.22	25.02	159.94
Q Total (cfs)	405.00	Flow (cfs)	73.34	63.71	267.95
Top Width (ft)	499.86	Top Width (ft)	196.32	24.18	279.36
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	1.24	2.55	1.68
Max Chl Dpth (ft)	2.87	Hydr. Depth (ft)	0.30	1.03	0.57
Conv. Total (cfs)	4946.6	Conv. (cfs)	895.8	778.1	3272.7
Length Wtd. (ft)	500.37	Wetted Per. (ft)	196.45	24.85	279.94
Min Ch El (ft)	1034.28	Shear (lb/sq ft)	0.13	0.42	0.24
Alpha	1.15	Stream Power (lb/ft s)	10353.70	0.00	0.00
Frctn Loss (ft)	3.55	Cum Volume (acre-ft)	11.50	2.42	8.60
C & E Loss (ft)	0.00	Cum SA (acres)	26.93	2.18	15.70

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2S2WS7B
REACH: A51 RS: 0.667

INPUT
Description:
Station Elevation Data num= 210

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9380.3	1035.26	9382.61	1035.27	9386.59	1035.28	9392.7	1035.14	9400.66	1035.19
9402.78	1035.15	9404.41	1035.17	9412.87	1035.06	9416.69	1035.02	9422.96	1034.95
9423.92	1034.93	9433.05	1034.77	9435.54	1034.76	9443.13	1034.61	9447.17	1034.62
9453.22	1034.61	9458.79	1034.56	9463.31	1034.55	9470.42	1034.54	9473.39	1034.53
9482.05	1034.43	9483.48	1034.42	9492.88	1034.4	9493.57	1034.4	9502.4	1034.31
9503.66	1034.28	9505.3	1034.31	9513.74	1034.39	9520.21	1034.4	9523.83	1034.33
9528.55	1034.21	9533.92	1034.05	9540.18	1034.12	9544.01	1034.13	9546.94	1034.1
9554.09	1034.12	9563.43	1033.94	9564.18	1033.94	9564.75	1033.91	9569.07	1033.73
9574.27	1033.52	9582.57	1033.12	9584.35	1033.07	9596.93	1032.47	9600.78	1032.2
9606.87	1032.76	9614.62	1033.49	9621.57	1033.41	9624.7	1033.43	9627.11	1033.46
9634.79	1033.6	9644.82	1033.76	9644.88	1033.76	9644.92	1033.76	9645.27	1033.76
9653.83	1033.65	9654.96	1033.64	9656.44	1033.64	9665.05	1033.59	9671.65	1033.56
9675.14	1033.56	9679.7	1033.61	9685.23	1033.7	9689.46	1033.61	9695.31	1033.49
9702.95	1033.43	9705.4	1033.42	9707.28	1033.44	9715.49	1033.34	9716.19	1033.35
9721.46	1033.45	9725.09	1033.53	9725.58	1033.53	9726.2	1033.55	9735.66	1033.9
9742.91	1034.05	9745.75	1034.14	9749.46	1034.3	9755.84	1034.26	9761.08	1034.05
9765.92	1034.06	9769.63	1034.14	9776.01	1034.2	9784.34	1034.43	9786.1	1034.48
9787.45	1034.46	9796.19	1034.48	9797.65	1034.51	9800	1034.54	9806.27	1034.65
9814.17	1034.56	9816.36	1034.63	9819.22	1034.59	9826.45	1034.65	9831.99	1034.58

```
 9836.54 1034.52 9842.47  1034.6 9846.62 1034.66  9854.1 1034.64 9856.71 1034.72
 9858.71 1034.73  9866.8 1034.63 9873.85  1034.5 9876.88 1034.47 9877.35 1034.46
 9886.97 1034.38 9888.97  1034.4 9897.06 1034.33  9900.6  1034.3 9907.15 1034.27
 9912.23 1034.28 9917.23 1034.22 9923.85 1034.06 9927.32 1034.04 9935.48 1033.82
 9937.41 1033.78 9947.11 1033.63  9947.5 1033.63 9950.04 1033.55 9957.58 1033.34
 9965.61 1033.02 9967.67     1033 9970.36 1032.84 9977.76 1032.67 9982.94 1032.74
 9989.47 1032.74 9992.87 1032.75  9998.6  1031.8   10000  1031.610000.47 1031.53
10003.63 1032.5110004.421032.747 10005.8 1033.1610007.41 1033.1910011.76 1033.17
10023.86  1033.110025.64 1032.8110037.46 1032.6510040.97 1033.4410050.39 1033.21
10058.45 1032.9510063.37 1032.8210068.54 1032.72 10072.5 1032.7810078.63 1032.69
10086.62 1032.7410088.72 1032.7410090.32 1032.73 10098.8  1032.710099.23 1032.72
10102.43 1032.6510108.89 1032.5610109.88 1032.5510118.98 1032.61 10121.5 1032.64
10129.07 1032.7310133.13 1032.7910139.15 1032.7310144.76 1032.7710149.24 1032.84
10156.38 1032.8410159.33 1032.8210162.01 1032.7610171.15 1032.4710174.15  1031.8
10176.82  1031.210182.34 1033.0810183.67  1033.610195.35 1032.8910199.68 1032.66
10206.12 1033.0110209.76 1032.9910215.03 1032.8910219.85 1032.8910226.14 1032.89
10229.94 1032.8110237.77 1032.7710240.03 1032.7510241.75 1032.8110250.11 1032.81
10254.81 1032.81 10260.2 1032.8410261.02 1032.8310270.29 1032.7810272.65 1032.78
10280.37 1032.8410284.28 1032.8110290.46 1032.77 10295.9 1032.8310300.55 1032.84
10307.53  1032.710310.64 1032.6710319.15 1032.7310320.72 1032.7510330.78 1032.71
10330.81 1032.71   10331 1032.7110339.74 1032.81 10340.9 1032.8210348.65 1032.86
10350.98 1032.8710354.03 1032.9310361.07 1032.9810366.46 1033.1310371.16 1033.22
10377.29 1033.2910381.25 1033.4210384.28 1033.4810391.33 1033.8710393.73 1034.05

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
  9380.3     .05 9992.87    .04810004.42     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9992.8710004.42             457.6  457.11  456.53             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         * 1033.37  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.05  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         * 1033.32  * Reach Len. (ft)        *  457.60  *  457.11  *  456.53  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *   34.23  *   13.73  *  184.82  *
* E.G. Slope (ft/ft)     *0.007522  * Area (sq ft)           *   34.23  *   13.73  *  184.82  *
* Q Total (cfs)          *  405.00  * Flow (cfs)              *   55.32  *   40.71  *  308.97  *
* Top Width (ft)         *  443.68  * Top Width (ft)          *   69.16  *   11.55  *  362.97  *
* Vel Total (ft/s)       *    1.74  * Avg. Vel. (ft/s)        *    1.62  *    2.97  *    1.67  *
* Max Chl Dpth (ft)      *    2.12  * Hydr. Depth (ft)        *    0.49  *    1.19  *    0.51  *
* Conv. Total (cfs)      *  4669.6  * Conv. (cfs)             *   637.9  *   469.4  *  3562.4  *
* Length Wtd. (ft)       *  456.72  * Wetted Per. (ft)        *   69.25  *   11.83  *  363.69  *
* Min Ch El (ft)         * 1031.53  * Shear (lb/sq ft)        *    0.23  *    0.54  *    0.24  *
* Alpha                  *    1.11  * Stream Power (lb/ft s) *10393.73  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.99  * Cum Volume (acre-ft)    *   10.97  *    2.20  *    6.62  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *   25.41  *    1.97  *   12.01  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 0.580

INPUT
Description: South of West Queen Creek road
Station Elevation Data     num=     209
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9445.69 1031.34 9447.37 1031.34 9453.53 1031.07 9457.43 1030.95 9462.25 1030.89
 9467.48 1030.84 9471.71 1030.85 9477.54 1030.82  9480.8 1030.84  9487.6 1030.87
 9496.01 1030.72 9497.65 1030.68 9498.98 1030.66 9507.71 1030.49 9511.46 1030.46
 9517.77 1030.41 9518.52  1030.4 9527.82 1030.17 9529.77 1030.18 9537.88 1030.28
 9541.02 1030.28 9547.93 1030.08 9552.07 1029.62 9560.84 1029.02 9571.01  1029.7
  9578.1 1030.05 9586.04 1030.18 9588.16  1030.2 9597.29 1030.26 9598.22 1030.26
 9605.99 1030.25 9608.27 1030.24 9620.85 1029.01  9622.3 1028.91 9624.32 1029.06
 9638.44 1030.17 9644.41 1030.19  9648.5 1030.23 9653.56 1030.27 9658.56 1030.25
 9662.59 1030.39 9668.61 1030.39 9676.07 1030.52 9678.67 1030.51 9687.32 1030.67
 9688.72 1030.68 9689.86  1030.7 9698.78 1030.71 9700.52 1030.73 9708.84 1030.85
 9709.83 1030.86 9718.89 1031.03 9721.08 1031.05 9728.95 1031.15 9732.33 1031.17
 9739.01 1031.22 9743.59  1031.3 9749.06 1031.36 9754.84 1031.35 9759.12 1031.39
  9766.1 1031.71 9769.18 1031.77 9777.35 1031.67 9779.23 1031.68  9788.6 1031.56
 9789.29 1031.56 9795.05 1031.58 9798.93 1031.58 9799.35 1031.58 9799.86 1031.59
  9809.4 1031.63 9817.11 1031.63 9819.46 1031.64 9822.36 1031.57 9829.51 1031.59
 9835.29 1031.97 9839.57 1032.07 9843.33 1032.04 9844.87 1032.03 9849.63 1031.71
 9853.47 1031.74 9859.68 1031.71 9862.56 1031.78 9869.74 1031.71 9878.63 1031.71
  9879.8 1031.68 9880.74 1031.66 9889.58 1031.52 9889.83 1031.52 9889.85 1031.52
 9889.89 1031.52 9899.91 1031.18 9901.14 1031.17 9909.97 1031.14  9917.1  1030.8
 9920.02  1030.7 9923.65 1030.72 9930.08 1030.71 9935.27 1030.64 9940.14 1030.63
 9946.15 1030.33 9950.19 1030.22 9953.45 1030.17 9960.25  1030.2 9968.66 1030.12
  9970.3 1030.12 9971.63 1030.12 9987.14  1030.6 9987.29  1030.6 9989.39  1030.7
 9991.15 1030.16 9996.72  1028.3   10000 1028.8810003.68 1029.5310007.32 1030.24
10007.78 1030.3310011.47 1030.2310014.75 1030.1510020.59 1030.1310024.93 1030.08
10030.64 1030.3210036.18 1030.32 10040.7 1030.2610047.44 1030.1710050.76 1030.13
10058.69 1029.7610060.81 1029.6410078.64 1029.5310080.52 1029.5210080.92 1029.52
10089.79  1029.410091.68 1029.3210103.25  1028.910105.71 1028.5510109.91  1027.8
10111.96  1028.3 10116.4  1029.610125.81 1029.6710131.21 1029.7210137.46 1029.74
10141.26  1029.710144.33 1029.7610151.32 1029.7310159.97 1029.8110161.38  1029.8
10162.51 1029.8210171.43 1029.9210173.17 1029.9310181.49 1029.9910182.48 1029.95
10191.55 1029.8910193.73 1029.91 10201.6 1029.9410202.14 1029.9310204.34 1029.93
10211.73 1030.1310213.05 1030.1610221.11 1030.0610221.86 1030.0510230.47 1030.17
   10232 1030.1510234.13 1030.1310242.13 1029.9210247.88 1029.9210252.26    1030
10256.59 1030.01 10262.4 1030.0810270.48 1029.8710272.53 1029.86   10274 1029.84
10282.66 1029.7510282.98 1029.7510291.42 1029.65 10292.8  1029.710300.12  1029.7
10302.93 1029.5610308.83 1029.5710313.06 1029.5710317.54 1029.54 10323.2 1029.63
10326.24  1029.610333.33 1029.5810334.95  1029.610343.46 1029.6210343.66 1029.62
10344.86 1029.62 10353.6 1029.6710361.07 1029.9110363.73 1029.9210367.42 1029.94
10373.86 1029.8710378.49 1030.04   10384 1030.1610391.66 1030.3610394.13 1030.39
 10395.9 1030.4510404.26 1030.5210404.61 1030.5210406.74  1030.6 10414.4 1030.88
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10422.02 1031.0810424.53  1031.110428.01 1031.1410434.66 1031.1910440.13 1031.44
10444.79 1031.6410448.15 1031.8810454.93 1032.1210460.92 1032.28

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9445.69     .05 9991.15    .04810007.32     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9991.1510007.32           507.76  506.16  504.56             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
 9445.69 9597.29  1030.5       F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1030.39  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.04  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1030.35  * Reach Len. (ft)         *  507.76  *  506.16  *  504.56  *
* Crit W.S. (ft)          * 1030.03  * Flow Area (sq ft)       *   32.80  *   17.86  *  212.38  *
* E.G. Slope (ft/ft)      *0.005742  * Area (sq ft)            *   63.73  *   17.86  *  212.38  *
* Q Total (cfs)           *  405.00  * Flow (cfs)              *   39.00  *   43.90  *  322.11  *
* Top Width (ft)          *  574.37  * Top Width (ft)          *  174.38  *   16.17  *  383.82  *
* Vel Total (ft/s)        *    1.54  * Avg. Vel. (ft/s)        *    1.19  *    2.46  *    1.52  *
* Max Chl Dpth (ft)       *    2.55  * Hydr. Depth (ft)        *    0.34  *    1.10  *    0.55  *
* Conv. Total (cfs)       *  5344.8  * Conv. (cfs)             *   514.6  *   579.3  *  4250.8  *
* Length Wtd. (ft)        *  505.67  * Wetted Per. (ft)        *   97.93  *   16.65  *  384.23  *
* Min Ch El (ft)          * 1028.30  * Shear (lb/sq ft)        *    0.12  *    0.38  *    0.20  *
* Alpha                   *    1.11  * Stream Power (lb/ft s) *10460.92  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.84  * Cum Volume (acre-ft)    *   10.45  *    2.03  *    4.54  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *   24.13  *    1.83  *    8.09  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 0.484

INPUT
Description: North of West Queen Creek Road
Station Elevation Data    num=     188
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9235.45 1028.74 9241.39 1028.65 9245.21 1028.65  9251.4  1028.6 9257.17 1028.56
  9261.4 1028.56 9265.93 1028.53 9271.41 1028.54 9276.29 1028.46 9281.41 1028.42
  9286.2 1028.39 9291.42 1028.37    9297  1028.4 9301.42  1028.4 9307.36 1028.39
 9311.43 1028.36 9315.23 1028.39 9321.44 1028.42 9328.08 1028.43 9331.44 1028.43
 9338.44 1028.31 9341.45 1028.27 9344.26 1028.31 9351.45 1028.15 9359.15 1028.06
 9361.46 1028.05 9369.51 1027.94 9371.47 1027.85 9373.29 1027.79 9381.47 1027.77
 9390.23 1027.75 9391.48 1027.75 9400.58 1027.66 9401.48 1027.65 9410.94 1027.67
 9411.49 1027.67    9412 1027.67 9421.49 1027.75 9427.04 1027.73  9431.5 1027.72
 9431.66 1027.71 9441.51  1027.6 9442.01  1027.6 9451.51  1027.5 9452.37 1027.51
 9461.52 1027.75 9462.73 1027.73 9471.52 1027.52 9473.09 1027.49 9481.53 1027.36
 9483.45 1027.35 9491.53 1027.05  9493.8 1026.97 9501.54 1026.87 9504.16    1027
 9515.39 1026.76 9522.96 1026.12 9524.76 1026.22 9531.85 1027.56 9537.28 1027.29
 9541.28 1027.07 9545.59 1026.94 9551.57 1026.98 9555.95 1026.93 9561.57 1026.99
 9566.31 1027.03 9571.58 1026.89 9576.67 1026.85 9581.59 1026.88 9587.03 1026.75
 9591.59 1026.61 9597.38 1026.92  9601.6    1027 9607.74 1026.82  9611.6 1026.81
  9618.1 1026.92 9621.61 1026.95 9628.46 1027.17 9631.62 1027.19 9638.82 1027.06
 9641.62 1027.06 9649.17 1027.13 9651.63 1027.15 9659.53  1027.2 9661.63 1027.26
 9669.89 1027.35 9671.64 1027.36 9680.25 1027.44 9681.64 1027.49  9690.6 1027.49
 9691.65 1027.48 9700.96 1027.84 9701.66 1027.85 9711.32 1027.64 9711.66 1027.64
 9721.34 1027.79 9721.67 1027.79 9731.33 1027.92 9731.67 1027.92 9732.04 1027.93
 9741.68  1027.8 9742.39 1027.79 9751.68 1027.91 9760.36 1027.95 9761.69 1027.98
 9763.11 1027.96  9771.7 1027.99 9773.47 1027.99  9781.7 1027.87 9789.39 1027.88
 9791.71 1027.87 9794.18 1027.84 9801.71 1027.72 9803.11 1027.74 9804.54 1027.77
 9811.72 1027.84  9814.9  1027.8 9821.73 1027.84  9828.1 1027.67 9831.73 1027.65
 9835.62 1027.57 9841.74 1027.46 9845.97 1027.47 9851.74 1027.49 9857.13 1027.39
 9861.75 1027.35 9866.69 1027.29 9871.75 1027.21 9877.05 1027.27 9881.76 1027.36
 9886.16 1027.37 9891.77 1027.47 9897.76  1027.3 9901.77 1027.24 9908.12 1027.22
 9911.78 1027.21 9915.19 1027.21 9921.78 1027.22 9928.84 1027.22 9931.79 1027.22
  9939.2 1027.37 9941.79 1027.38 9949.55  1027.4  9951.8 1027.48  9953.9 1027.41
 9961.81 1027.02 9970.27    1027 9971.81 1026.97 9975.35 1026.91 9984.93  1026.9
  9990.8 1026.89 9997.27 1024.01 9997.68  1023.8 9998.59 1024.01   10000 1024.35
10011.34 1027.0910012.65  1027.410029.77 1026.7510031.85 1026.6810033.03 1026.69
10051.86 1026.8610053.13 1026.8710061.86 1026.8810063.49 1026.8810071.87 1026.83
10073.85 1026.8110081.51 1026.7710082.02 1026.7610083.35 1026.78 10084.7 1026.77
10096.07 1026.6710097.49 1026.6610098.94  1026.710104.56 1026.9110110.12 1026.95
10111.64 1026.9510113.18 1026.9610118.71 1027.0610124.16 1027.2610125.78 1027.28
10127.42 1027.2510138.21 1027.1910141.65 1027.2210152.26 1027.2610154.06 1027.28
10155.89 1027.3810161.13 1027.6110165.39  1027.7

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9235.45     .05 9961.81    .04810011.34     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9961.8110011.34           402.44  399.66  395.39             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1027.55  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1027.49  * Reach Len. (ft)         *  402.44  *  399.66  *  395.39  *
* Crit W.S. (ft)          * 1027.21  * Flow Area (sq ft)       *  119.95  *   58.70  *   77.60  *
* E.G. Slope (ft/ft)      *0.005511  * Area (sq ft)            *  119.95  *   58.70  *   77.60  *
* Q Total (cfs)           *  405.00  * Flow (cfs)              *  144.32  *  148.95  *  111.72  *
* Top Width (ft)          *  535.90  * Top Width (ft)          *  339.25  *   49.53  *  147.12  *
* Vel Total (ft/s)        *    1.58  * Avg. Vel. (ft/s)        *    1.20  *    2.54  *    1.44  *
```

```
* Max Chl Dpth (ft)      *    3.69  * Hydr. Depth (ft)        *    0.35  *    1.19  *    0.53  *
* Conv. Total (cfs)      *  5455.7  * Conv. (cfs)              *  1944.2  *  2006.5  *  1505.0  *
* Length Wtd. (ft)       *  400.36  * Wetted Per. (ft)         *  339.47  *   50.58  *  147.19  *
* Min Ch El (ft)         * 1023.80  * Shear (lb/sq ft)         *    0.12  *    0.40  *    0.18  *
* Alpha                  *    1.38  * Stream Power (lb/ft s)   *10165.39  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.77  * Cum Volume (acre-ft)     *    9.38  *    1.59  *    2.86  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)           *   21.13  *    1.44  *    5.02  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 0.409

INPUT
Description:
Station Elevation Data    num=     198
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9307.21 1025.88 9312.96 1025.85 9315.92 1025.84 9316.39 1025.83 9326.01 1025.78
  9333.3 1025.62 9336.11 1025.68 9339.82 1025.47  9346.2 1025.34 9351.53 1025.52
  9356.3 1025.53 9359.91 1025.52 9366.39 1025.38 9374.96 1025.33 9376.49 1025.34
 9386.05 1025.36 9386.58 1025.36 9395.39 1025.23 9396.68 1025.24 9404.26 1025.32
 9406.77 1025.26 9413.13 1024.97 9416.87 1024.92 9421.81 1024.95 9426.96 1024.96
 9430.87 1024.92 9437.06 1024.79 9439.74 1024.79 9447.15 1024.76 9456.95 1024.58
 9457.25 1024.58 9457.48 1024.58 9459.14 1024.61 9466.35 1024.74 9467.34 1024.74
 9475.22 1024.67 9477.44 1024.68 9484.09 1024.78 9487.53 1024.78 9492.96  1024.8
 9497.63 1024.89 9501.83 1024.94 9507.72 1024.89  9510.7  1024.9 9517.82  1024.9
 9519.57  1024.9 9527.91 1024.93 9528.44 1024.93 9532.23 1024.84 9537.31 1024.72
 9538.01 1024.73 9538.94 1024.73  9548.1 1024.65 9555.05 1024.49  9558.2  1024.3
 9563.92 1024.19 9568.29  1024.1 9574.07 1023.86 9578.39 1023.72 9581.66 1023.64
 9588.48 1023.67 9590.53 1023.73 9598.58 1023.87 9605.31 1023.97 9608.27 1024.02
 9608.67 1024.02 9617.14 1024.15 9618.77 1024.18 9620.44 1024.18 9634.85  1024.3
 9637.81 1023.67 9642.39 1022.41 9643.78 1022.58 9650.42 1023.38 9653.29 1023.64
  9668.2 1023.91 9670.35 1023.93  9678.4 1023.98 9679.22 1023.98 9679.34 1023.98
 9679.49 1023.98 9689.43 1024.02 9696.96 1024.29 9699.53 1024.43 9705.83 1024.43
 9709.62 1024.36 9714.63 1024.38 9719.72 1024.32 9723.57 1024.42 9729.81  1024.4
 9732.44  1024.5 9739.91 1025.14 9749.76 1024.69    9750 1024.69 9750.18 1024.69
 9751.49 1024.73 9759.05 1024.93  9760.1 1024.94 9761.48 1024.96 9770.19 1025.11
 9773.19 1025.09 9780.29 1025.24 9785.66 1025.05 9790.38 1025.04 9796.61 1025.05
 9800.48 1025.05  9803.4 1025.06 9810.57 1024.99 9820.04 1025.06 9820.67 1025.06
 9821.14 1025.06 9824.58 1025.09 9830.01 1025.15 9830.76 1025.14 9838.88 1025.11
 9840.86 1025.11 9843.47 1025.08 9850.95  1024.9 9854.95 1024.91 9856.62 1024.92
 9861.05 1024.86 9865.49 1024.88 9871.14  1024.8  9878.6 1024.71 9881.24 1024.63
 9883.23 1024.63 9891.33  1024.7  9892.1  1024.7 9897.67 1024.58 9900.97 1024.51
 9901.43 1024.51 9909.84 1024.49 9911.52 1024.46 9918.71 1024.57 9921.62 1024.58
 9927.58 1024.61 9931.71 1024.66 9936.45 1024.61 9941.81 1024.52 9945.32 1024.56
  9951.9 1024.73 9954.19 1024.65    9962 1024.29 9963.06 1024.26 9970.75 1024.23
 9971.93 1024.23 9972.32 1024.24 9985.64 1025.06 9987.16 1024.68 9998.73 1021.72
   10000 1021.35 10000.6 1021.1810001.59 1021.4810007.69 1024.8210009.27 1024.79
10015.36  1024.710022.57 1024.5510030.87 1024.1710032.66  1024.210034.02 1024.14
10042.76 1024.2410042.99 1024.2410043.84 1024.2710058.81 1024.6910062.95 1024.74
 10069.5 1024.7910073.04 1024.9410078.37 1024.9110083.13 1024.9810087.24 1024.97
10092.83 1024.7910093.98 1024.7910095.71 1024.7910096.34  1024.810103.52 1024.72
10106.98 1024.7810111.32 1024.8310117.62 1024.8110123.25 1024.8910128.26 1024.95
10131.13 1024.93 10138.9 1024.7710142.53 1024.7710149.54 1024.6610150.34 1024.66
10152.52 1024.6310158.14 1024.5910160.18 1024.6310165.94 1024.8110170.82 1024.85
10173.75 1024.9510181.46 1024.9610181.55 1024.9610181.79 1024.9710192.11 1025.23
10197.16 1025.1410202.75 1025.2710204.96  1025.3

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9307.21     .05 9987.16    .04810009.27     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9987.1610009.27            588.62  583.06  575.76              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev  Permanent
 9307.21 9501.83 1024.94        F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)         * 1024.77  * Element                 *  Left OB  *  Channel  * Right OB  *
* Vel Head (ft)          *    0.13  * Wt. n-Val.              *   0.050   *   0.048   *   0.050   *
* W.S. Elev (ft)         * 1024.64  * Reach Len. (ft)         *  588.62   *  583.06   *  575.76   *
* Crit W.S. (ft)         * 1024.40  * Flow Area (sq ft)       *  127.32   *   34.99   *   10.92   *
* E.G. Slope (ft/ft)     *0.008929  * Area (sq ft)            *  127.54   *   34.99   *   10.92   *
* Q Total (cfs)          *  405.00  * Flow (cfs)              *  249.81   *  142.38   *   12.81   *
* Top Width (ft)         *  336.70  * Top Width (ft)          *  269.49   *   20.04   *   47.17   *
* Vel Total (ft/s)       *    2.34  * Avg. Vel. (ft/s)        *    1.96   *    4.07   *    1.17   *
* Max Chl Dpth (ft)      *    3.46  * Hydr. Depth (ft)        *    0.48   *    1.75   *    0.23   *
* Conv. Total (cfs)      *  4286.1  * Conv. (cfs)              *  2643.7   *  1506.8   *   135.6   *
* Length Wtd. (ft)       *  586.68  * Wetted Per. (ft)         *  262.93   *   21.33   *   47.19   *
* Min Ch El (ft)         * 1021.18  * Shear (lb/sq ft)         *    0.27   *    0.91   *    0.13   *
* Alpha                  *    1.51  * Stream Power (lb/ft s)   *10204.96   *    0.00   *    0.00   *
* Frctn Loss (ft)        *    3.85  * Cum Volume (acre-ft)     *    8.24   *    1.16   *    2.46   *
* C & E Loss (ft)        *    0.03  * Cum SA (acres)           *   18.32   *    1.13   *    4.14   *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 0.298
```

```
INPUT
Description:
Station Elevation Data     num=      245
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9259.21 1021.95 9263.09 1022.01 9263.63 1022.01 9264.96    1022 9271.32 1022.01
 9273.87 1022.07 9279.01 1022.05 9284.64 1021.85  9286.7 1021.83 9291.85 1021.73
 9294.39 1021.67 9295.41 1021.64 9302.09 1021.54 9306.18 1021.57 9315.76  1021.4
 9316.96 1021.37 9317.47 1021.38 9318.75 1021.38 9325.16 1021.41 9327.73 1021.41
 9332.85 1021.33  9338.5 1021.34 9340.54 1021.35 9345.65 1021.19 9348.24 1021.11
 9349.27 1021.16  9351.7 1021.07 9360.04 1020.97 9363.62 1020.96 9370.82 1020.91
 9371.31 1020.91 9372.54 1020.89 9381.59 1020.77 9387.63 1020.78 9392.36 1020.81
 9394.38  1020.7 9399.44 1020.64 9402.08  1020.6 9403.13 1020.58 9409.77 1020.41
 9413.91 1020.31 9423.57 1020.13 9424.68 1020.12 9425.15 1020.11 9426.33 1020.06
 9432.84 1019.86 9435.45 1019.76 9440.53 1019.73 9446.22  1019.6 9448.23 1019.59
 9457.07 1019.57 9461.52 1019.43 9478.08 1019.79 9478.99 1019.81 9480.13 1019.83
 9489.31 1020.02 9494.38 1020.03 9500.08 1020.13 9502.07 1020.17 9507.02 1020.13
 9509.76  1020.1 9510.86 1020.08 9517.45 1020.18 9521.63 1020.26 9531.39 1020.45
 9531.81 1020.45  9532.4 1020.46 9532.83 1020.47 9533.92 1020.45 9540.53 1020.38
 9543.17 1020.39 9549.36 1020.44 9553.94 1020.51 9560.81 1020.59 9564.72 1020.63
 9571.29 1020.66 9575.49 1020.67 9578.98 1020.66 9586.26 1020.63 9586.68 1020.63
 9587.71 1020.62 9594.37  1020.6 9597.03 1020.62 9602.06 1020.54 9607.81 1020.55
 9609.75 1020.55 9614.61 1020.49 9617.44 1020.46 9618.58 1020.46 9625.13 1020.41
 9629.35 1020.42 9632.83  1020.5 9640.12  1020.4 9640.52 1020.39  9641.5 1020.37
 9648.21 1020.29 9650.89 1020.32 9657.17 1020.44 9661.67 1020.54 9663.59 1020.55
  9668.4 1020.58 9671.28 1020.55 9672.44 1020.57 9678.98 1020.81 9683.21 1020.75
 9686.67 1020.57 9693.98 1020.57 9694.36 1020.57  9695.3 1020.59 9702.05 1020.72
 9706.13  1020.7 9717.45  1020.6 9717.85 1020.47 9724.97 1018.16 9732.27 1019.27
 9737.71  1020.2 9747.02 1020.43  9748.2 1020.47 9749.09 1020.49 9755.89 1020.63
 9758.62 1020.66 9763.58 1020.51 9769.39 1020.35 9775.98 1020.48 9778.97 1020.56
 9780.16 1020.54 9786.66 1020.41 9790.93  1020.6 9794.35 1020.67 9801.71 1020.75
 9802.04 1020.76 9802.88 1020.76 9809.73  1020.7 9812.48 1020.81 9817.43 1020.86
 9823.25 1020.84 9829.78 1020.69 9832.81  1020.6 9834.02 1020.56  9840.5 1020.74
  9844.8 1020.88 9850.08  1020.8 9856.67 1021.01 9862.04 1021.07 9866.34  1021.3
 9871.27 1020.98 9877.11 1020.52 9883.57 1020.39 9887.88 1020.18 9892.36  1020.4
 9894.34  1020.5 9898.66 1020.69 9908.74 1021.18 9909.43 1021.18 9910.46 1021.19
  9920.2 1021.03 9925.11 1020.82 9930.97 1020.98  9932.8 1021.07 9937.36 1021.12
 9940.49 1021.17 9941.75 1021.14 9948.18  1021.1 9952.52 1021.08 9955.87 1020.99
 9963.29 1020.95 9963.57 1020.95 9964.26 1020.92 9971.26 1020.68 9974.06 1020.76
 9981.76 1020.97 9989.55 1021.04 9990.29 1021.05 9996.48 1019.63 9999.27 1018.93
   10000 1019.0610005.36 1020.0210007.08 1020.2310008.37 1020.3510011.16 1020.74
10012.83 1020.9410013.981021.072 10014.4 1021.1210015.63 1021.0710017.65 1021.01
10019.84  1020.910027.92  1020.810032.79  1020.7 10038.7  1020.710040.48 1020.67
10044.94 1020.4810048.17 1020.3210049.47 1020.3210052.49 1020.3810060.24 1020.56
10063.56 1020.6410071.01 1020.7810071.84  1020.810081.78 1021.0410088.93 1021.48
 10096.4 1021.4110105.79 1022.74 10106.3 1022.5810107.22 1022.2310115.83 1019.01
10123.03 1021.0410129.12 1023.1910133.23  1022.910137.99 1022.6510146.42 1022.02
10148.17 1022.0510152.53 1021.7510157.19 1021.4410163.55  1021.510167.96 1021.55
10171.24 1021.5710178.72 1021.6110178.74 1021.6110178.92 1021.6110179.14 1021.61
10188.81 1021.6710202.91  1021.610205.25 1021.6110206.27  1021.610208.64 1021.66
10220.25 1021.8210228.16 1021.8610230.45 1021.8310236.28 1021.7410240.43 1021.64
10243.45 1021.5810247.69 1021.6510250.62 1021.7410252.71 1021.9910257.79 1022.39
10264.92 1022.6910264.96 1022.6910264.99 1022.6910272.13 1022.9610277.26 1022.84
 10279.3 1022.8910282.16 1022.9310286.47 1022.8510289.54 1022.9310295.41 1022.76

Manning's n Values         num=       3
    Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9259.21     .05 9989.55    .04810013.98     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9989.5510013.98            596.46  604.85  613.63              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1020.90  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *     0.03 * Wt. n-Val.              *    0.050 *    0.048 *    0.050 *
* W.S. Elev (ft)          * 1020.87  * Reach Len. (ft)         *   596.46 *   604.85 *   613.63 *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   252.43 *    19.26 *    23.25 *
* E.G. Slope (ft/ft)      *0.005016  * Area (sq ft)            *   252.43 *    19.26 *    23.25 *
* Q Total (cfs)           *   405.00 * Flow (cfs)              *   334.82 *    39.20 *    30.97 *
* Top Width (ft)          *   606.78 * Top Width (ft)          *   521.78 *    21.15 *    63.85 *
* Vel Total (ft/s)        *     1.37 * Avg. Vel. (ft/s)        *     1.33 *     2.04 *     1.33 *
* Max Chl Dpth (ft)       *     2.71 * Hydr. Depth (ft)        *     0.48 *     0.91 *     0.36 *
* Conv. Total (cfs)       *   5718.5 * Conv. (cfs)             *   4727.6 *    553.6 *    437.3 *
* Length Wtd. (ft)        *   599.62 * Wetted Per. (ft)        *   522.45 *    21.53 *    64.46 *
* Min Ch El (ft)          * 1018.93  * Shear (lb/sq ft)        *     0.15 *     0.28 *     0.11 *
* Alpha                   *     1.06 * Stream Power (lb/ft s) *10295.41 *     0.00 *     0.00 *
* Frctn Loss (ft)         *     3.18 * Cum Volume (acre-ft)    *     5.67 *     0.79 *     2.23 *
* C & E Loss (ft)         *     0.00 * Cum SA (acres)          *    12.98 *     0.85 *     3.40 *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 0.184

INPUT
Description:
Station Elevation Data     num=      136
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9472.36 1018.55  9477.9 1018.42 9482.28 1018.32 9487.94  1018.4 9492.28 1018.38
 9496.61 1018.45 9502.29 1018.45    9508 1018.52 9512.29 1018.66 9518.03 1018.55
 9522.29 1018.55 9526.51 1018.34 9532.29 1018.35 9536.48 1018.25 9545.42 1017.91
 9553.71 1017.48 9562.35  1017.1 9565.12  1016.9 9566.87 1017.05 9571.01 1017.31
 9576.17  1017.7 9578.01 1017.78 9590.58 1017.45 9596.21 1017.53 9602.62  1017.8
 9612.15 1017.87 9616.53 1017.22  9628.1 1015.76 9629.56 1015.56  9630.1  1015.5
 9641.31 1016.21 9649.51 1016.74 9653.84 1016.98  9657.7  1017.3 9667.79 1017.22
 9678.55 1017.19 9682.29 1017.18    9686 1017.13 9692.29 1016.94 9698.61 1016.51
 9702.29  1016.3 9708.64 1016.39 9712.29 1016.43 9715.91 1016.58 9722.29 1016.95
```

```
 9728.71 1017.07 9732.29 1017.14 9738.74 1017.11 9742.29 1017.18 9748.77 1017.37
 9752.29 1017.47 9755.78 1017.48 9762.29 1017.54 9768.83 1017.69 9772.29 1017.71
 9778.87 1017.88 9782.29 1018.03 9785.68 1018.15 9792.29 1018.43 9798.93 1018.27
 9802.29  1018.2 9808.96 1018.13 9810.55 1018.11 9812.29 1018.08 9815.59 1018.09
 9822.29 1018.09 9829.03 1017.73 9832.29 1017.61 9839.06 1017.61 9842.29  1017.6
 9845.49 1017.61 9852.29 1017.63    9866 1017.58 9872.29 1017.68 9879.19  1017.8
 9882.29 1017.68 9885.37 1017.64 9892.29 1017.67 9899.25 1017.52 9902.29 1017.55
 9909.28 1017.37 9912.29 1017.38 9915.27 1017.36 9922.29 1017.51 9929.35 1017.62
 9932.29 1017.57 9939.38 1017.31 9942.29 1017.32 9945.18 1017.37 9952.29 1017.38
 9959.44 1017.33 9962.29  1017.3 9969.48 1017.38 9972.29 1017.69 9980.26 1017.61
 9982.99 1017.68 9986.84 1017.78 9989.06 1017.81 9994.67 1016.4310000.11 1016.45
10008.36 1016.4710009.04 1016.6110009.69 1016.7310011.09 1017.0110011.52 1017.08
10012.59 1017.2710014.17 1017.5510014.45  1017.610015.14 1017.5810016.53 1017.55
10017.16 1017.5310018.19 1017.4310019.03 1017.4210019.55 1017.41 10020.4 1017.39
10029.67 1017.5810032.29 1017.55 10039.7 1017.5810042.29 1017.5910044.86  1017.4
10052.29 1016.8710059.77 1016.6110062.29  1016.8 10069.8  1017.410072.29 1017.55
10074.76 1017.4610082.29 1017.2410089.86 1017.2910092.29 1017.2910099.89  1016.6
10102.29 1016.4210104.67 1016.4110112.29 1016.5710119.96 1017.8410122.29 1018.16
10122.55 1018.15

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9472.36     .05 9616.53    .048  9657.7     .05 9989.06    .04810014.45     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9989.0610014.45            446.13  449.16  449.87             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1017.71  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.              *    0.049 *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1017.66  * Reach Len. (ft)         *   446.13 *  449.16  *  449.87  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   151.91 *   23.36  *   52.44  *
* E.G. Slope (ft/ft)      *0.005615  * Area (sq ft)            *   151.91 *   23.36  *   52.44  *
* Q Total (cfs)           *  405.00  * Flow (cfs)              *   279.59 *   51.73  *   73.68  *
* Top Width (ft)          *  458.71  * Top Width (ft)          *   329.50 *   24.79  *  104.43  *
* Vel Total (ft/s)        *    1.78  * Avg. Vel. (ft/s)        *     1.84 *    2.21  *    1.41  *
* Max Chl Dpth (ft)       *    2.16  * Hydr. Depth (ft)        *     0.46 *    0.94  *    0.50  *
* Conv. Total (cfs)       *  5404.6  * Conv. (cfs)             *   3731.1 *   690.3  *   983.3  *
* Length Wtd. (ft)        *  447.35  * Wetted Per. (ft)        *   329.83 *   25.04  *  104.64  *
* Min Ch El (ft)          * 1016.43  * Shear (lb/sq ft)        *     0.16 *    0.33  *    0.18  *
* Alpha                   *    1.05  * Stream Power (lb/ft s) *10122.55 *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.39  * Cum Volume (acre-ft)    *     2.90 *    0.50  *    1.70  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *     7.15 *    0.53  *    2.22  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 2S2WS7B
REACH: A51                RS: 0.099

INPUT
Description:
Station Elevation Data     num=     120
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9534.63 1015.73 9537.67  1015.7 9544.62 1015.34 9547.56 1015.31 9554.62 1015.11
 9557.45 1015.05 9564.62 1014.81 9567.33 1014.75 9574.63 1014.59 9577.22 1014.81
 9584.63  1014.7 9587.11 1014.46 9594.63 1014.39    9597 1014.32 9604.63 1014.35
 9606.88 1014.37 9614.63 1014.69  9629.9 1014.61 9630.58  1014.6 9630.77  1014.6
 9631.13 1014.57 9642.76 1013.57 9649.78 1014.67 9653.74 1015.35 9659.76 1014.93
 9664.63 1014.59 9666.21 1014.65 9674.63 1014.51  9676.1  1014.5 9684.63 1014.79
 9685.98 1014.84 9694.63 1014.98 9695.87 1014.99 9704.63 1015.01 9705.76 1015.05
 9714.63 1015.18 9715.65 1015.16 9724.64 1015.26 9725.53 1015.27 9734.64 1015.26
 9735.42 1015.25 9744.64 1015.52 9745.31 1015.54 9754.64 1015.58 9755.19 1015.59
 9764.64 1015.84 9765.08 1015.83 9774.64 1015.78 9774.97 1015.77 9784.64 1015.47
 9784.86 1015.46 9794.64 1015.14 9794.74 1015.14  9803.9 1015.22 9804.63 1015.23
 9804.64 1015.23 9814.52 1015.54 9814.64 1015.53 9814.77 1015.54 9824.64 1014.97
 9834.29 1014.77 9834.64 1014.75 9853.51 1014.93 9854.64 1014.95 9855.23 1014.95
 9864.64 1014.66 9871.72 1014.89 9874.06 1014.96 9874.65 1014.96 9881.54 1015.11
 9884.69 1015.18 9884.96 1015.17 9894.72 1014.95 9895.85 1014.94 9904.75 1014.89
 9906.75 1014.86 9914.78 1014.71 9917.64 1014.75 9924.81 1014.74 9928.54 1014.69
 9934.84 1014.67 9939.44 1014.58 9944.87 1014.48 9950.33 1014.49 9954.91 1014.48
 9961.23  1014.5 9964.94 1014.51 9972.12 1014.86 9974.97 1015.01 9985.96 1015.22
 9986.15 1015.22 9987.03 1015.22 9989.64 1014.76 9998.93  1013.110001.42 1013.46
10002.24 1013.5610005.72 1014.0210014.261015.15610015.34  1015.3 10017.5  1015.2
10018.92 1015.1310033.16 1014.6610035.16 1014.66 10037.5 1014.7410045.19 1014.82
10048.39 1014.68 10050.8 1014.6510055.22  1014.610061.04 1014.3810065.25 1014.54
10070.18 1014.3510075.28 1014.2510081.08 1014.4310085.31 1014.4610088.92 1014.43
10095.35 1014.4510102.87 1014.7710105.38    101510113.77 1015.9110113.93 1015.92

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9534.63     .05 9985.96    .04810014.26     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9985.9610014.26            497.35  486.86  481.74             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          * 1015.31  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.04  * Wt. n-Val.              *    0.050 *   0.048  *   0.050  *
* W.S. Elev (ft)          * 1015.27  * Reach Len. (ft)         *   497.35 *  486.86  *  481.74  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   175.69 *   30.68  *   58.55  *
* E.G. Slope (ft/ft)      *0.005080  * Area (sq ft)            *   175.69 *   30.68  *   58.55  *
* Q Total (cfs)           *  405.00  * Flow (cfs)              *   242.50 *   70.88  *   91.62  *
* Top Width (ft)          *  488.84  * Top Width (ft)          *   367.71 *   28.30  *   92.83  *
* Vel Total (ft/s)        *    1.53  * Avg. Vel. (ft/s)        *     1.38 *    2.31  *    1.56  *
* Max Chl Dpth (ft)       *    2.17  * Hydr. Depth (ft)        *     0.48 *    1.08  *    0.63  *
```

* Conv. Total (cfs)	* 5682.4	* Conv. (cfs)	* 3402.4	* 994.5	* 1285.5	*
* Length Wtd. (ft)	* 487.51	* Wetted Per. (ft)	* 368.01	* 28.62	* 92.90	*
* Min Ch El (ft)	* 1013.10	* Shear (lb/sq ft)	* 0.15	* 0.34	* 0.20	*
* Alpha	* 1.12	* Stream Power (lb/ft s)	*10113.93	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 2.62	* Cum Volume (acre-ft)	* 1.23	* 0.22	* 1.13	*
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 3.58	* 0.26	* 1.20	*

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 2S2WS7B
REACH: A51 RS: 0.006

INPUT
Description: West Ryan Street Alignment
Station Elevation Data num= 154

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9358.48	1012.69	9358.61	1012.68	9368.47	1012.55	9378.04	1012.31	9378.47	1012.31
9378.92	1012.32	9388.47	1012.36	9397.75	1012.23	9399.25	1012.19	9401.69	1012.19
9415.82	1012.16	9418.99	1012.18	9426.83	1012.31	9440.98	1012.42	9445.21	1012.4
9449.85	1012.38	9458.48	1012.41	9462.63	1012.45	9468.57	1012.44	9473.9	1012.52
9478.59	1012.46	9483.81	1012.47	9488.6	1012.44	9492.91	1012.52	9498.62	1012.61
9502.41	1012.57	9508.63	1012.58	9515.56	1012.48	9518.65	1012.56	9526.15	1012.64
9528.66	1012.57	9530.91	1012.61	9538.68	1012.8	9547.32	1012.45	9548.69	1012.46
9557.91	1012.43	9558.7	1012.43	9568.5	1012.44	9568.72	1012.43	9568.92	1012.44
9572.63	1012.62	9578.42	1012.91	9578.73	1012.91	9579.08	1012.94	9588.75	1013.2
9597.42	1012.9	9598.76	1012.84	9606.93	1012.94	9608.78	1012.94	9610.84	1013.01
9618.79	1013.09	9625.93	1013.06	9628.81	1012.87	9635.43	1012.62	9638.82	1012.58
9642.6	1012.65	9648.84	1012.49	9654.43	1012.59	9658.85	1012.5	9663.93	1012.55
9668.86	1012.71	9680.52	1012.57	9688.89	1012.53	9692.44	1012.56	9698.91	1012.68
9701.94	1012.72	9708.92	1012.56	9716.7	1012.68	9718.94	1012.66	9720.94	1012.64
9728.95	1012.58	9730.45	1012.61	9738.97	1012.88	9748.46	1013.23	9748.98	1013.24
9749.45	1013.24	9758.1	1013.12	9758.95	1013.1	9759.06	1013.1	9769.37	1012.8
9778.98	1012.57	9787.96	1012.66	9796.37	1012.5	9800.75	1012.53	9809.47	1012.73
9817.65	1013.25	9825.33	1013.17	9832.54	1013.21	9840.45	1013.78	9847.89	1013.45
9854.9	1012.93	9865.46	1013.05	9872.48	1012.44	9879.09	1012.54	9885.32	1012.86
9891.19	1012.96	9905.35	1013.14	9911.09	1013.18	9916.5	1013.44	9921.6	1013.51
9932.47	1013.64	9937.31	1013.77	9947.27	1013.88	9950.83	1013.89	9954.15	1013.9
9966.5	1014.07	9967.92	1014.08	9973.19	1014.2	9979.81	1013.84	9982.62	1013.69
9988.94	1013.1	9997.8	1012.12	9998.05	1012.09	10002.04	1011.6	10008.74	1012.32
10015.44	1013.07	10020.89	1013.85	10023.15	1014.07	10028.01	1014.56	10030.66	1014.83
10032.63	1015.12	10036.83	1014.56	10039.22	1014.28	10049.71	1013.26	10051.9	1013
10060	1011.8	10060.17	1011.79	10060.87	1011.76	10068.44	1011.58	10070.3	1011.35
10076.71	1011.05	10080.59	1010.62	10087.01	1010.69	10090.89	1010.63	10093.25	1010.62
10101.19	1011.14	10101.51	1011.14	10102.84	1011.22	10111.48	1011.54	10118.05	1011.53
10121.78	1011.62	10127.94	1011.58	10132.08	1011.61	10134.59	1011.63	10142.37	1011.54
10144.82	1011.33	10151.12	1010.73	10152.67	1010.61	10155.22	1010.92	10162.97	1011.83
10167.66	1012.24	10173.26	1012.35	10175.93	1012.38	10183.56	1013		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9358.48	.05	9988.94	.048	10015.44	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9988.94	10015.44	0	0	0	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

* E.G. Elev (ft)	* 1012.69	* Element	* Left OB	* Channel	* Right OB	*
* Vel Head (ft)	* 0.09	* Wt. n-Val.	* 0.050	* 0.048	* 0.050	*
* W.S. Elev (ft)	* 1012.60	* Reach Len. (ft)	*	*	*	*
* Crit W.S. (ft)	* 1012.04	* Flow Area (sq ft)	* 38.96	* 8.77	* 145.47	*
* E.G. Slope (ft/ft)	*0.005709	* Area (sq ft)	* 38.96	* 8.77	* 145.47	*
* Q Total (cfs)	* 405.00	* Flow (cfs)	* 29.43	* 12.77	* 362.79	*
* Top Width (ft)	* 400.51	* Top Width (ft)	* 258.79	* 17.74	* 123.99	*
* Vel Total (ft/s)	* 2.10	* Avg. Vel. (ft/s)	* 0.76	* 1.46	* 2.49	*
* Max Chl Dpth (ft)	* 2.00	* Hydr. Depth (ft)	* 0.15	* 0.49	* 1.17	*
* Conv. Total (cfs)	* 5360.3	* Conv. (cfs)	* 389.6	* 169.1	* 4801.7	*
* Length Wtd. (ft)	*	* Wetted Per. (ft)	* 258.83	* 17.85	* 124.27	*
* Min Ch El (ft)	* 1011.60	* Shear (lb/sq ft)	* 0.05	* 0.18	* 0.42	*
* Alpha	* 1.29	* Stream Power (lb/ft s)	*10183.56	* 0.00	* 0.00	*
* Frctn Loss (ft)	*	* Cum Volume (acre-ft)	*	*	*	*
* C & E Loss (ft)	*	* Cum SA (acres)	*	*	*	*

Warning: Divided flow computed for this cross-section.

SUMMARY OF MANNING'S N VALUES

River:1S2WS31

Reach	River Sta.	n1	n2	n3	n4	n5
A56	2.619	.05	.048	.05	.048	.05
A56	2.512	.05	.048	.05		
A56	2.390	.05	.048	.05		
A56	2.280	.05	.048	.05		
A56	2.142	.05	.048	.05		
A56	2.123	.05	.048	.05		
A56	2.085	.05	.048	.05		
A56	1.991	.05	.048	.05		
A56	1.904	.05	.048	.05		
A56	1.809	.05	.048	.05		
A56	1.702	.05	.048	.05		
A56	1.613	.05	.048	.05		
A56	1.518	.05	.048	.05		
A56	1.423	.05	.048	.05		

*A56	*	1.331	*	.05*	.048*	.05*	*	*
*A56	*	1.234	*	.05*	.048*	.05*	*	*
*A56	*	1.139	*	.05*	.048*	.05*	*	*
*A56	*	1.044	*	.05*	.048*	.05*	*	*
*A56	*	0.950	*	.05*	.048*	.05*	*	*
*A56	*	0.837	*	.05*	.048*	.05*	*	*
*A56	*	0.760	*	.05*	.048*	.05*	*	*
*A56	*	0.666	*	.05*	.048*	.05*	*	*
*A56	*	0.571	*	.05*	.048*	.05*	*	*
*A56	*	0.477	*	.05*	.048*	.05*	*	*
*A56	*	0.381	*	.05*	.048*	.05*	*	*
*A56	*	0.154	*	.05*	.048*	.05*	*	*
*A56	*	0.055	*	.05*	.048*	.05*	*	*

River:2S2WS7A

* Reach	*	River Sta.	*	n1	*	n2	*	n3	*	n4	*	n5	*	n6	*	n7	*
*A52	*	2.421	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	2.354	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	2.234	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	2.139	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	2.062	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	1.950	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	1.855	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	1.764	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	1.681	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	1.587	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	1.483	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	1.382	*	.05*		.048*		.05*		.048*		.05*		.048*		.05*	
*A52	*	1.287	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	1.196	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	1.108	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	1.009	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	0.910	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	0.817	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	0.719	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	0.624	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	0.562	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A52	*	0.443	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	0.340	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	0.254	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	0.152	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	0.059	*	.05*		.048*		.05*		*		*		*		*	
*A52	*	0.019	*	.05*		.048*		.05*		.048*		.05*		*		*	

River:2S2WS7B

* Reach	*	River Sta.	*	n1	*	n2	*	n3	*	n4	*	n5	*	n6	*	n7	*
*A51	*	1.894	*	.05*		.048*		.05*		.048*		.05*		.048*		.05*	
*A51	*	1.804	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A51	*	1.704	*	.05*		.048*		.05*		.048*		.05*		.048*		.05*	
*A51	*	1.614	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A51	*	1.524	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A51	*	1.424	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	1.333	*	.05*		.048*		.05*		.048*		.05*		.048*		.05*	
*A51	*	1.235	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	1.151	*	.05*		.048*		.05*		.048*		.05*		.048*		.05*	
*A51	*	1.061	*	.05*		.048*		.05*		.048*		.05*		.048*		.05*	
*A51	*	0.958	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.856	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.761	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.667	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.580	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.484	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.409	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.298	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.184	*	.05*		.048*		.05*		.048*		.05*		*		*	
*A51	*	0.099	*	.05*		.048*		.05*		*		*		*		*	
*A51	*	0.006	*	.05*		.048*		.05*		*		*		*		*	

SUMMARY OF REACH LENGTHS

River: 1S2WS31

* Reach	*	River Sta.	*	Left	*	Channel	*	Right	*
*A56	*	2.619	*	557.8*		562.48*		562.9*	
*A56	*	2.512	*	636.15*		642.76*		647.38*	
*A56	*	2.390	*	574.11*		582.64*		588.46*	
*A56	*	2.280	*	724.11*		730.73*		735.01*	
*A56	*	2.142	*	99.21*		99.35*		99.49*	
*A56	*	2.123	*	198.35*		198.86*		200.55*	
*A56	*	2.085	*	494.85*		494.88*		494.92*	
*A56	*	1.991	*	463.41*		460.21*		458.75*	
*A56	*	1.904	*	508.23*		501.96*		494.84*	
*A56	*	1.809	*	568.5*		567.66*		581.36*	
*A56	*	1.702	*	478.41*		470.56*		461.4*	
*A56	*	1.613	*	494.72*		501.59*		508.54*	
*A56	*	1.518	*	504.37*		498.41*		486.97*	
*A56	*	1.423	*	487.28*		486.32*		483.66*	
*A56	*	1.331	*	510.14*		512.63*		515.72*	
*A56	*	1.234	*	501.23*		501.05*		500.61*	
*A56	*	1.139	*	507*		502.82*		496.87*	
*A56	*	1.044	*	491.17*		496.74*		504.11*	
*A56	*	0.950	*	584.93*		593.34*		603.23*	
*A56	*	0.837	*	407.83*		407.1*		406.41*	
*A56	*	0.760	*	499.79*		500*		501.07*	
*A56	*	0.666	*	503.09*		498.05*		494.49*	
*A56	*	0.571	*	510.56*		498.07*		494*	

*A56	0.477	510.23	503.88	492.38
*A56	0.381	1194.97	1203.49	1243.21
*A56	0.154	487.67	521.92	555.24
*A56	0.055	0	0	0

River: 2S2WS7A

Reach	River Sta.	Left	Channel	Right
*A52	2.421	348.96	354.07	350.38
*A52	2.354	623.76	633.69	628.21
*A52	2.234	497.34	500	501.02
*A52	2.139	398.41	405.78	406.65
*A52	2.062	596.87	594.22	587.87
*A52	1.950	498.33	499.32	502.32
*A52	1.855	479.94	482.24	487.28
*A52	1.764	444.34	437.88	431.43
*A52	1.681	492.4	497.82	503.52
*A52	1.587	552.07	549.27	541.36
*A52	1.483	531.92	533.45	534.97
*A52	1.382	503.8	500	496.8
*A52	1.287	476.79	481.71	484.32
*A52	1.196	457.73	462.76	465.74
*A52	1.108	533.79	522.18	514.69
*A52	1.009	521.09	524.47	524.96
*A52	0.910	481.63	490.79	498.29
*A52	0.817	521.21	518.1	511.46
*A52	0.719	495.06	500.42	504.78
*A52	0.624	331	326.37	321.14
*A52	0.562	625.27	630.63	632.18
*A52	0.443	503.13	541.79	547.62
*A52	0.340	470.05	453.07	401.05
*A52	0.254	539.26	542.03	543.73
*A52	0.152	483.81	489.74	494.7
*A52	0.059	214.33	209.01	205.49
*A52	0.019	0	0	0

River: 2S2WS7B

Reach	River Sta.	Left	Channel	Right
*A51	1.894	471.1	473.74	478.46
*A51	1.804	535.47	532.31	528.24
*A51	1.704	474.82	473.78	465.64
*A51	1.614	474.85	473.76	469.61
*A51	1.524	518.24	526.24	533.48
*A51	1.424	485.24	484.74	483.44
*A51	1.333	510.88	515.26	517.49
*A51	1.235	444.24	444.6	444.96
*A51	1.151	471.29	471.46	471.6
*A51	1.061	551.77	548.76	539.31
*A51	0.958	532.17	534.26	536.79
*A51	0.856	499.58	500.93	504.7
*A51	0.761	498.95	500	500.76
*A51	0.667	457.6	457.11	456.53
*A51	0.580	507.76	506.16	504.56
*A51	0.484	402.44	399.66	395.39
*A51	0.409	588.62	583.06	575.76
*A51	0.298	596.46	604.85	613.63
*A51	0.184	446.13	449.16	449.87
*A51	0.099	497.35	486.86	481.74
*A51	0.006	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: 1S2WS31

Reach	River Sta.	Contr.	Expan.
*A56	2.619	.1	.3
*A56	2.512	.1	.3
*A56	2.390	.1	.3
*A56	2.280	.1	.3
*A56	2.142	.1	.3
*A56	2.123	.1	.3
*A56	2.085	.1	.3
*A56	1.991	.1	.3
*A56	1.904	.1	.3
*A56	1.809	.1	.3
*A56	1.702	.1	.3
*A56	1.613	.1	.3
*A56	1.518	.1	.3
*A56	1.423	.1	.3
*A56	1.331	.1	.3
*A56	1.234	.1	.3
*A56	1.139	.1	.3
*A56	1.044	.1	.3
*A56	0.950	.1	.3
*A56	0.837	.1	.3
*A56	0.760	.1	.3
*A56	0.666	.1	.3
*A56	0.571	.1	.3
*A56	0.477	.1	.3
*A56	0.381	.1	.3
*A56	0.154	.1	.3
*A56	0.055	.1	.3

River: 2S2WS7A

Reach	River Sta.	Contr.	Expan.

A52	2.421	.1	.3
A52	2.354	.1	.3
A52	2.234	.1	.3
A52	2.139	.1	.3
A52	2.062	.1	.3
A52	1.950	.1	.3
A52	1.855	.1	.3
A52	1.764	.1	.3
A52	1.681	.1	.3
A52	1.587	.1	.3
A52	1.483	.1	.3
A52	1.382	.1	.3
A52	1.287	.1	.3
A52	1.196	.1	.3
A52	1.108	.1	.3
A52	1.009	.1	.3
A52	0.910	.1	.3
A52	0.817	.1	.3
A52	0.719	.1	.3
A52	0.624	.1	.3
A52	0.562	.1	.3
A52	0.443	.1	.3
A52	0.340	.1	.3
A52	0.254	.1	.3
A52	0.152	.1	.3
A52	0.059	.1	.3
A52	0.019	.1	.3

River: 2S2WS7B

Reach	River Sta.	Contr.	Expan.
A51	1.894	.1	.3
A51	1.804	.1	.3
A51	1.704	.1	.3
A51	1.614	.1	.3
A51	1.524	.1	.3
A51	1.424	.1	.3
A51	1.333	.1	.3
A51	1.235	.1	.3
A51	1.151	.1	.3
A51	1.061	.1	.3
A51	0.958	.1	.3
A51	0.856	.1	.3
A51	0.761	.1	.3
A51	0.667	.1	.3
A51	0.580	.1	.3
A51	0.484	.1	.3
A51	0.409	.1	.3
A51	0.298	.1	.3
A51	0.184	.1	.3
A51	0.099	.1	.3
A51	0.006	.1	.3

HEC-RAS Plan: 1S3WS24A River: 1S3WS24A Reach: A60

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
A60	0.043	2454.00	885.40	889.21	888.26	889.52	0.007410	5.48	604.75	307.14	0.54
A60	0.043	2454.00	885.40	890.16	888.78	890.75	0.007407	6.53	406.06	101.06	0.57
A60	0.115	2454.00	889.04	892.83	892.34	893.39	0.013851	6.57	420.14	258.11	0.72
A60	0.115	2454.00	889.04	893.65	893.00	894.47	0.012557	7.51	345.38	106.37	0.72
A60	0.186	2454.00	892.40	897.13	896.64	897.93	0.010381	7.85	376.73	159.85	0.67
A60	0.186	2454.00	892.40	897.74	896.72	898.90	0.010668	8.71	290.04	61.53	0.70
A60	0.277	2454.00	896.47	902.12		903.34	0.011779	9.11	294.30	80.89	0.73
A60	0.277	2454.00	896.47	902.58		903.75	0.009628	8.75	287.77	56.10	0.67
A60	0.373	2454.00	902.80	907.64		908.17	0.007674	6.30	513.03	317.19	0.57
A60	0.373	2454.00	902.80	907.83		908.63	0.009477	7.23	345.51	88.42	0.64
A60	0.473	2454.00	906.73	911.83		912.60	0.008767	7.60	386.99	128.82	0.63
A60	0.473	2454.00	906.73	912.42		913.40	0.008301	8.02	314.73	62.72	0.62
A60	0.568	2454.00	908.93	915.33		915.90	0.005089	6.45	442.54	119.02	0.49
A60	0.568	2454.00	908.93	915.86		916.56	0.004878	6.72	374.67	65.05	0.49
A60	0.684	2454.00	914.80	920.15	919.82	921.36	0.017488	8.86	280.77	197.54	0.84
A60	0.684	2454.00	914.80	920.36	919.81	921.44	0.014302	8.34	296.93	84.34	0.77
A60	0.774	2454.00	918.55	925.34		926.27	0.006725	8.08	343.20	75.33	0.57
A60	0.774	2454.00	918.55	925.32		926.54	0.008227	8.92	284.46	47.62	0.63
A60	0.852	2454.00	923.14	928.80		929.65	0.010330	7.49	351.28	120.22	0.66
A60	0.852	2454.00	923.14	929.17		929.95	0.008178	7.08	350.66	83.48	0.60
A60	0.931	2454.00	927.89	933.07	932.64	933.91	0.010148	7.88	406.02	239.21	0.67
A60	0.931	2454.00	927.89	933.09		934.31	0.012886	8.91	281.00	66.96	0.76
A60	1.042	2454.00	933.60	938.16		938.56	0.006323	5.15	496.31	174.03	0.50
A60	1.042	2454.00	933.60	938.45		938.81	0.004970	4.83	513.88	146.95	0.45

```
                    HEC-RAS Version 4.1.0 Jan 2010
                     U.S. Army Corps of Engineers
                    Hydrologic Engineering Center
                          609 Second Street
                          Davis, California

          X     X  XXXXXX    XXXX        XXXX       XX      XXXX
          X     X  X        X    X       X   X     X  X    X
          X     X  X        X            X   X    X    X   X
          XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
          X     X  X        X            X  X     X    X        X
          X     X  X        X    X       X   X    X    X        X
          X     X  XXXXXX    XXXX        X    X   X    X   XXXXX

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

PROJECT DATA
Project Title: 1S3WS24A (A60)
Project File : 1S3WS24A(A60).prj
Run Date and Time: 9/21/2012 4:19:24 PM

Project in English units

Project Description:
Rainbow Valley ADMP Areas 1, 2, 3, and 4 Floodplain Delineation Study

1S3WS24A(A60).prj
Plan01: 1S3WS24A (A60)

Contract FCD 2011C003 Assignment
3
This model is not for public release until final approval provided by
FEMA

Consultant: RBF Consulting
2929 North Central Avenue #800
Phoenix, AZ
85012

This is a re-delineation of 1S3WS24A (A60) within the Rainbow Valley
Study Area 2 using updated methods and data, including hydrology from Rainbow
Valley Area Drainage Master Plan (ADMP) dated Octover 2010 by URS in
cooperation with Dibble Engineering and JE Fuller Hydrology and Geomorphology,
Inc.

Model Geometry based upon 2' contour interval mapping

Vertical
Datum in NAVD88

Aerial mapping provided by the Flood Control District of
Maricopa County for Rainbow Valley Mapping, Contract No. FCD 03-67, Flight Date
March 30, 2005.

HEC-RAS Version 4.1.0
1S3WS24A(A60) is tributary to
Waterman Wash

Last Run Date September 21, 2012

River
100-Yr Discharge Rate                  HEC-1 Concentration Point
ID
1S3WS24A(A60)                          2454    cfs
CPA59

Downstream boundary condition applied is normal depth due
to non-coincident peaks with Waterman Wash.  Drainage area of A60 at Waterman
Wash confluence is 4.35 SM.


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

PLAN DATA

Plan Title: 1S3WS24A (A60)
Plan File : h:\PDATA\45104771\Calcs\HEC-RAS\1S3WS24A(A60).p01

           Geometry Title: 1S3WS24A (A60)
           Geometry File : h:\PDATA\45104771\Calcs\HEC-RAS\1S3WS24A(A60).g01

           Flow Title    : 1S3W24A (A60)
           Flow File     : h:\PDATA\45104771\Calcs\HEC-RAS\1S3WS24A(A60).f01

Plan Summary Information:
Number of:  Cross Sections =   12    Multiple Openings  =    0
            Culverts       =    0    Inline Structures  =    0
            Bridges        =    0    Lateral Structures =    0

Computational Information
    Water surface calculation tolerance  =  0.01
    Critical depth calculation tolerance =  0.01
    Maximum number of iterations         =  20
    Maximum difference tolerance         =  0.3
    Flow tolerance factor                =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow
```

```
Encroachment Data
   Equal Conveyance = True
   Left Offset      =        0
   Right Offset     =        0

River = 1S3WS24A          Reach = A60
RS      Profile            Method  Value1  Value2
1.042   FW                      1  9971.710118.65
0.931   FW                      1 9970.4810037.44
0.852   FW                      1 9962.9910046.47
0.774   FW                      1 9970.3210017.94
0.684   FW                      1 9964.1810048.52
0.568   FW                      1 9976.8410041.89
0.473   FW                      1 9967.1310029.85
0.373   FW                      1 9952.8710041.29
0.277   FW                      1 9972.9810029.08
0.186   FW                      1 9980.2810041.81
0.115   FW                      1 9919.8610026.23
0.043   FW                      1 9962.2910063.35

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

FLOW DATA

Flow Title: 1S3W24A (A60)
Flow File : h:\PDATA\45104771\Calcs\HEC-RAS\1S3WS24A(A60).f01

Flow Data (cfs)
*****************************************************************************
* River           Reach           RS      *        100-Year             FW *
* 1S3WS24A        A60             1.042   *            2454           2454 *
*****************************************************************************

Boundary Conditions
*****************************************************************************************************************
* River           Reach           Profile          *            Upstream                 Downstream    *
*****************************************************************************************************************
* 1S3WS24A        A60             100-Year         *                                  Normal S = 0.0074 *
*****************************************************************************************************************

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

GEOMETRY DATA

Geometry Title: 1S3WS24A (A60)
Geometry File : h:\PDATA\45104771\Calcs\HEC-RAS\1S3WS24A(A60).g01

CROSS SECTION


RIVER: 1S3WS24A
REACH: A60                RS: 1.042

INPUT
Description:
Station Elevation Data     num=      123
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*****************************************************************************
    9800   942.33 9800.38   942.35 9804.11    942.4 9806.93   942.55 9814.03   942.63
 9816.29   942.65 9822.44   942.65 9825.81   942.64  9831.4   943.02 9839.76   942.82
 9840.84     942.8 9853.57   942.75 9853.81   942.75 9854.14   942.75 9868.37   942.15
 9869.32   942.09 9872.97   941.88  9875.1   941.72 9886.03   941.37 9888.47   941.18
 9890.87   940.99 9899.75   940.31 9902.93   940.26 9909.37   939.78 9910.48   939.69
 9911.64   939.66 9920.17   939.09 9925.26   938.56 9928.74   938.17 9937.04   938.18
 9945.84   938.26 9951.13    938.1 9952.92   938.06 9955.39    937.8 9965.05    936.8
 9966.31   936.66 9970.98   936.16 9971.45   936.09  9973.7   935.65  9975.9   935.22
 9978.91   934.65 9998.96   933.64 9999.58    933.6 9999.92   933.7410003.51   935.22
10011.48    934.910019.31    934.610022.45   934.7610027.45      93510032.08   935.37
10033.73   935.4310037.64   935.5910043.71    935.910049.84   935.6510055.58   935.42
10067.98   935.3810078.74   935.11 10079.3   935.0910080.73   935.0510085.01   934.88
10086.38   934.87 10092.3   934.6410096.97   934.6810103.37   934.5110115.68   934.63
10116.26   935.0410116.65   935.3110122.17   937.6910129.11   940.7610130.92   940.56
10137.37    940.910147.38    941.210148.16   941.2810155.07   941.4310157.36   941.49
10159.95   941.6210165.07   941.8910170.36   942.0210173.87   942.0510179.22   942.09
10184.74   942.2310188.32    941.910194.92   941.0910206.61   940.3510206.94    940.3
10207.25   940.2510209.99   939.5910212.48   940.3310217.53    941.510220.78    941.5
10221.65    941.510222.85    941.5 10226.4    941.510234.26   941.4310243.33   941.31
10243.75    941.310243.89   941.2610248.36   940.1110254.98   941.1910256.99   941.58
10260.19   941.8210268.73   942.4510270.86   942.5210272.68    942.610282.99   942.56
 10285.4   942.5410288.29   942.47 10292.5   942.4810296.01   942.56 10299.6   942.67
 10303.9   942.65 10306.7   942.6710309.03   942.7110316.03   942.8510319.51   942.87
10329.91   942.9510335.13   942.9310336.88   942.95 10340.4   942.92 10345.1    942.9
10350.74   942.9110353.42   942.8910353.57   942.89

Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
    9800    .056  9973.7     .0510116.65    .056

Bank Sta: Left   Right     Lengths: Left Channel    Right      Coeff Contr.    Expan.
        9973.710116.65            581.63   583.7     585              .1          .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************************
* E.G. Elev (ft)          *  938.56  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.40  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  938.16  * Reach Len. (ft)         *  581.63  *  583.70  *  585.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   25.12  *  461.79  *    9.40  *
* E.G. Slope (ft/ft)      *0.006323  * Area (sq ft)            *   25.12  *  461.79  *    9.40  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)               *   53.68  * 2376.55  *   23.77  *
* Top Width (ft)          *  174.03  * Top Width (ft)           *   24.50  *  142.95  *    6.58  *
* Vel Total (ft/s)        *    4.94  * Avg. Vel. (ft/s)         *    2.14  *    5.15  *    2.53  *
* Max Chl Dpth (ft)       *    4.56  * Hydr. Depth (ft)         *    1.03  *    3.23  *    1.43  *
* Conv. Total (cfs)       * 30861.8  * Conv. (cfs)              *   675.1  * 29887.9  *   298.9  *
* Length Wtd. (ft)        *  583.59  * Wetted Per. (ft)         *   24.65  *  143.68  *    7.17  *
```

```
* Min Ch El (ft)          *  933.60  * Shear (lb/sq ft)        *     0.40  *    1.27  *    0.52  *
* Alpha                   *    1.06  * Stream Power (lb/ft s) *10353.57  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.61  * Cum Volume (acre-ft)    *     9.12  *   34.48  *    8.49  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)          *     6.38  *    8.50  *    6.29  *
*****************************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************************
* E.G. Elev (ft)          *  938.81  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.36  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  938.45  * Reach Len. (ft)        *  581.63  *  583.70  *  585.00  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *    5.21  *  503.26  *    5.41  *
* E.G. Slope (ft/ft)      *0.004970  * Area (sq ft)            *    5.21  *  503.26  *    5.41  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *   10.82  * 2431.65  *   11.54  *
* Top Width (ft)          *  146.95  * Top Width (ft)          *    2.00  *  142.95  *    2.00  *
* Vel Total (ft/s)        *    4.78  * Avg. Vel. (ft/s)        *    2.08  *    4.83  *    2.13  *
* Max Chl Dpth (ft)       *    4.85  * Hydr. Depth (ft)        *    2.60  *    3.52  *    2.71  *
* Conv. Total (cfs)       * 34810.9  * Conv. (cfs)             *   153.5  * 34493.8  *   163.6  *
* Length Wtd. (ft)        *  583.70  * Wetted Per. (ft)        *    4.45  *  143.68  *    4.45  *
* Min Ch El (ft)          *  933.60  * Shear (lb/sq ft)        *    0.36  *    1.09  *    0.38  *
* Alpha                   *    1.02  * Stream Power (lb/ft s) *10353.57  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.42  * Cum Volume (acre-ft)    *     1.06  *   37.73  *    1.37  *
* C & E Loss (ft)         *    0.09  * Cum SA (acres)          *     0.40  *    8.50  *    0.43  *
*****************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S3WS24A
REACH: A60                RS: 0.931

INPUT
Description:
Station Elevation Data     num=     102
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*****************************************************************************************
 9646.19   938.11  9649.3    938.2 9651.19   938.19 9653.16   938.01 9660.44   937.59
 9666.45   937.22 9672.42   937.18 9675.02   936.98 9677.73   936.78  9684.6   936.42
 9686.98   936.34 9688.13   936.24 9697.96   935.82 9700.68    935.8 9701.48   935.73
 9704.12   935.48 9710.78   934.52 9715.44   934.19 9720.87   933.66 9726.48   933.06
  9729.4   932.74 9736.91   932.86 9741.19   932.62  9748.8   932.44 9754.68   932.44
 9761.56   932.36 9765.04    932.3 9767.82   932.18 9772.16   932.01 9778.83   931.46
 9784.22   930.99 9786.23   930.81 9787.46   930.93 9800.62   932.45 9806.19    932.9
 9809.67   933.15 9814.85   933.55 9818.98   933.72 9825.71   933.86 9829.08    933.9
 9831.78    933.9  9836.2   933.97 9841.74    934.1 9843.31   934.14 9844.57   934.14
  9855.7   934.21 9857.36   934.22 9857.55   934.22 9857.78   934.22 9864.66   934.16
 9870.15   934.08 9871.78   934.05 9873.82   933.97 9878.89    933.8 9882.94   933.66
 9889.85   933.29 9895.73   932.98 9900.24   932.91 9905.89   932.81 9907.36   932.84
 9908.52   932.82 9914.47   932.88 9921.32   933.18 9921.59    933.2 9921.93   933.19
  9928.7   932.98 9934.11   932.86 9935.82   932.82 9937.96   932.76 9942.93   932.68
  9946.9   932.59 9950.05   932.48    9954   932.21 9959.69   931.84 9964.28   931.63
 9970.04    931.1  9971.4   930.96 9972.48   930.77 9978.51   929.72 9979.22   929.59
 9982.43   929.0310000.19   928.0710003.57   927.8910006.98   927.9510010.86   928.01
10014.09   928.0310021.26   928.14 10033.6   930.2710033.68   930.2910035.44   930.73
10038.72   931.1410047.52    932.310060.25   933.19 10063.9    933.410066.26    933.5
10071.02   933.6910074.81   933.8310078.13   933.8810085.56   933.8410093.56   933.86
10098.33   934.8510108.95    935.6

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9646.19     .056 9972.48     .0510035.44     .056

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
        9972.4810035.44            413.63  417.76  419.81              .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  933.91  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.85  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  933.07  * Reach Len. (ft)        *  413.63  *  417.76  *  419.81  *
* Crit W.S. (ft)          *  932.64  * Flow Area (sq ft)       *  112.48  *  270.52  *   23.02  *
* E.G. Slope (ft/ft)      *0.010148  * Area (sq ft)            *  112.48  *  270.52  *   23.02  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *  261.75  * 2130.96  *   61.29  *
* Top Width (ft)          *  239.21  * Top Width (ft)          *  153.22  *   62.96  *   23.03  *
* Vel Total (ft/s)        *    6.04  * Avg. Vel. (ft/s)        *    2.33  *    7.88  *    2.66  *
* Max Chl Dpth (ft)       *    5.18  * Hydr. Depth (ft)        *    0.73  *    4.30  *    1.00  *
* Conv. Total (cfs)       * 24360.2  * Conv. (cfs)             *  2598.3  * 21153.5  *   608.4  *
* Length Wtd. (ft)        *  417.49  * Wetted Per. (ft)        *  153.51  *   63.38  *   23.16  *
* Min Ch El (ft)          *  927.89  * Shear (lb/sq ft)        *    0.46  *    2.70  *    0.63  *
* Alpha                   *    1.50  * Stream Power (lb/ft s) *10108.95  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.27  * Cum Volume (acre-ft)    *    8.20  *   29.57  *    8.28  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *    5.19  *    7.12  *    6.09  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************************
* E.G. Elev (ft)          *  934.31  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.22  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  933.09  * Reach Len. (ft)        *  413.63  *  417.76  *  419.81  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *    4.32  *  272.20  *    4.47  *
* E.G. Slope (ft/ft)      *0.012886  * Area (sq ft)            *    4.32  *  272.20  *    4.47  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *   13.58  * 2426.19  *   14.22  *
```

* Top Width (ft)	* 66.96	* Top Width (ft)	* 2.00	* 62.96	* 2.00	*	
* Vel Total (ft/s)	* 8.73	* Avg. Vel. (ft/s)	* 3.14	* 8.91	* 3.18	*	
* Max Chl Dpth (ft)	* 5.20	* Hydr. Depth (ft)	* 2.16	* 4.32	* 2.24	*	
* Conv. Total (cfs)	* 21617.8	* Conv. (cfs)	* 119.7	* 21372.8	* 125.3	*	
* Length Wtd. (ft)	* 417.75	* Wetted Per. (ft)	* 4.06	* 63.38	* 4.13	*	
* Min Ch El (ft)	* 927.89	* Shear (lb/sq ft)	* 0.86	* 3.45	* 0.87	*	
* Alpha	* 1.03	* Stream Power (lb/ft s)	*10108.95	* 0.00	* 0.00	*	
* Frctn Loss (ft)	* 4.23	* Cum Volume (acre-ft)	* 0.99	* 32.54	* 1.30	*	
* C & E Loss (ft)	* 0.13	* Cum SA (acres)	* 0.37	* 7.12	* 0.40	*	

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S3WS24A
REACH: A60 RS: 0.852

INPUT
Description:
Station Elevation Data num= 121

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9684.47	934.59	9686.69	934.63	9691.44	934.56	9699.4	934.5	9702.66	934.51
9709	934.44	9713.88	934.48	9716.43	934.42	9729.74	933.31	9729.97	933.3
9732.39	932.03	9732.72	931.81	9752.52	931.89	9752.59	931.9	9752.66	931.89
9752.82	931.83	9758.31	929.4	9759.93	929.3	9773.28	927.43	9776.97	926.92
9777.97	926.8	9780.93	927.31	9790.79	928.94	9792.43	929.15	9798.22	929.56
9803.66	929.71	9805.66	929.76	9809.6	929.91	9814.88	930.01	9820.53	929.96
9826.1	930.09	9831.64	930.09	9835.4	930.05	9837.32	930.05	9843.22	930
9848.54	929.92	9850.27	929.97	9853.67	930.05	9857.71	930.14	9859.76	930.17
9865.15	930.13	9870.99	929.97	9872.58	929.95	9875.71	929.98	9880.02	930.01
9882.21	929.97	9888.94	930	9893.43	930.03	9894.89	929.99	9897.75	930.01
9902.32	930.03	9904.65	930.06	9909.76	930.07	9915.87	929.99	9917.19	930.02
9919.79	929.92	9927.09	929.87	9932.07	930.05	9938.32	930.25	9939.5	930.22
9941.83	930	9949.54	929.25	9957.53	928.38	9958.6	928.26	9960.76	928
9961.81	927.93	9964.99	927.48	9974.96	926.19	9980.99	924.54	9983.07	924.05
9986.2	923.14	9990.41	923.29	9998.99	923.52	10008.57	923.86	10013.43	924
10015.43	924.41	10020.71	925.13	10028.46	925.89	10028.54	925.9	10028.6	925.89
10028.7	925.88	10033.32	925.28	10037.83	924.66	10039.55	925.39	10044.47	927.48
10049.12	929.59	10057.99	933.6	10071.6	936.57	10072.98	936.86	10073.34	936.88
10074.06	936.92	10080.78	937.02	10084.2	937.27	10088.21	937.52	10095.42	938.19
10095.65	938.19	10096.1	938.22	10103.09	938.26	10106.64	938.61	10110.52	938.72
10117.86	939.01	10118.14	939.03	10125.39	939.19	10129.08	939.43	10132.83	939.51
10140.18	939.88	10140.26	939.88	10140.31	939.88	10147.7	940.27	10151.53	940.54
10162.22	941.07	10162.75	941.08	10170.01	941.46	10173.97	941.68	10184.26	942.11
10184.88	942.13	10185.19	942.13	10186.16	942.16	10196.41	942.35	10199.75	942.45
10200.01	942.45								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9684.47	.056	9964.99	.05	10044.47	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9964.99	10044.47		399.01	409.89	417.3	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

* E.G. Elev (ft)	* 929.65	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.84	* Wt. n-Val.	* 0.056	* 0.050	* 0.056 *
* W.S. Elev (ft)	* 928.80	* Reach Len. (ft)	* 399.01	* 409.89	* 417.30 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 33.75	* 315.59	* 1.93 *
* E.G. Slope (ft/ft)	*0.010330	* Area (sq ft)	* 33.75	* 315.59	* 1.93 *
* Q Total (cfs)	* 2454.00	* Flow (cfs)	* 85.52	* 2364.77	* 3.71 *
* Top Width (ft)	* 120.22	* Top Width (ft)	* 37.83	* 79.48	* 2.92 *
* Vel Total (ft/s)	* 6.99	* Avg. Vel. (ft/s)	* 2.53	* 7.49	* 1.92 *
* Max Chl Dpth (ft)	* 5.66	* Hydr. Depth (ft)	* 0.89	* 3.97	* 0.66 *
* Conv. Total (cfs)	* 24145.1	* Conv. (cfs)	* 841.4	* 23267.2	* 36.5 *
* Length Wtd. (ft)	* 409.27	* Wetted Per. (ft)	* 38.21	* 80.77	* 3.20 *
* Min Ch El (ft)	* 923.14	* Shear (lb/sq ft)	* 0.57	* 2.52	* 0.39 *
* Alpha	* 1.11	* Stream Power (lb/ft s)	*10200.01	* 0.00	* 0.00 *
* Frctn Loss (ft)	* 3.37	* Cum Volume (acre-ft)	* 7.50	* 26.76	* 8.16 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 4.28	* 6.44	* 5.96 *

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #FW

* E.G. Elev (ft)	* 929.95	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.77	* Wt. n-Val.	* 0.056	* 0.050	* 0.056 *
* W.S. Elev (ft)	* 929.17	* Reach Len. (ft)	* 399.01	* 409.89	* 417.30 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 3.10	* 345.08	* 2.48 *
* E.G. Slope (ft/ft)	*0.008178	* Area (sq ft)	* 3.10	* 345.08	* 2.48 *
* Q Total (cfs)	* 2454.00	* Flow (cfs)	* 6.97	* 2441.77	* 5.26 *
* Top Width (ft)	* 83.48	* Top Width (ft)	* 2.00	* 79.48	* 2.00 *
* Vel Total (ft/s)	* 7.00	* Avg. Vel. (ft/s)	* 2.24	* 7.08	* 2.12 *
* Max Chl Dpth (ft)	* 6.03	* Hydr. Depth (ft)	* 1.55	* 4.34	* 1.24 *
* Conv. Total (cfs)	* 27137.1	* Conv. (cfs)	* 77.1	* 27001.8	* 58.2 *
* Length Wtd. (ft)	* 409.87	* Wetted Per. (ft)	* 3.43	* 80.77	* 2.98 *
* Min Ch El (ft)	* 923.14	* Shear (lb/sq ft)	* 0.46	* 2.18	* 0.42 *
* Alpha	* 1.02	* Stream Power (lb/ft s)	*10200.01	* 0.00	* 0.00 *
* Frctn Loss (ft)	* 3.36	* Cum Volume (acre-ft)	* 0.96	* 29.58	* 1.27 *
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 0.35	* 6.44	* 0.38 *

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S3WS24A
REACH: A60 RS: 0.774

INPUT
Description:
Station Elevation Data num= 93

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9776.45	932.13	9780.74	932.27	9781.11	932.27	9790.74	932.33	9800.36	931.96
9800.74	931.96	9801.11	931.96	9815.17	931.28	9818.75	931.03	9820.23	930.84
9823.81	930.67	9830.8	930.45	9836.79	930.16	9840.42	929.98	9847.76	929.62
9853.13	929.2	9859.05	928.91	9860.94	928.8	9861.57	928.8	9862.28	928.8
9872.99	927.37	9873.52	927.3	9873.53	927.3	9873.55	927.3	9884.62	929.14
9884.95	929.2	9890.79	929.41	9900.74	929.77	9910.36	929.58	9910.96	929.53
9911.05	929.52	9920.7	929.08	9920.78	929.07	9920.9	929.07	9924.24	928.79
9938.25	927.5	9947.09	925.24	9955.06	923.19	9956.19	922.9	9961.49	922.57
9972.32	921.87	9978.67	919.92	9983.22	918.55	9989.14	918.6	9999.53	918.65
10000.74	918.65	10001.26	918.65	10005.79	918.67	10012.8	918.71	10013.31	918.96
10015.87	921.15	10015.94	921.19	10022.65	925.76	10023.56	927.04	10028.23	928.88
10030.57	930.11	10031.99	930.25	10040.2	931.05	10040.47	931.06	10041.11	931.1
10050.74	931.45	10051.11	931.48	10060.74	932.32	10061.11	932.35	10070.74	932.75
10080.36	933.16	10080.74	933.17	10081.11	933.19	10090.74	933.51	10100.36	933.83
10100.74	933.85	10101.11	933.85	10106.25	934.04	10112.46	934.32	10120.18	934.45
10126.3	934.86	10130.38	935.08	10134.65	935.37	10137.45	935.42	10140.14	935.55
10144.52	935.7	10149.11	936.11	10153.97	936.41	10158.67	936.55	10163.58	937.02
10165.74	937.14	10167.81	937.2	10172.82	937.17	10178.05	937.59	10179.89	937.69
10181.65	937.74	10192.51	937.95	10193.73	938.01				

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9776.45	.056	9972.32	.05	10015.94	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9972.32	10015.94		475.04	474.98	474.72	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	926.27	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.93	Wt. n-Val.	0.056	0.050	0.056
W.S. Elev (ft)	925.34	Reach Len. (ft)	475.04	474.98	474.72
Crit W.S. (ft)		Flow Area (sq ft)	59.16	271.43	12.61
E.G. Slope (ft/ft)	0.006725	Area (sq ft)	59.16	271.43	12.61
Q Total (cfs)	2454.00	Flow (cfs)	222.94	2191.78	39.28
Top Width (ft)	75.33	Top Width (ft)	25.62	43.62	6.09
Vel Total (ft/s)	7.15	Avg. Vel. (ft/s)	3.77	8.08	3.11
Max Chl Dpth (ft)	6.79	Hydr. Depth (ft)	2.31	6.22	2.07
Conv. Total (cfs)	29925.4	Conv. (cfs)	2718.6	26727.7	479.0
Length Wtd. (ft)	474.98	Wetted Per. (ft)	25.96	45.00	7.37
Min Ch El (ft)	918.55	Shear (lb/sq ft)	0.96	2.53	0.72
Alpha	1.17	Stream Power (lb/ft s)	10193.73	0.00	0.00
Frctn Loss (ft)	4.87	Cum Volume (acre-ft)	7.08	24.00	8.09
C & E Loss (ft)	0.03	Cum SA (acres)	3.99	5.86	5.92

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #FW

E.G. Elev (ft)	926.54	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.22	Wt. n-Val.	0.056	0.050	0.056
W.S. Elev (ft)	925.32	Reach Len. (ft)	475.04	474.98	474.72
Crit W.S. (ft)		Flow Area (sq ft)	6.78	270.78	6.89
E.G. Slope (ft/ft)	0.008227	Area (sq ft)	6.78	270.78	6.89
Q Total (cfs)	2454.00	Flow (cfs)	19.16	2414.78	20.06
Top Width (ft)	47.62	Top Width (ft)	2.00	43.62	2.00
Vel Total (ft/s)	8.63	Avg. Vel. (ft/s)	2.83	8.92	2.91
Max Chl Dpth (ft)	6.77	Hydr. Depth (ft)	3.39	6.21	3.45
Conv. Total (cfs)	27054.9	Conv. (cfs)	211.2	26622.5	221.2
Length Wtd. (ft)	474.98	Wetted Per. (ft)	5.33	45.00	5.19
Min Ch El (ft)	918.55	Shear (lb/sq ft)	0.65	3.09	0.68
Alpha	1.05	Stream Power (lb/ft s)	10193.73	0.00	0.00
Frctn Loss (ft)	5.06	Cum Volume (acre-ft)	0.91	26.68	1.22
C & E Loss (ft)	0.04	Cum SA (acres)	0.33	5.86	0.36

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S3WS24A
REACH: A60 RS: 0.684

INPUT
Description:
Station Elevation Data num= 122

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9653	925.91	9657.07	926.01	9659.71	926.07	9662.6	926.06	9666.79	926.07
9670.63	926.12	9673.87	926.13	9677.4	926.11	9684.2	926.03	9688.02	925.99
9692.19	925.92	9695.1	925.87	9697.76	925.75	9702.18	925.61	9706.99	925.38
9709.26	925.3	9711.33	925.08	9721.79	924.5	9723.94	924.32	9724.73	924.3
9730.86	923.83	9733.77	923.59	9740.18	922.97	9743.04	922.75	9747.14	922.16
9748.99	921.85	9752.26	921.58	9753.24	921.5	9754.27	921.47	9758.97	921.49
9762.31	921.46	9765.05	921.45	9767.68	921.38	9769.89	921.38	9772.07	921.4
9783.48	920.67	9788	920.2	9790.61	919.04	9796.3	916.17	9812.71	916.49
9813.93	916.53	9814.43	916.59	9815.28	916.69	9823.79	917.38	9824.91	917.34
9825.85	917.29	9831.3	918.1	9833.23	918.42	9835.59	918.3	9836.25	918.3
9841.48	918.41	9845.4	918.56	9849.52	918.66	9852.54	918.77	9864.72	918.84
9865.96	918.94	9866.45	918.96	9866.94	919	9868.37	919	9871.04	919.12

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  9876.6   919.3 9879.52   919.4 9880.79  919.41    9884  919.42 9899.53  920.42
 9899.77  920.43 9901.25   920.5 9907.43  920.52 9914.18  920.68 9914.51  920.68
 9914.82  920.71 9921.44  920.94 9921.46  920.95 9926.56  921.02 9931.54  921.12
 9936.56  921.03 9941.68  921.03 9946.56     921 9953.66  920.66 9959.64  920.24
 9966.18  919.09 9973.19  917.85 9975.16  917.47 9981.34  915.78 9984.88   914.8
 9986.18   914.8 9996.56  914.86   10000 914.8610008.27  914.8810014.06   914.9
10018.02 916.2710022.37   917.910029.18 918.4110029.42  918.4310036.56  918.97
10046.52 919.3510047.68  919.4110049.43 919.8710060.36  922.7110069.54  923.53
10076.57 924.0510083.18  925.1810086.57   925.610089.89  926.1610096.57  927.37
10103.39   928.110106.57  928.5210109.68 928.8310116.57  929.52 10123.6  930.33
10126.57 930.6410129.47  930.8110136.57 931.3310139.37  931.6410146.57  931.95
10153.92 932.7910156.57  933.0810159.16   933.210166.57  933.6510169.06   933.8
10176.57 934.2410182.55  934.55

Manning's n Values          num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
    9653    .056 9790.61     .05 9864.72    .056 9966.18     .0510046.52    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9966.1810046.52           616.67  613.67  610.64             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
    9653 9931.54  921.12       F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  921.36  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.21  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  920.15  * Reach Len. (ft)         *  616.67  *  613.67  *  610.64  *
* Crit W.S. (ft)          *  919.82  * Flow Area (sq ft)       *    3.18  *  275.65  *    1.93  *
* E.G. Slope (ft/ft)      *0.017488  * Area (sq ft)            *  210.81  *  275.65  *    1.93  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *    7.24  * 2442.65  *    4.11  *
* Top Width (ft)          *  197.54  * Top Width (ft)          *  113.21  *   80.34  *    3.98  *
* Vel Total (ft/s)        *    8.74  * Avg. Vel. (ft/s)        *    2.27  *    8.86  *    2.13  *
* Max Chl Dpth (ft)       *    5.35  * Hydr. Depth (ft)        *    0.53  *    3.43  *    0.48  *
* Conv. Total (cfs)       * 18556.6  * Conv. (cfs)             *    54.7  * 18470.8  *    31.1  *
* Length Wtd. (ft)        *  613.56  * Wetted Per. (ft)        *    6.11  *   81.42  *    4.08  *
* Min Ch El (ft)          *  914.80  * Shear (lb/sq ft)        *    0.57  *    3.70  *    0.52  *
* Alpha                   *    1.02  * Stream Power (lb/ft s)   *10182.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    5.27  * Cum Volume (acre-ft)     *    5.61  *   21.02  *    8.01  *
* C & E Loss (ft)         *    0.19  * Cum SA (acres)           *    3.24  *    5.19  *    5.86  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************
* E.G. Elev (ft)          *  921.44  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.08  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  920.36  * Reach Len. (ft)         *  616.67  *  613.67  *  610.64  *
* Crit W.S. (ft)          *  919.81  * Flow Area (sq ft)       *    2.19  *  292.89  *    1.85  *
* E.G. Slope (ft/ft)      *0.014302  * Area (sq ft)            *    2.19  *  292.89  *    1.85  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *    5.71  * 2443.80  *    4.48  *
* Top Width (ft)          *   84.34  * Top Width (ft)          *    2.00  *   80.34  *    2.00  *
* Vel Total (ft/s)        *    8.26  * Avg. Vel. (ft/s)        *    2.60  *    8.34  *    2.43  *
* Max Chl Dpth (ft)       *    5.56  * Hydr. Depth (ft)        *    1.10  *    3.65  *    0.92  *
* Conv. Total (cfs)       * 20520.2  * Conv. (cfs)             *    47.8  * 20435.0  *    37.5  *
* Length Wtd. (ft)        *  613.67  * Wetted Per. (ft)        *    2.95  *   81.42  *    2.76  *
* Min Ch El (ft)          *  914.80  * Shear (lb/sq ft)        *    0.66  *    3.21  *    0.60  *
* Alpha                   *    1.02  * Stream Power (lb/ft s)   *10182.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.77  * Cum Volume (acre-ft)     *    0.86  *   23.61  *    1.18  *
* C & E Loss (ft)         *    0.11  * Cum SA (acres)           *    0.31  *    5.19  *    0.34  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 1S3WS24A
REACH: A60                RS: 0.568

INPUT
Description:
Station Elevation Data     num=      87
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
    9800  922.79 9803.54  922.59 9807.39  922.76 9811.96  922.73 9819.85  922.07
 9821.04  922.04 9826.45   922.1 9830.68  921.97 9834.59  921.79 9839.43  921.73
 9842.22  921.67 9845.18  921.43 9849.95  921.21 9856.52  920.45 9856.85  920.41
 9859.14   920.1 9866.38  919.55 9866.91  919.51 9867.07   919.5 9867.61  919.54
 9876.65  920.27 9882.97   920.7 9892.52  921.12 9899.43  921.56  9904.6   921.9
 9909.66  921.82 9917.22  921.92 9923.42  922.06 9934.89   921.2 9942.04  920.63
 9956.37    916.6 9961.51  915.15 9966.34  914.25 9968.49  913.85 9978.84  911.88
  9982.6  910.46  9986.5  908.93 9993.04  909.08 10001.7  909.2810007.56  909.42
10016.47   909.6100025.71   910.310025.75 910.3110025.78  910.3210026.92  910.48
 10029.9  910.6910031.66  910.9210032.26  911.0110035.86  911.6210039.89  912.23
10040.56  912.3410041.46  912.5210042.59  912.5410049.86  912.8910058.53  912.81
10058.59  912.8110058.99  912.8110062.19  912.7610064.56  912.8610065.96  913.03
10068.77  913.4810074.65  914.3410078.33  914.9710079.87  915.3210083.52  915.98
10086.68  916.5110093.74   917.510098.31  917.97 10105.9  918.1910113.49  918.16
10117.43  917.7810118.83  917.5710123.98  917.0310127.09  916.7510130.23  916.62
10135.44   917.310137.69  917.3910142.89  917.8110154.62   918.810163.44  921.31
 10165.1  921.7810166.29  922.1310178.02  925.5410183.91  926.0410196.01  927.27
```

```
10199.38  927.66   10200  927.71

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
    9800    .056 9978.84     .0510039.89    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       9978.8410039.89            496.5     500  502.39              .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  915.90  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.57  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  915.33  * Reach Len. (ft)         *  496.50  *  500.00  *  502.39  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   31.30  *  327.50  *   83.74  *
* E.G. Slope (ft/ft)      *0.005089  * Area (sq ft)            *   31.30  *  327.50  *   83.74  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *   84.77  * 2110.92  *  258.31  *
* Top Width (ft)          *  119.02  * Top Width (ft)          *   17.96  *   61.05  *   40.02  *
* Vel Total (ft/s)        *    5.55  * Avg. Vel. (ft/s)        *    2.71  *    6.45  *    3.08  *
* Max Chl Dpth (ft)       *    6.40  * Hydr. Depth (ft)        *    1.74  *    5.36  *    2.09  *
* Conv. Total (cfs)       * 34401.4  * Conv. (cfs)             *  1188.3  * 29592.0  *  3621.1  *
* Length Wtd. (ft)        *  499.90  * Wetted Per. (ft)        *   18.29  *   61.77  *   40.26  *
* Min Ch El (ft)          *  908.93  * Shear (lb/sq ft)        *    0.54  *    1.68  *    0.66  *
* Alpha                   *    1.20  * Stream Power (lb/ft s)  *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.28  * Cum Volume (acre-ft)    *    3.89  *   16.77  *    7.41  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *    2.31  *    4.19  *    5.56  *
*****************************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************************
* E.G. Elev (ft)          *  916.56  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.69  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  915.86  * Reach Len. (ft)         *  496.50  *  500.00  *  502.39  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *    7.58  *  360.17  *    6.92  *
* E.G. Slope (ft/ft)      *0.004878  * Area (sq ft)            *    7.58  *  360.17  *    6.92  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *   17.12  * 2421.68  *   15.20  *
* Top Width (ft)          *   65.05  * Top Width (ft)          *    2.00  *   61.05  *    2.00  *
* Vel Total (ft/s)        *    6.55  * Avg. Vel. (ft/s)        *    2.26  *    6.72  *    2.20  *
* Max Chl Dpth (ft)       *    6.93  * Hydr. Depth (ft)        *    3.79  *    5.90  *    3.46  *
* Conv. Total (cfs)       * 35137.5  * Conv. (cfs)             *   245.2  * 34674.6  *   217.7  *
* Length Wtd. (ft)        *  499.99  * Wetted Per. (ft)        *    5.64  *   61.77  *    5.36  *
* Min Ch El (ft)          *  908.93  * Shear (lb/sq ft)        *    0.41  *    1.78  *    0.39  *
* Alpha                   *    1.04  * Stream Power (lb/ft s)  *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.13  * Cum Volume (acre-ft)    *    0.80  *   19.01  *    1.11  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)          *    0.28  *    4.19  *    0.31  *
*****************************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S3WS24A
REACH: A60                RS: 0.473

INPUT
Description:
Station Elevation Data     num=      99
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    9800  917.15 9810.45  916.57  9814.9  916.28 9815.73   916.2 9820.48  916.26
 9820.68  916.26 9822.61  916.19 9831.04  915.59 9832.97  915.47 9840.95   914.9
 9843.25  914.57 9845.39  914.41 9850.13  913.92  9856.6  913.64 9864.02   913.4
 9864.55    913.4 9865.69  913.45 9866.76  913.47 9872.42  913.65 9874.83  913.67
 9876.46  913.62 9880.31  913.65 9881.59  913.65 9886.36  913.56 9886.58  913.56
 9886.87  913.55 9888.46   913.6 9898.24  913.62 9902.05  913.22 9905.48  912.89
 9912.06  912.52 9916.41  912.03 9918.29  911.69 9928.97  910.61 9929.06   910.6
  9929.2  910.59 9932.65  910.43  9938.9  910.16 9939.17  910.14 9948.49  909.92
 9949.18  909.89 9949.93  909.85 9958.32  909.44 9965.45  909.08 9969.13  909.04
  9975.2  907.78  9982.3   906.9 9989.22  906.85 9996.46  906.82 9999.23   906.8
10012.11  906.7310018.27  907.4110019.21  907.5910020.39  907.7210023.51  908.22
10026.15  908.6510026.46  908.7110026.53  908.7310027.85  908.8510035.08  909.77
 10035.4  909.8510039.06  910.1910040.98   910.610044.34  911.2510049.68  912.79
10054.53  913.7210056.85  914.28   10060  914.7610063.14  914.9810068.25  915.53
10071.31  915.8310075.54  916.0810076.71  916.1510080.94   916.510085.41  916.62
10088.97  916.6910091.67  916.7610096.74  916.86 10106.9  917.1110109.33  917.17
10111.56  917.1510119.34  917.5210127.83  917.1610129.35  917.1610130.75  917.17
10139.36  917.6210141.34  917.62 10151.5  917.4710155.13  917.4910159.04  917.36
10169.12  917.8110169.39  917.8110169.69  917.83 10179.4  918.11 10188.3  918.31
10189.41  918.3410190.62  918.3710199.42   918.7   10200  918.73

Manning's n Values          num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*********************************************
    9800    .056 9969.13     .0510027.85    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.    Expan.
       9969.1310027.85            539.5  531.87  528.75              .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  912.60  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.78  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  911.83  * Reach Len. (ft)         *  539.50  *  531.87  *  528.75  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   88.52  *  266.64  *   31.83  *
* E.G. Slope (ft/ft)      *0.008767  * Area (sq ft)            *   88.52  *  266.64  *   31.83  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *  314.71  * 2026.81  *  112.48  *
* Top Width (ft)          *  128.82  * Top Width (ft)          *   51.60  *   58.72  *   18.49  *
* Vel Total (ft/s)        *    6.34  * Avg. Vel. (ft/s)        *    3.56  *    7.60  *    3.53  *
* Max Chl Dpth (ft)       *    5.10  * Hydr. Depth (ft)        *    1.72  *    4.54  *    1.72  *
* Conv. Total (cfs)       * 26209.6  * Conv. (cfs)             *  3361.2  * 21647.1  *  1201.4  *
```

```
* Length Wtd. (ft)        *  532.30  * Wetted Per. (ft)        *   51.70  *   59.05  *   18.77  *
* Min Ch El (ft)          *  906.73  * Shear (lb/sq ft)        *    0.94  *    2.47  *    0.93  *
* Alpha                   *    1.24  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.36  * Cum Volume (acre-ft)    *    3.21  *   13.36  *    6.74  *
* C & E Loss (ft)         *    0.08  * Cum SA (acres)          *    1.91  *    3.50  *    5.22  *
*****************************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************************
* E.G. Elev (ft)          *  913.40  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.99  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  912.42  * Reach Len. (ft)         *  539.50  *  531.87  *  528.75  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *    6.73  *  301.12  *    6.88  *
* E.G. Slope (ft/ft)      *0.008301  * Area (sq ft)            *    6.73  *  301.12  *    6.88  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *   18.94  * 2415.35  *   19.71  *
* Top Width (ft)          *   62.72  * Top Width (ft)          *    2.00  *   58.72  *    2.00  *
* Vel Total (ft/s)        *    7.80  * Avg. Vel. (ft/s)        *    2.82  *    8.02  *    2.87  *
* Max Chl Dpth (ft)       *    5.69  * Hydr. Depth (ft)        *    3.36  *    5.13  *    3.44  *
* Conv. Total (cfs)       * 26935.2  * Conv. (cfs)             *   207.9  * 26511.0  *   216.3  *
* Length Wtd. (ft)        *  531.90  * Wetted Per. (ft)        *    5.35  *   59.05  *    5.33  *
* Min Ch El (ft)          *  906.73  * Shear (lb/sq ft)        *    0.65  *    2.64  *    0.67  *
* Alpha                   *    1.04  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.71  * Cum Volume (acre-ft)    *    0.71  *   15.21  *    1.04  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)          *    0.26  *    3.50  *    0.29  *
*****************************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S3WS24A
REACH: A60                RS: 0.373

INPUT
Description:
Station Elevation Data    num=     100
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
  9792.9   913.2 9795.23  913.23 9799.95  913.31 9805.23   913.5 9810.14  913.44
 9815.23  913.52 9820.14  913.53 9825.23   913.5 9830.51  913.51 9835.23  913.51
 9840.69  913.57 9845.23  913.51 9849.62  913.56 9855.24  913.33 9861.06  913.15
 9865.24  912.83 9869.27  912.52 9875.24  912.17 9881.43  911.74 9885.24  911.24
 9891.62  910.32 9895.24  910.05 9898.74  909.57 9905.24  908.72 9911.99  908.39
 9915.25  908.17 9918.39  907.91 9918.54  907.89 9925.53  907.13 9929.46  906.74
 9935.96  906.21 9937.51  906.13 9938.96  906.07 9941.64  905.96 9954.87  905.34
 9961.43  902.95 9961.82   902.8 9974.55  903.14 9977.67  903.23 9977.76  903.23
 9978.05  903.24  9988.1  903.44 9993.85  903.51 9998.52  903.5510007.11  903.85
10008.95   903.910011.28  903.9910021.55  904.4310034.63  905.1210037.93  905.27
10039.29  905.32 10042.4  905.2410044.64  905.1810047.28  905.0810051.48  904.98
10058.45   904.810066.24  905.8110072.12  906.6610074.92  906.7410084.96  907.35
10091.78  907.4910092.05   907.510092.28   907.510095.89  907.5110105.59  907.53
10106.22  907.5310106.93  907.49 10113.3  907.1610118.91  907.4710122.07   907.6
10127.47  907.7110132.23  907.7410134.56  907.7610137.21  907.6610141.65  907.62
10145.54  907.3410148.73  907.2710152.36  907.3410155.82  907.4710158.86  907.39
 10162.9  907.25 10167.5  907.3210169.99  907.3210172.18  907.2910182.65  907.14
10184.16  907.1510185.49  907.1610197.79  907.2110198.33   907.210198.81  907.19
10205.42  906.9310211.04  906.6810217.45   906.510224.68  906.8410233.76  906.92
10238.76  907.4510243.22  907.5910252.07   907.610255.02  907.84 10256.9  908.06

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
  9792.9    .056 9954.87     .0510039.29    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9954.8710039.29            554.84   507.5  471.49             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  908.17  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.52  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  907.64  * Reach Len. (ft)         *  554.84  *  507.50  *  471.49  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   46.89  *  319.90  *  146.23  *
* E.G. Slope (ft/ft)      *0.007674  * Area (sq ft)            *   46.89  *  319.90  *  146.23  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *  134.63  * 2016.30  *  303.07  *
* Top Width (ft)          *  317.19  * Top Width (ft)          *   34.07  *   84.42  *  198.69  *
* Vel Total (ft/s)        *    4.78  * Avg. Vel. (ft/s)        *    2.87  *    6.30  *    2.07  *
* Max Chl Dpth (ft)       *    4.84  * Hydr. Depth (ft)        *    1.38  *    3.79  *    0.74  *
* Conv. Total (cfs)       * 28014.1  * Conv. (cfs)             *  1536.8  * 23017.5  *  3459.8  *
* Length Wtd. (ft)        *  505.96  * Wetted Per. (ft)        *   34.16  *   84.92  *  198.94  *
* Min Ch El (ft)          *  902.80  * Shear (lb/sq ft)        *    0.66  *    1.80  *    0.35  *
* Alpha                   *    1.47  * Stream Power (lb/ft s) *10256.90  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.76  * Cum Volume (acre-ft)    *    2.37  *    9.78  *    5.66  *
* C & E Loss (ft)         *    0.07  * Cum SA (acres)          *    1.38  *    2.63  *    3.90  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************************
* E.G. Elev (ft)          *  908.63  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.80  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  907.83  * Reach Len. (ft)         *  554.84  *  507.50  *  471.49  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *    4.89  *  335.55  *    5.07  *
* E.G. Slope (ft/ft)      *0.009477  * Area (sq ft)            *    4.89  *  335.55  *    5.07  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *   13.54  * 2426.40  *   14.06  *
* Top Width (ft)          *   88.42  * Top Width (ft)          *    2.00  *   84.42  *    2.00  *
* Vel Total (ft/s)        *    7.10  * Avg. Vel. (ft/s)        *    2.77  *    7.23  *    2.77  *
```

* Max Chl Dpth (ft)	* 5.03	* Hydr. Depth (ft)	* 2.44	* 3.97	* 2.54	*
* Conv. Total (cfs)	* 25208.0	* Conv. (cfs)	* 139.1	* 24924.5	* 144.4	*
* Length Wtd. (ft)	* 507.53	* Wetted Per. (ft)	* 4.40	* 84.92	* 4.56	*
* Min Ch El (ft)	* 902.80	* Shear (lb/sq ft)	* 0.66	* 2.34	* 0.66	*
* Alpha	* 1.03	* Stream Power (lb/ft s)	*10256.90	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 4.85	* Cum Volume (acre-ft)	* 0.64	* 11.32	* 0.96	*
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 0.23	* 2.63	* 0.26	*

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S3WS24A
REACH: A60 RS: 0.277

INPUT
Description:
Station Elevation Data num= 100

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9854.49	909.22	9855.59	909.21	9856.88	909.21	9865.47	909.3	9866.88	909.35
9875.34	909.52	9876.88	909.56	9878.46	909.6	9886.89	910.39	9888.59	910.43
9896.89	910.28	9904.98	910.12	9906.89	910.13	9914.85	909.99	9917.01	909.96
9918.23	909.88	9927	909.73	9927.64	909.71	9935.1	908.92	9938.91	908.58
9945.71	907.44	9948.89	907.16	9953.56	906.12	9954.04	905.98	9957.75	905.08
9958.68	904.84	9959.68	904.51	9967.79	902.17	9969.42	901.54	9970.4	901.01
9974.98	899.83	9975.01	899.83	9975.44	899.66	9977.1	898.77	9982.29	897.12
9988.05	897.06	9996.89	896.9	9999.49	896.85	10003.75	896.76	10006.89	896.7
10011.24	896.61	10018.42	896.47	10024.4	899.03	10024.96	899.23	10027.08	899.39
10036.9	900.31	10042.7	901.22	10043.26	901.31	10046.9	901.86	10052.76	902.64
10062.14	903.95	10069.16	903.87	10076.9	903.79	10081.01	903.82	10086.9	903.93
10091.14	903.93	10096.9	903.98	10101.27	904.11	10106.9	903.99	10112.4	903.94
10116.9	903.61	10122.28	903.31	10126.9	903.24	10131.65	903.26	10136.9	903.12
10141.78	902.86	10146.91	902.91	10151.91	902.82	10156.62	902.83	10162.03	902.93
10166.91	903.04	10171.66	903.04	10176.91	903.04	10181.54	902.91	10189.75	902.67
10192.57	902.66	10195.78	902.62	10204.76	902.81	10205.88	902.81	10207.18	902.82
10214.52	903.02	10216.29	903.11	10221.05	903.24	10226.91	903.45	10230.93	903.59
10236.91	903.69	10243.05	903.85	10246.91	903.91	10254.05	904.33	10259.79	904.64
10261.16	904.65	10262.85	904.74	10267.76	904.88	10272.21	904.84	10277.74	904.95
10281.66	905	10282.46	905.05	10285.73	905.09	10292.63	905.71	10294.26	905.84

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9854.49	.056	9974.98	.05	10027.08	.056

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9974.98	10027.08	477.17	478.85	478.61	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

* E.G. Elev (ft)	* 903.34	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.22	* Wt. n-Val.	* 0.056	* 0.050	* 0.056 *
* W.S. Elev (ft)	* 902.12	* Reach Len. (ft)	* 477.17	* 478.85	* 478.61 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 9.02	* 252.55	* 32.73 *
* E.G. Slope (ft/ft)	*0.011779	* Area (sq ft)	* 9.02	* 252.55	* 32.73 *
* Q Total (cfs)	* 2454.00	* Flow (cfs)	* 29.52	* 2301.34	* 123.14 *
* Top Width (ft)	* 80.89	* Top Width (ft)	* 7.05	* 52.10	* 21.74 *
* Vel Total (ft/s)	* 8.34	* Avg. Vel. (ft/s)	* 3.27	* 9.11	* 3.76 *
* Max Chl Dpth (ft)	* 5.65	* Hydr. Depth (ft)	* 1.28	* 4.85	* 1.51 *
* Conv. Total (cfs)	* 22611.3	* Conv. (cfs)	* 272.0	* 21204.7	* 1134.6 *
* Length Wtd. (ft)	* 478.79	* Wetted Per. (ft)	* 7.44	* 53.18	* 21.92 *
* Min Ch El (ft)	* 896.47	* Shear (lb/sq ft)	* 0.89	* 3.49	* 1.10 *
* Alpha	* 1.13	* Stream Power (lb/ft s)	*10294.26	* 0.00	* 0.00 *
* Frctn Loss (ft)	* 5.29	* Cum Volume (acre-ft)	* 2.02	* 6.44	* 4.69 *
* C & E Loss (ft)	* 0.13	* Cum SA (acres)	* 1.12	* 1.83	* 2.71 *

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #FW

* E.G. Elev (ft)	* 903.75	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 1.18	* Wt. n-Val.	* 0.056	* 0.050	* 0.056 *
* W.S. Elev (ft)	* 902.58	* Reach Len. (ft)	* 477.17	* 478.85	* 478.61 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 4.98	* 276.60	* 6.19 *
* E.G. Slope (ft/ft)	*0.009628	* Area (sq ft)	* 4.98	* 276.60	* 6.19 *
* Q Total (cfs)	* 2454.00	* Flow (cfs)	* 14.30	* 2421.16	* 18.54 *
* Top Width (ft)	* 56.10	* Top Width (ft)	* 2.00	* 52.10	* 2.00 *
* Vel Total (ft/s)	* 8.53	* Avg. Vel. (ft/s)	* 2.87	* 8.75	* 3.00 *
* Max Chl Dpth (ft)	* 6.11	* Hydr. Depth (ft)	* 2.49	* 5.31	* 3.09 *
* Conv. Total (cfs)	* 25010.1	* Conv. (cfs)	* 145.7	* 24675.3	* 189.0 *
* Length Wtd. (ft)	* 478.84	* Wetted Per. (ft)	* 4.30	* 53.18	* 5.01 *
* Min Ch El (ft)	* 896.47	* Shear (lb/sq ft)	* 0.70	* 3.13	* 0.74 *
* Alpha	* 1.04	* Stream Power (lb/ft s)	*10294.26	* 0.00	* 0.00 *
* Frctn Loss (ft)	* 4.85	* Cum Volume (acre-ft)	* 0.58	* 7.76	* 0.90 *
* C & E Loss (ft)	* 0.00	* Cum SA (acres)	* 0.21	* 1.83	* 0.24 *

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S3WS24A
REACH: A60 RS: 0.186

INPUT
Description:
Station Elevation Data num= 92

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev

```
*****************************************************************************
 9891.63  902.47 9893.31  902.54 9900.05  902.71 9905.67  902.54 9910.06  902.51
  9915.4  902.07 9920.06   901.7 9925.13  901.14 9930.06  900.75 9934.87  900.55
 9940.13  900.35  9944.6  900.06 9954.24  899.48 9956.85  898.96 9957.43  898.86
 9962.62  898.57 9963.86   898.4 9968.75   897.5 9971.51  897.01 9979.94  894.56
 9982.28  894.13 9985.05  893.61 9990.69  892.65 9999.63  892.5810003.05  892.56
10010.09  892.4610017.91  892.4110026.55   892.410032.49  893.9210036.01  894.39
10037.06  894.4310039.81  894.5110045.76  894.6910050.09  894.8810050.18  894.88
10051.67  894.8510060.11  894.94 10061.4  895.0110070.12  895.3410079.33  895.48
10080.34   895.510080.47   895.510080.72   895.5 10082.6  895.4810096.37  895.47
10099.33  895.4710104.82   895.510107.27   895.510109.44   895.510111.31  895.65
10115.61  895.6210115.74  895.6310115.79  895.64 10116.2  895.6110121.56  895.73
10122.48  895.8510122.79  895.8810123.21  895.9710127.66  896.5110129.02  896.65
10129.91  896.7610132.98  898.1610137.35  898.4710142.73  898.7910148.81  899.51
10151.96  899.8610155.64  900.4110157.85  900.4810159.56  900.6910161.66   900.8
10174.77  901.5810177.67  901.8910180.16  902.0510187.94  902.1510192.19  902.13
10194.46  902.0610200.12   901.910208.35  901.0310211.81   900.710214.26  900.76
10223.43  901.0710236.35  901.6510240.43   901.910247.17  902.5910254.26  903.49
10260.19  904.0710264.55  904.0710270.19  904.3210275.54  904.54 10280.2  904.72
10285.27  904.7710287.55  904.83

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***************************************************
 9891.63    .056 9982.28     .0510039.81    .056

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9982.2810039.81            373.35  374.59  372.69             .1       .3
Ineffective Flow      num=        1
   Sta L   Sta R    Elev  Permanent
10100.0610287.55  897.25       F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  897.93  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.80  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  897.13  * Reach Len. (ft)         *  373.35  *  374.59  *  372.69  *
* Crit W.S. (ft)          *  896.64  * Flow Area (sq ft)       *   17.84  *  241.57  *  117.31  *
* E.G. Slope (ft/ft)      *0.010381  * Area (sq ft)            *   17.84  *  241.57  *  157.94  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *   63.49  * 1896.06  *  494.46  *
* Top Width (ft)          *  159.85  * Top Width (ft)          *   11.42  *   57.53  *   90.90  *
* Vel Total (ft/s)        *    6.51  * Avg. Vel. (ft/s)        *    3.56  *    7.85  *    4.21  *
* Max Chl Dpth (ft)       *    4.73  * Hydr. Depth (ft)        *    1.56  *    4.20  *    1.95  *
* Conv. Total (cfs)       * 24085.3  * Conv. (cfs)             *   623.1  * 18609.3  *  4852.9  *
* Length Wtd. (ft)        *  374.12  * Wetted Per. (ft)        *   11.82  *   57.88  *   60.27  *
* Min Ch El (ft)          *  892.40  * Shear (lb/sq ft)        *    0.98  *    2.70  *    1.26  *
* Alpha                   *    1.21  * Stream Power (lb/ft s) *10287.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.46  * Cum Volume (acre-ft)    *    1.87  *    3.73  *    3.64  *
* C & E Loss (ft)         *    0.07  * Cum SA (acres)          *    1.02  *    1.23  *    2.09  *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************
* E.G. Elev (ft)          *  898.90  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.16  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  897.74  * Reach Len. (ft)         *  373.35  *  374.59  *  372.69  *
* Crit W.S. (ft)          *  896.72  * Flow Area (sq ft)       *    6.85  *  276.79  *    6.39  *
* E.G. Slope (ft/ft)      *0.010668  * Area (sq ft)            *    6.85  *  276.79  *    6.39  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *   22.34  * 2411.46  *   20.20  *
* Top Width (ft)          *   61.53  * Top Width (ft)          *    2.00  *   57.53  *    2.00  *
* Vel Total (ft/s)        *    8.46  * Avg. Vel. (ft/s)        *    3.26  *    8.71  *    3.16  *
* Max Chl Dpth (ft)       *    5.34  * Hydr. Depth (ft)        *    3.42  *    4.81  *    3.20  *
* Conv. Total (cfs)       * 23759.6  * Conv. (cfs)             *   216.3  * 23347.8  *   195.6  *
* Length Wtd. (ft)        *  374.50  * Wetted Per. (ft)        *    5.27  *   57.88  *    5.17  *
* Min Ch El (ft)          *  892.40  * Shear (lb/sq ft)        *    0.86  *    3.18  *    0.82  *
* Alpha                   *    1.04  * Stream Power (lb/ft s) *10287.55  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.33  * Cum Volume (acre-ft)    *    0.51  *    4.72  *    0.83  *
* C & E Loss (ft)         *    0.10  * Cum SA (acres)          *    0.19  *    1.23  *    0.22  *
*****************************************************************************************

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 1S3WS24A
REACH: A60                RS: 0.115

INPUT
Description:
Station Elevation Data     num=     106
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9741.26  900.75 9742.32   900.8 9743.98  900.85 9746.38  900.74 9751.17  900.33
 9754.49     900 9763.92   898.8 9765.54  898.55 9766.66  898.35 9772.87  897.66
 9779.63  896.83 9780.01  896.81 9780.34  896.76 9780.78  896.74  9792.7  896.03
 9793.63  895.92 9798.73  895.47 9803.41  895.06 9805.81  894.93 9808.77  894.64
 9811.75  894.73 9814.47  894.85 9816.86  894.88 9819.95  895.01 9821.96  895.06
 9824.96  895.25  9828.8  895.13 9831.42  895.13 9838.34  894.95 9838.89  894.92
 9845.47  892.71  9851.5  890.42 9855.41  890.55 9861.27  890.71 9866.14  890.84
 9869.17  890.92 9873.32  891.03 9876.21  890.91 9880.51   890.7 9886.71  890.58
  9887.7  890.58 9888.38  890.55 9892.15  890.48 9900.55  890.31 9902.07   890.3
 9904.25  890.33 9905.17  890.35    9911  890.46 9911.38  890.46  9912.6  890.46
 9927.87  890.54 9937.22  891.41 9940.52  891.69 9947.83  891.19 9950.92  890.98
 9952.06  890.91 9961.39  890.66 9971.78  890.55 9976.36  890.49 9976.84  890.45
 9985.67  889.71 9997.63  889.3910001.41  889.2910003.23  889.2510011.46  889.04
10021.29  891.1110021.61   891.210021.95  891.2410024.23  891.73 10034.5  893.85
10035.73  894.0810041.42  895.1310048.74  895.8310054.21  896.5210063.86  893.95
10065.67  893.5210075.08  891.3810076.12  891.3510076.62  891.3210077.24  891.29
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10087.72  890.8610092.75  890.8410092.98  890.8410093.29  890.8310093.92  890.81
10099.67  889.39 10099.9   889.310105.12  890.05 10115.6  891.3910116.57  891.42
10116.86  891.4310117.73  891.4710130.33  891.8810131.85  891.9210141.35  892.55
10144.12  893.3310149.26  894.6310152.49  895.8510161.87  898.5910171.77  901.55
10173.91  901.92 10180.8  903.2210188.17  904.5110191.47  904.89 10194.6  905.34
10199.92  906.17

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9741.26    .056 9940.52     .0510024.23    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9940.5210024.23            343.3  380.13  423.22             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev  Permanent
10054.2110199.92  896.52       F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  893.39  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.56  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  892.83  * Reach Len. (ft)         *  343.30  *  380.13  *  423.22  *
* Crit W.S. (ft)          *  892.34  * Flow Area (sq ft)       *  200.74  *  216.46  *    2.94  *
* E.G. Slope (ft/ft)      *0.013851  * Area (sq ft)            *  200.74  *  216.46  *  121.39  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              * 1025.63  * 1422.29  *    6.08  *
* Top Width (ft)          *  258.11  * Top Width (ft)          *   95.41  *   83.71  *   78.99  *
* Vel Total (ft/s)        *    5.84  * Avg. Vel. (ft/s)        *    5.11  *    6.57  *    2.07  *
* Max Chl Dpth (ft)       *    3.79  * Hydr. Depth (ft)        *    2.10  *    2.59  *    0.55  *
* Conv. Total (cfs)       * 20851.1  * Conv. (cfs)             *  8714.6  * 12084.9  *    51.6  *
* Length Wtd. (ft)        *  383.96  * Wetted Per. (ft)        *   95.93  *   84.07  *    5.45  *
* Min Ch El (ft)          *  889.04  * Shear (lb/sq ft)        *    1.81  *    2.23  *    0.47  *
* Alpha                   *    1.05  * Stream Power (lb/ft s) *10199.92  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.80  * Cum Volume (acre-ft)    *    0.93  *    1.76  *    2.45  *
* C & E Loss (ft)         *    0.08  * Cum SA (acres)          *    0.56  *    0.62  *    1.36  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************
* E.G. Elev (ft)          *  894.47  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.82  * Wt. n-Val.              *   0.056  *   0.050  *   0.056  *
* W.S. Elev (ft)          *  893.65  * Reach Len. (ft)         *  343.30  *  380.13  *  423.22  *
* Crit W.S. (ft)          *  893.00  * Flow Area (sq ft)       *   57.01  *  284.94  *    3.43  *
* E.G. Slope (ft/ft)      *0.012557  * Area (sq ft)            *   57.01  *  284.94  *    3.43  *
* Q Total (cfs)           * 2454.00  * Flow (cfs)              *  302.89  * 2141.16  *    9.95  *
* Top Width (ft)          *  106.37  * Top Width (ft)          *   20.66  *   83.71  *    2.00  *
* Vel Total (ft/s)        *    7.11  * Avg. Vel. (ft/s)        *    5.31  *    7.51  *    2.90  *
* Max Chl Dpth (ft)       *    4.61  * Hydr. Depth (ft)        *    2.76  *    3.40  *    1.71  *
* Conv. Total (cfs)       * 21899.8  * Conv. (cfs)             *  2703.0  * 19108.0  *    88.8  *
* Length Wtd. (ft)        *  385.43  * Wetted Per. (ft)        *   23.86  *   84.07  *    3.55  *
* Min Ch El (ft)          *  889.04  * Shear (lb/sq ft)        *    1.87  *    2.66  *    0.76  *
* Alpha                   *    1.05  * Stream Power (lb/ft s) *10199.92  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.65  * Cum Volume (acre-ft)    *    0.24  *    2.30  *    0.79  *
* C & E Loss (ft)         *    0.07  * Cum SA (acres)          *    0.09  *    0.62  *    0.20  *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 1S3WS24A
REACH: A60                RS: 0.043

INPUT
Description:
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9823.34  894.13 9829.48  893.67 9833.57  893.52 9838.66  893.36 9844.12  893.13
 9850.21  892.97 9853.59  892.72 9858.77  892.09 9861.75  892.09 9866.09  891.84
 9873.29  891.36 9873.61  891.35 9880.73     891 9884.84     891 9890.28  890.61
 9894.02  890.38 9899.18  889.92 9905.06  889.36 9911.25  889.54 9913.13  889.53
 9921.02  888.99 9923.76  888.75 9927.05  888.48    9928  888.41 9940.34  888.46
 9946.63   888.4 9960.31  888.15 9962.48  888.14 9964.29  888.12  9977.4  886.44
 9984.42   885.5 9988.38  885.49 9997.88   885.510000.46  885.5110002.68  885.46
10011.23  885.410014.71  885.8810017.29  886.1310018.81   886.3 10020.2  886.46
10023.52  886.6410027.77  886.4510031.12  886.3310036.35  886.2410049.06  885.91
10049.13  885.9110049.58  885.91 10054.4     88610054.72     88610065.66  886.19
10066.75  886.1810069.31  886.1810082.58  886.2710086.02  886.2410087.91  886.27
10096.43  886.2410097.74  886.2310099.22   886.210112.97  887.9110116.05   888.4
10124.63  888.7610128.35  888.9310136.81  889.1210143.44   889.210150.56  888.16
10157.25     88710164.85  887.67 10167.6  887.84 10174.9  887.5910180.89  887.37
 10185.7  887.2110195.73  887.2510199.86  887.37 10204.9  889.1410206.78  889.78
10207.59  890.0310219.45  888.24 10223.5   887.510235.35  889.6810235.48  889.71
10239.36  889.89 10242.5  890.1410250.86  891.28 10257.2  891.9210261.19  892.26
 10262.2  892.3410271.65  892.59 10271.7  892.5910271.79   892.610277.23  892.77
10278.07  892.77

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9823.34    .056 9964.29     .0510023.52    .056

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9964.2910023.52                0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
```

E.G. Elev (ft)	889.52	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.31	Wt. n-Val.	0.056	0.050	0.056
W.S. Elev (ft)	889.21	Reach Len. (ft)			
Crit W.S. (ft)	888.26	Flow Area (sq ft)	35.60	186.34	382.81
E.G. Slope (ft/ft)	0.007410	Area (sq ft)	35.60	186.34	382.81
Q Total (cfs)	2454.00	Flow (cfs)	68.01	1020.76	1365.24
Top Width (ft)	307.14	Top Width (ft)	46.52	59.23	201.39
Vel Total (ft/s)	4.06	Avg. Vel. (ft/s)	1.91	5.48	3.57
Max Chl Dpth (ft)	3.81	Hydr. Depth (ft)	0.77	3.15	1.90
Conv. Total (cfs)	28507.9	Conv. (cfs)	790.0	11858.1	15859.9
Length Wtd. (ft)		Wetted Per. (ft)	46.55	59.47	202.40
Min Ch El (ft)	885.40	Shear (lb/sq ft)	0.35	1.45	0.87
Alpha	1.19	Stream Power (lb/ft s)	10278.07	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

Warning: Divided flow computed for this cross-section.

CROSS SECTION OUTPUT Profile #FW

E.G. Elev (ft)	890.75	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.056	0.050	0.056
W.S. Elev (ft)	890.16	Reach Len. (ft)			
Crit W.S. (ft)	888.78	Flow Area (sq ft)	4.06	242.64	159.35
E.G. Slope (ft/ft)	0.007407	Area (sq ft)	4.06	242.64	159.35
Q Total (cfs)	2454.00	Flow (cfs)	9.34	1584.58	860.08
Top Width (ft)	101.06	Top Width (ft)	2.00	59.23	39.83
Vel Total (ft/s)	6.04	Avg. Vel. (ft/s)	2.30	6.53	5.40
Max Chl Dpth (ft)	4.76	Hydr. Depth (ft)	2.03	4.10	4.00
Conv. Total (cfs)	28514.2	Conv. (cfs)	108.6	18412.0	9993.6
Length Wtd. (ft)		Wetted Per. (ft)	4.02	59.47	43.86
Min Ch El (ft)	885.40	Shear (lb/sq ft)	0.47	1.89	1.68
Alpha	1.03	Stream Power (lb/ft s)	10278.07	0.00	0.00
Frctn Loss (ft)		Cum Volume (acre-ft)			
C & E Loss (ft)		Cum SA (acres)			

SUMMARY OF MANNING'S N VALUES

River:1S3WS24A

Reach	River Sta.	n1	n2	n3	n4	n5
A60	1.042	.056	.05	.056		
A60	0.931	.056	.05	.056		
A60	0.852	.056	.05	.056		
A60	0.774	.056	.05	.056		
A60	0.684	.056	.05	.056	.05	.056
A60	0.568	.056	.05	.056		
A60	0.473	.056	.05	.056		
A60	0.373	.056	.05	.056		
A60	0.277	.056	.05	.056		
A60	0.186	.056	.05	.056		
A60	0.115	.056	.05	.056		
A60	0.043	.056	.05	.056		

SUMMARY OF REACH LENGTHS

River: 1S3WS24A

Reach	River Sta.	Left	Channel	Right
A60	1.042	581.63	583.7	585
A60	0.931	413.63	417.76	419.81
A60	0.852	399.01	409.89	417.3
A60	0.774	475.04	474.98	474.72
A60	0.684	616.67	613.67	610.64
A60	0.568	496.5	500	502.39
A60	0.473	539.5	531.87	528.75
A60	0.373	554.84	507.5	471.49
A60	0.277	477.17	478.85	478.61
A60	0.186	373.35	374.59	372.69
A60	0.115	343.3	380.13	423.22
A60	0.043	0	0	0

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: 1S3WS24A

Reach	River Sta.	Contr.	Expan.
A60	1.042	.1	.3
A60	0.931	.1	.3
A60	0.852	.1	.3
A60	0.774	.1	.3
A60	0.684	.1	.3
A60	0.568	.1	.3
A60	0.473	.1	.3
A60	0.373	.1	.3
A60	0.277	.1	.3
A60	0.186	.1	.3
A60	0.115	.1	.3
A60	0.043	.1	.3

HEC-RAS Plan: J37&J27 Profile: 100-Year

River	Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1S2WS18A	J27	0.011	1083.00	884.03	891.31		891.34	0.000382	1.88	901.48	421.41	0.14
1S2WS18A	J27	0.104	1083.00	886.10	892.13	892.13	893.01	0.013487	8.26	170.15	97.86	0.76
1S2WS18A	J27	0.189	766.00	888.40	894.70		894.76	0.001327	2.92	471.87	328.37	0.25
1S2WS18A	J27	0.284	766.00	893.58	896.34	896.34	896.73	0.030682	6.41	162.81	200.71	0.98
1S2WS18A	J27	0.390	766.00	896.21	899.68		899.79	0.002189	2.82	335.27	285.44	0.30
1S2WS18A	J27	0.460	766.00	897.80	900.79		900.95	0.004659	3.19	240.44	129.67	0.41
1S2WS18A	J27	0.524	766.00	899.63	902.73		903.02	0.007820	4.30	178.14	92.37	0.54
1S2WS18A	J27	0.693	416.00	903.72	905.39	904.46	905.41	0.000849	1.21	393.62	519.37	0.17
1S2WS18A	J27	0.758	416.00	904.42	905.81	905.04	905.85	0.002124	1.75	251.05	521.13	0.26
1S2WS18A	J27	0.852	416.00	906.89	909.06	909.06	909.32	0.019009	5.66	130.27	271.53	0.80
1S2WS18A	J27	0.947	416.00	910.39	911.75		911.77	0.002188	1.46	377.20	552.13	0.26
1S2WS18A	J27	1.042	416.00	912.67	913.64		913.69	0.008328	2.19	234.23	468.36	0.47
1S2WS18A	J27	1.166	416.00	915.31	915.97		915.98	0.001924	0.78	429.78	701.75	0.21
1S2WS18A	J27	1.231	416.00	915.00	917.16		917.30	0.010261	4.43	182.77	425.17	0.60
1S2WS18B	J37-Reach1	0.363	2222.00	867.00	873.27	872.73	873.94	0.004801	7.25	475.28	219.97	0.57
1S2WS18B	J37-Reach1	0.398	2222.00	867.57	874.17	873.96	875.27	0.009302	8.99	320.43	127.86	0.77
1S2WS18B	J37-Reach1	0.436	2222.00	868.00	876.17		876.47	0.002951	5.20	678.57	329.38	0.43
1S2WS18B	J37-Reach1	0.444	Culvert									
1S2WS18B	J37-Reach1	0.452	2222.00	870.10	878.02	876.72	878.25	0.002002	4.70	790.71	290.89	0.37
1S2WS18B	J37-Reach1	0.473	2222.00	870.54	878.21		878.47	0.001712	4.38	688.36	250.98	0.34
1S2WS18B	J37-Reach1	0.568	2222.00	872.90	879.26		879.52	0.002643	5.05	707.60	265.67	0.42
1S2WS18B	J37-Reach1	0.666	2222.00	875.14	881.01	880.77	881.66	0.006439	7.67	529.25	330.86	0.64
1S2WS18B	J37-Reach1	0.753	2222.00	876.73	883.42		883.92	0.003823	5.94	488.61	225.70	0.50
1S2WS18B	J37-Reach1	0.852	2222.00	879.10	886.03	886.01	887.35	0.011114	9.32	273.11	170.31	0.83
1S2WS18B	J37-Reach1	0.942	2222.00	881.50	889.49	888.20	890.13	0.003495	7.14	548.31	321.87	0.50
1S2WS18B	J37-Reach1	1.012	2222.00	884.10	890.98	889.83	891.22	0.002342	5.23	923.68	584.54	0.40
1S2WS18B	J37-Reach2	1.038	855.00	884.78	891.35		891.37	0.000227	1.22	918.79	425.29	0.10
1S2WS18B	J37-Reach2	1.143	855.00	889.61	893.90	893.90	894.72	0.019172	7.91	124.56	76.22	0.86
1S2WS18B	J37-Reach2	1.235	855.00	893.39	898.71	898.03	899.06	0.005075	5.26	221.62	138.76	0.48
1S2WS18B	J37-Reach2	1.326	855.00	896.64	901.54		902.10	0.007797	6.37	156.63	68.42	0.59
1S2WS18B	J37-Reach2	1.420	855.00	900.30	905.31		905.77	0.006863	6.05	198.74	137.90	0.55
1S2WS18B	J37-Reach2	1.515	855.00	903.00	908.82		909.06	0.006233	4.19	255.11	229.16	0.49
1S2WS18B	J37-Reach2	1.610	855.00	907.57	910.50		910.77	0.002099	1.80	218.08	150.44	0.26
1S2WS18B	J37-Reach2	1.705	855.00	911.13	915.55	915.55	915.96	0.012747	6.91	227.29	300.38	0.71

```
                    HEC-RAS Version 4.1.0 Jan 2010
                     U.S. Army Corps of Engineers
                    Hydrologic Engineering Center
                          609 Second Street
                          Davis, California

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

****

PROJECT DATA
Project Title: 1S2WS18B (J37) 1S2WS18A (J27)
Project File : 1S2WS18B.prj
Run Date and Time: 11/19/2012 8:01:07 AM

Project in English units

Project Description:
Rainbow Valley ADMP Areas 1, 2, 3, and 4 Floodplain Delineation
Study
1S2WS18B.prj
Plan01: 1S2WS18B (J37) 1S2WS18A (J27)

Contract FCD
2011C003 Assignment 3
This model is not for public release until final
approval provided by FEMA

Consultant: RBF Consulting
2929 North Central
Avenue #800
Phoenix, AZ 85012
RBF Job number: 45104771

This is a
re-delineation of 1S2WS18A (J37) and 1S2WS18B (J27) within the Rainbow Valley Study Area 3 using updated methods and data, including hydrology from Rainbow Valley Area Drainage Master Plan (ADMP) dated Octover 2010 by URS in cooperation with Dibble Engineering and JE Fuller Hydrology and Geomorphology, Inc.

Model Geometry based upon 2' contour interval mapping

Vertical
Datum in NAVD88

Aerial mapping provided by the Flood Control District of
Maricopa County for Rainbow Valley Mapping, Contract No. FCD 03-67, Flight Date March 30, 2005.

HEC-RAS Version 4.1.0
1S2WS18B (J37) is tributary to the
Gila River

Last Run date November 19, 2012

River
100-Yr Discharge Rate HEC-1 Concentration Point
ID
1S2WS18B(J37) 2,222 cfs
CPJ37

Downstream boundary condition applied is normal depth due
to non-coincident peaks with Gila River. Drainage area of CPJ37 at Gila River confluence is 3.18 SM.

****

PLAN DATA

Plan Title: 1S2WS18B (J37) 1S2WS18A (J27)
Plan File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS18B.p01

Geometry Title: 1S2WS18B (J37) 1S2WS18A (J27)
Geometry File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS18B.g01

Flow Title : 1S2WS18B (J37) 1S2WS18A (J27)
Flow File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS18B.f01

Plan Summary Information:
Number of: Cross Sections = 33 Multiple Openings = 0
Culverts = 1 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: 1S2WS18B (J37) 1S2WS18A (J27)
Flow File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS18B.f01

Flow Data (cfs)

River	Reach	RS	100-Year
1S2WS18A	J27	1.231	416
1S2WS18A	J27	0.524	766
1S2WS18A	J27	0.104	1083
1S2WS18B	J37-Reach2	1.705	855
1S2WS18B	J37-Reach1	1.012	2222

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
1S2WS18B	J37-Reach1	100-Year		Normal S = 0.0048

GEOMETRY DATA

Geometry Title: 1S2WS18B (J37) 1S2WS18A (J27)
Geometry File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS18B.g01

Reach Connection Table

River	Reach	Upstream Boundary	Downstream Boundary
1S2WS18A	J27		1
1S2WS18B	J37-Reach2		1
1S2WS18B	J37-Reach1	1	

JUNCTION INFORMATION

Name: 1
Description: Confluence of J37 and J27
Energy computation Method

Length across Junction River	Reach	Tributary River	Reach	Length	Angle
1S2WS18B	J37-Reach2	to 1S2WS18B	J37-Reach1	137.34	
1S2WS18A	J27	to 1S2WS18B	J37-Reach1	91.82	

CROSS SECTION

RIVER: 1S2WS18A
REACH: J27 RS: 1.231

INPUT
Description: Arlington Road
Station Elevation Data num= 115

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9748.28	917.19	9753.55	916.81	9753.83	916.81	9764.51	916.83	9773.21	916.8
9775.47	916.78	9778.25	916.81	9783.9	916.95	9786.43	916.9	9793.09	917.07
9797.39	917.1	9799.03	917.09	9802.67	917.19	9808.01	917.24	9809.64	917.23
9818.66	917.14	9823.61	917.1	9829.66	917.25	9838.48	917.1	9841.15	916.99
9842.82	916.96	9848.87	916.78	9852.08	916.38	9854.78	916.22	9856.5	916.09
9857.67	916.03	9865.07	916.3	9869.79	916.49	9880.15	916.72	9882.92	916.8
9883.4	916.82	9885.06	916.77	9888.23	916.93	9897.75	917.09	9899.56	916.78
9905.16	917.11	9917.23	916.99	9930	917.17	9937.16	917.03	9942.62	916.97
9950.03	916.78	9957.34	916.7	9959.15	916.76	9962.13	916.81	9975.87	916.84
9982.39	916.26	9984.98	916.17	9992.2	915.91	9995.53	915.82	9996.28	915.8
10000.28	915.17	10003.97	915	10004	915	10009.1	915.48	10011.92	915.76
10013.7	915.81	10023.85	916.06	10027.57	916.08	10033.56	915.93	10038.54	915.93
10046.88	916	10048.69	916.02	10049.5	916.12	10056.25	916.28	10060.46	916.48
10071.3	916.77	10071.42	916.77	10071.51	916.77	10082.38	916.95	10091.4	917.06
10093.34	917.08	10095.72	917.07	10101.64	917.03	10104.3	916.99	10111.29	917
10115.26	916.96	10120.15	916.98	10126.22	917.01	10131.17	917.05	10137.18	917.13
10144.57	917.13	10148.15	917.13	10151.06	917.13	10159.11	917.12	10162.17	917.07
10168.99	917.11	10169.73	917.09	10170.07	917.11	10170.95	917.11	10181.03	917.12
10184.86	917.11	10191.99	917.11	10193.41	917.11	10202.95	917.18	10210.72	917.22
10213.91	917.23	10217.83	917.26	10224.87	917.32	10230.26	917.36	10235.83	917.4
10242.25	917.5	10246.8	917.56	10250.49	917.55	10257.76	917.46	10266.67	917.42
10268.08	917.41	10268.72	917.41	10270.38	917.44	10279.68	917.57	10283.22	917.66
10290.64	917.59	10290.78	917.59	10291.1	917.6	10298.35	917.69	10299.9	917.71

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9748.28	.05	9897.75	.015	9950.03	.05	9992.2	.048	10013.7	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9992.2	10013.7	345.89	341.61	333.05	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	917.30	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.15	Wt. n-Val.	0.045	0.048	0.050
W.S. Elev (ft)	917.16	Reach Len. (ft)	345.89	341.61	333.05
Crit W.S. (ft)		Flow Area (sq ft)	75.08	36.24	71.45
E.G. Slope (ft/ft)	0.010261	Area (sq ft)	75.08	36.24	71.45
Q Total (cfs)	416.00	Flow (cfs)	142.06	160.50	113.44
Top Width (ft)	425.17	Top Width (ft)	217.16	21.50	186.51
Vel Total (ft/s)	2.28	Avg. Vel. (ft/s)	1.89	4.43	1.59

```
* Max Chl Dpth (ft)      *    2.16  * Hydr. Depth (ft)        *    0.35  *    1.69  *    0.38  *
* Conv. Total (cfs)      *  4106.8  * Conv. (cfs)             *  1402.4  *  1584.5  *  1119.9  *
* Length Wtd. (ft)       *  342.04  * Wetted Per. (ft)        *  217.32  *   21.59  *  186.53  *
* Min Ch El (ft)         *  915.00  * Shear (lb/sq ft)        *    0.22  *    1.08  *    0.25  *
* Alpha                  *    1.83  * Stream Power (lb/ft s) *10299.90  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    1.28  * Cum Volume (acre-ft)    *   19.59  *   14.73  *   15.89  *
* C & E Loss (ft)        *    0.04  * Cum SA (acres)          *   25.49  *    7.79  *   19.25  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18A
REACH: J27                RS: 1.166

INPUT
Description: Survey Shots for Western Portion of Section
Station Elevation Data    num=     169
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    9361  916.24 9458.89   916.4 9521.88   916.3 9537.31   916.2 9539.19   915.4
  9545.19 915.47 9549.47  915.53 9556.02  915.62 9558.72  915.65 9565.18  915.52
  9566.86   915.5 9568.06   915.5 9577.69  915.49 9586.64  915.55 9588.53  915.53
  9591.16 915.48 9596.95  915.33 9599.36  915.33 9605.23  915.36  9610.2  915.38
  9612.24 915.39 9617.14  915.44 9619.89  915.46 9621.03  915.44 9623.81  915.47
  9631.86 915.46 9642.39  915.45  9642.7  915.45 9642.82  915.45 9643.13  915.45
  9653.53 915.47 9660.97  915.29 9664.37  915.29 9669.11  915.29 9673.41   915.3
   9675.2 915.31 9679.56  915.24 9686.04  915.14  9688.7  915.19  9695.1  915.14
  9696.87 915.16 9698.14  915.17 9707.71  915.32 9716.25  915.11 9725.86   914.9
  9728.08 915.01 9740.21  915.63 9742.23   915.6 9747.06  915.39 9751.04  915.26
  9757.52 915.38 9761.88  915.32 9772.47  915.28 9772.71  915.28 9772.81  915.28
  9773.05 915.28 9783.55  915.21 9791.06  915.44 9792.42  915.44 9794.35  915.44
  9799.74 915.16 9803.59  914.82 9805.02  914.88 9808.13  914.87 9815.68  915.02
  9819.15 915.01 9826.35   914.9  9828.5   914.9 9834.71  914.87 9837.01  914.87
  9842.03 914.89 9847.68  914.87 9850.27  914.88 9857.26  914.85 9858.05  914.85
  9858.34 914.86 9858.99  914.85 9869.01  914.81 9873.61  914.79 9879.68  914.68
  9881.39   914.7 9886.02  914.73 9889.17  914.78 9890.34  914.77 9892.89  914.82
  9901.01 914.79 9904.73  914.93 9911.67  914.79 9914.78  915.02 9922.34  915.57
  9926.79 915.56    9933  915.58 9943.53  915.57 9943.67  915.57 9943.75  915.57
  9954.33 915.56 9959.19  915.57    9965  915.64 9972.29   915.6 9975.66  915.57
  9977.65 915.52 9986.33  915.41  9990.2  915.31 9990.31  915.31    9997  915.54
    10000 915.61510001.05 915.6410007.66 915.7410010.27  915.710013.65  915.66
 10018.33 915.5910028.51 915.4810028.99 915.4810029.21 915.4710029.81  915.49
 10039.66 915.7210044.78 915.5210050.32 915.1610058.57 914.9410060.99   914.9
 10062.41 914.9310071.65 915.1210079.36 915.2810082.32 915.3310087.33  915.38
 10091.46 915.4410092.99 915.4210096.32 915.4210103.65 915.4810107.02  915.44
 10114.32 915.5310116.09 915.5310122.58 915.6210124.98 915.5710130.22  915.54
 10135.65 915.5610144.85 915.6510145.92 915.6710146.31 915.6610147.17  915.66
 10156.98 915.7110161.48 915.5410167.64 915.4410169.26 915.4310173.61  915.47
 10177.04 915.5110178.31 915.5110181.08 915.5210188.98 915.62 10192.6   915.6
 10199.64 915.6610202.37 915.6810210.31 915.7610215.94 915.7910220.97  915.88
 10231.13 915.7610231.64 915.7510231.93 915.76 10242.3 916.0410248.89   916.2
 10252.97 916.2310259.89 916.1410263.63 916.0710265.84   916.1 10274.3   916.3
 10278.18 916.2810284.96 916.2210288.65  916.210289.61   916.2

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
    9361     .05    9965    .04810007.66     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          996510007.66            647.91  658.35  661.34            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)         *  915.98  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.02  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         *  915.97  * Reach Len. (ft)         *  647.91  *  658.35  *  661.34  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)       *  308.79  *   18.42  *  102.57  *
* E.G. Slope (ft/ft)     *0.001924  * Area (sq ft)            *  308.79  *   18.42  *  102.57  *
* Q Total (cfs)          *  416.00  * Flow (cfs)              *  324.11  *   14.29  *   77.60  *
* Top Width (ft)         *  701.75  * Top Width (ft)          *  427.14  *   42.66  *  231.94  *
* Vel Total (ft/s)       *    0.97  * Avg. Vel. (ft/s)        *    1.05  *    0.78  *    0.76  *
* Max Chl Dpth (ft)      *    1.29  * Hydr. Depth (ft)        *    0.72  *    0.43  *    0.44  *
* Conv. Total (cfs)      *  9484.1  * Conv. (cfs)             *  7389.2  *   325.8  *  1769.1  *
* Length Wtd. (ft)       *  653.23  * Wetted Per. (ft)        *  427.37  *   42.67  *  231.99  *
* Min Ch El (ft)         *  915.31  * Shear (lb/sq ft)        *    0.09  *    0.05  *    0.05  *
* Alpha                  *    1.05  * Stream Power (lb/ft s) *10289.61  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.29  * Cum Volume (acre-ft)    *   18.07  *   14.52  *   15.22  *
* C & E Loss (ft)        *    0.00  * Cum SA (acres)          *   22.94  *    7.54  *   17.65  *
*********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18A
REACH: J27                RS: 1.042

INPUT
Description:
Station Elevation Data    num=     133
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    9700  913.65 9702.88  913.65 9714.07  913.68 9714.27  913.68 9714.33  913.68
  9714.44 913.68 9725.66  913.56 9729.07  913.54 9735.32  913.42 9737.06  913.42
```

```
 9739.14  913.43 9748.45  913.52 9756.19  913.48 9758.55  913.47 9759.84  913.47
 9764.22    913.4 9771.23  913.33 9773.29  913.33 9777.07  913.35 9782.62  913.43
 9789.29  913.32 9794.01  913.27 9797.95  913.27 9802.77  913.25 9805.41  913.36
 9810.14  913.44  9816.8  913.46 9818.83  913.44 9828.19  913.22 9839.43  913.48
 9839.58  913.48 9839.63  913.48 9839.71  913.48 9850.97  913.12 9860.58  913.08
 9861.74    913.1 9862.36  913.09  9864.5  913.07 9873.76  913.02 9881.46  913.06
 9885.15  913.07 9889.57  913.03 9896.54  912.89 9898.59  912.86 9902.34  913.04
 9907.93  913.09 9913.33  912.78 9919.32  913.09  9920.7  913.13 9923.22  913.25
 9928.07  913.25 9930.71  913.28 9939.72  913.12 9942.11  913.03 9942.81  913.04
  9944.1  913.06  9953.5     913 9964.79   912.9 9964.89   912.9 9964.97   912.9
 9972.29  913.05 9976.28  913.16 9985.85  912.98 9987.03  912.94 9987.67  912.94
 9989.86   912.9 9990.18   912.9 9999.06  912.67   10000912.735810001.77  912.86
10006.73  912.9210009.14  913.01 10009.2  913.0110010.46  913.0810014.93  913.04
10021.85  913.1210023.88  913.0510027.61  912.9910033.24  912.8710038.62  912.97
10044.63  912.9610048.49   912.910056.02  912.7410065.07  912.8810067.42  912.89
10069.37   912.910078.81  912.8110082.84  912.81 10090.2  912.7810090.24  912.78
10097.58  912.9510101.59  913.0510111.12  912.9610112.98  912.95 10119.7  913.01
10124.37  913.19   10132  913.0310135.77  912.9110140.29   913.110147.16  913.35
10149.18  913.3610152.88  913.3910158.55  913.3210163.92  913.2510169.94  913.27
10173.76  913.3710181.33  913.6610190.43  913.6310192.72  913.6410194.63  913.68
10204.12   913.910208.14  913.9210215.51   914.110222.88  914.18 10226.9  914.16
10230.25  914.1210236.39  914.3310237.62  914.3710238.29  914.3610240.57   914.4
10249.68  914.4910257.27  914.5710259.73  914.5810261.07   914.610265.65  914.67
10272.47  914.7510274.47  914.7910278.15  914.7810283.86  914.8110290.72  914.99
10295.25  915.0810299.02  915.12   10300  915.12

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
    9700     .05 9976.28    .04810021.85     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9976.2810021.85           509.76     500   488.5            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          *  913.69  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.05  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  913.64  * Reach Len. (ft)         *  509.76  *  500.00  *  488.50  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  106.53  *   31.12  *   96.57  *
* E.G. Slope (ft/ft)      *0.008328  * Area (sq ft)            *  106.53  *   31.12  *   96.57  *
* Q Total (cfs)           *  416.00  * Flow (cfs)              *  160.11  *   68.18  *  187.71  *
* Top Width (ft)          *  468.36  * Top Width (ft)          *  258.18  *   45.57  *  164.61  *
* Vel Total (ft/s)        *    1.78  * Avg. Vel. (ft/s)        *    1.50  *    2.19  *    1.94  *
* Max Chl Dpth (ft)       *    0.97  * Hydr. Depth (ft)        *    0.41  *    0.68  *    0.59  *
* Conv. Total (cfs)       *  4558.5  * Conv. (cfs)             *  1754.5  *   747.1  *  2056.9  *
* Length Wtd. (ft)        *  500.35  * Wetted Per. (ft)        *  258.24  *   45.59  *  164.65  *
* Min Ch El (ft)          *  912.67  * Shear (lb/sq ft)        *    0.21  *    0.35  *    0.30  *
* Alpha                   *    1.07  * Stream Power (lb/ft s)   *10300.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.91  * Cum Volume (acre-ft)     *   14.98  *   14.14  *   13.71  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)           *   17.84  *    6.87  *   14.64  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18A
REACH: J27                RS: 0.947

INPUT
Description: Teepee Road
Station Elevation Data    num=     105
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
************************************************************************************
 9609.78  911.92 9613.05   911.9 9613.74  911.89 9614.44  911.89 9631.84  911.88
 9632.75  911.88 9633.67  911.87 9650.65  911.78  9651.7  911.78 9652.76  911.78
 9669.58  911.78 9670.77  911.81 9685.15  911.63 9686.53  911.66 9687.92  911.63
 9702.08  911.56  9703.7  911.55 9705.34  911.55 9719.17  911.47 9721.03  911.47
 9734.35   911.4 9736.43  911.36  9738.5  911.33 9751.58  911.26 9753.82  911.24
 9756.06  911.19  9768.9  911.11 9771.33  911.13 9773.77   911.1 9787.04  911.03
 9789.58  911.08 9793.46  911.03 9805.44  911.03 9806.69   911 9817.54  910.94
 9823.61   910.9 9830.07   910.9 9840.38   910.9 9847.15   910.9  9857.1  910.84
 9866.32  910.85 9875.79  910.85 9885.64   910.9 9895.25  910.85 9905.93  910.86
  9914.8  910.87 9922.94  910.87 9934.43  910.94 9941.78  910.91 9952.79  910.92
 9964.92  910.94 9971.06  910.95 9984.13  911.04 9987.47  911.04  9989.3  911.04
 9993.64  910.99 9999.88  910.3910005.37  910.3910011.52  910.6610012.95  910.73
10016.45  910.7310024.48  910.6810032.53  910.8710035.91  910.88   10044  910.99
 10052.1  910.8410055.41  910.8410063.56  910.9510071.73  910.9210074.94  910.92
10083.16  910.7610086.21  910.7810094.48  910.9310102.76  911.1110105.97  911.13
10114.32  911.2610122.69  911.3410125.73  911.3610134.18  911.1110142.63  911.11
 10145.5  911.1310154.03  911.0410162.57  911.0410165.31  911.0610173.91  911.07
10182.53  911.1510185.13  911.1710193.79  911.4310202.46  911.4610204.97  911.47
 10213.7   911.410222.43  911.6610224.79  911.6810233.56  911.8910235.81  911.92
 10244.6  911.9610253.41  912.14 10255.6  912.1710264.44  912.2610273.28  912.27
10275.41   912.310284.28  912.5110293.15  912.5710295.23  912.59   10300  912.67

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9609.78     .05  9989.3    .048   10044     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9989.3   10044           500.29     500  494.63            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          *  911.77  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  911.75  * Reach Len. (ft)         *  500.29  *  500.00  *  494.63  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  209.57  *   55.66  *  111.97  *
```

```
* E.G. Slope (ft/ft)      *0.002188  * Area (sq ft)            *  209.57  *    55.66  *  111.97  *
* Q Total (cfs)           *  416.00  * Flow (cfs)              *  222.61  *    81.51  *  111.88  *
* Top Width (ft)          *  552.13  * Top Width (ft)          *  313.72  *    54.70  *  183.71  *
* Vel Total (ft/s)        *    1.10  * Avg. Vel. (ft/s)        *    1.06  *     1.46  *    1.00  *
* Max Chl Dpth (ft)       *    1.36  * Hydr. Depth (ft)        *    0.67  *     1.02  *    0.61  *
* Conv. Total (cfs)       *  8893.6  * Conv. (cfs)             *  4759.2  *   1742.5  *  2391.9  *
* Length Wtd. (ft)        *  498.61  * Wetted Per. (ft)        *  313.73  *    54.74  *  183.73  *
* Min Ch El (ft)          *  910.39  * Shear (lb/sq ft)        *    0.09  *     0.14  *    0.08  *
* Alpha                   *    1.06  * Stream Power (lb/ft s) *10300.00  *     0.00  *    0.00  *
* Frctn Loss (ft)         *    2.43  * Cum Volume (acre-ft)    *   13.13  *    13.64  *   12.54  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *   14.49  *     6.30  *   12.69  *
*****************************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18A
REACH: J27                RS: 0.852

INPUT
Description:
Station Elevation Data    num=     123
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
    9700  909.51 9703.91  909.57 9708.31  909.57 9712.72  909.61 9718.31  909.64
 9723.87  909.57 9728.31  909.53 9733.85  909.53 9738.31  909.55 9742.78  909.56
 9748.31  909.61 9753.82  909.54 9758.31  909.48 9762.82  909.51 9768.31  909.48
 9773.78  909.48 9778.31  909.48 9783.76  909.61 9788.31  909.64 9792.88  909.57
 9798.31  909.46 9803.72  909.49 9808.31   909.5 9812.92  909.48 9818.31  909.27
 9823.68  909.29 9828.31  909.26 9832.96  909.26 9838.31  909.41 9843.64  909.44
 9848.31  909.52 9853.62   909.5 9858.31   909.4 9863.02  909.33 9868.31  909.18
 9873.58  909.11 9878.31   909.1 9883.06  909.15 9888.31  909.13 9893.54  909.16
 9898.31  909.06 9903.52  909.07 9908.31  909.07 9913.12  908.99 9918.31  908.84
 9923.48  908.77 9928.31  908.77 9933.16  908.65 9938.31  908.59 9943.44  908.51
 9948.31  908.52 9953.42  908.43 9958.31  908.33 9963.22  908.07 9968.31  907.86
 9973.38  908.28 9978.31  908.55 9983.36  908.57 9991.91  908.03 9993.29   907.8
 9998.73  906.89   10000907.052610004.73  907.6610010.92  908.02 10013.3  908.16
10018.31  908.1810023.28  908.2110028.31  908.1710033.36  908.2610038.31  908.32
10043.24  908.4110048.31  908.5110053.22  908.6210058.31  908.6510063.42  908.71
10068.31  908.7310073.18   908.810078.31  908.9210083.46  908.8510088.31  908.77
10093.14  908.8610098.31  908.9510103.12  908.8810108.31  908.7910113.52  908.92
10118.31  908.9710123.08  909.1710128.31  909.3810133.56  909.1210138.31  909.04
10143.04  908.9810148.31  908.93 10153.6  908.8910158.31  908.84   10163  908.86
10168.31  908.9610172.98  909.0510178.31  909.2610183.66  908.9410188.31  908.97
10192.94  909.0410198.31  909.11 10203.7  909.2510208.31  909.11 10212.9  909.23
10218.31  909.5110222.88  909.3510228.31  909.0510233.76  908.9910238.31  909.11
10242.84  909.0910248.31  909.15 10253.8  909.1510258.31  909.19 10262.8  909.24
10268.31  909.4110272.78  909.4410278.31  909.4210283.86  909.4610288.31  909.63
10292.74   909.610298.31  909.61   10300  909.65

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
    9700     .05 9991.91    .04810010.92     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.    Expan.
       9991.9110010.92            500.43     500  497.76              .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  909.32  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.26  * Wt. n-Val.             *   0.050  *    0.048  *   0.050  *
* W.S. Elev (ft)          *  909.06  * Reach Len. (ft)        *  500.43  *   500.00  *  497.76  *
* Crit W.S. (ft)          *  909.06  * Flow Area (sq ft)      *   46.45  *    29.23  *   54.59  *
* E.G. Slope (ft/ft)      *0.019009  * Area (sq ft)            *   46.45  *    29.23  *   54.59  *
* Q Total (cfs)           *  416.00  * Flow (cfs)              *  128.96  *   165.32  *  121.72  *
* Top Width (ft)          *  271.53  * Top Width (ft)          *   84.95  *    19.01  *  167.56  *
* Vel Total (ft/s)        *    3.19  * Avg. Vel. (ft/s)        *    2.78  *     5.66  *    2.23  *
* Max Chl Dpth (ft)       *    2.17  * Hydr. Depth (ft)        *    0.55  *     1.54  *    0.33  *
* Conv. Total (cfs)       *  3017.3  * Conv. (cfs)             *   935.4  *   1199.1  *   882.8  *
* Length Wtd. (ft)        *  499.35  * Wetted Per. (ft)        *   85.01  *    19.16  *  167.59  *
* Min Ch El (ft)          *  906.89  * Shear (lb/sq ft)        *    0.65  *     1.81  *    0.39  *
* Alpha                   *    1.62  * Stream Power (lb/ft s) *10300.00  *     0.00  *    0.00  *
* Frctn Loss (ft)         *    2.38  * Cum Volume (acre-ft)    *   11.66  *    13.16  *   11.59  *
* C & E Loss (ft)         *    0.06  * Cum SA (acres)          *   12.20  *     5.87  *   10.69  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The program used critical depth
         for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
         water surface came back below critical depth.  This indicates that there is not a valid subcritical answer.  The program
         defaulted to critical depth.

CROSS SECTION


RIVER: 1S2WS18A
REACH: J27                RS: 0.758

INPUT
Description: Kaibab Road
Station Elevation Data    num=     138
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
  9481.1  907.71 9481.94   907.7 9488.14  907.66 9497.57  907.53 9504.59   907.4
 9511.64  907.32 9519.79  907.22 9522.41  907.22 9527.86   907.2 9527.96   907.2
```

9532.58	907.17	9537.69	907.14	9545.86	906.85	9546.97	906.79	9548.16	906.79
9548.83	906.77	9557.52	906.7	9559.34	906.67	9568.03	906.69	9569.8	906.68
9578.5	906.42	9587.36	906.25	9589.35	906.23	9598.23	906.24	9607.28	906.35
9608.97	906.33	9618.05	906.04	9627.3	906.16	9628.62	906.16	9637.9	906.1
9638.98	906.1	9639.15	906.11	9653.67	906.15	9663.26	905.98	9667.82	905.96
9672.43	905.89	9681.91	905.79	9686.54	905.72	9691.22	905.57	9700	905.47
9700.61	905.46	9705.28	905.51	9714.65	905.45	9719.23	905.48	9723.86	905.43
9733.31	905.38	9737.88	905.35	9742.49	905.29	9751.99	905.24	9756.51	905.25
9761.08	905.17	9770.63	905.12	9775.13	905.06	9784.81	905.01	9789.21	905.09
9793.65	905.03	9804.27	904.92	9808.54	904.9	9812.86	904.94	9823.81	904.88
9827.9	904.96	9832.05	904.85	9843.23	904.79	9847.17	904.78	9851.16	904.71
9862.63	904.65	9866.39	904.68	9870.21	904.63	9882.24	904.57	9886.31	904.58
9890.44	904.5	9901.79	904.44	9906.2	904.46	9910.67	904.43	9921.44	904.38
9926.16	904.4	9930.94	904.41	9941.12	904.37	9946.13	904.47	9951.2	904.47
9960.8	904.43	9962.1	904.43	9966.05	904.43	9971.37	904.42	9980.53	904.43
9986.04	904.43	9987.82	904.43	9993.6	904.43	9999.16	904.4810004.79		904.52
10007.19	904.5210012.15		904.5210017.86		904.5110023.63		904.49	10028.1	904.496
10030.76	904.510036.58		904.58	10043.6	904.6310049.47		904.5710055.41		904.54
10062.48	904.5810068.45		904.6210074.48		904.6710081.35		904.7210087.43		904.72
10093.59	904.7910100.29		904.8310106.46		904.8810113.06		904.9210119.27		904.94
10125.54	904.9610131.99		90510138.29		905.0210144.67		905.1410151.74		905.21
10158.15	905.2810164.65		905.3210171.54		905.4210178.06		905.3810184.65		905.58
10191.32	905.6810197.93		905.7510204.62		905.85	10211.1	905.9510217.81		905.86
10224.6	905.8710230.89		905.96	10237.7	906.04	10244.6	906.0410250.69		906.13
10257.6	906.33	10264.6	906.3710270.34		906.410277.32		906.3210284.38		906.49
10290.03	906.5210297.08		906.54	10300	906.58				

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9481.1	.015	9532.58	.05	9951.2	.04810004.79		.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9951.210	004.79	339	339.2	339.24	.1	.3

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
9481.1	9899.67	906	F
10092.46	10300	906	F

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	905.85	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.04	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	905.81	Reach Len. (ft)	339.00	339.20	339.24
Crit W.S. (ft)	905.04	Flow Area (sq ft)	71.50	73.04	106.51
E.G. Slope (ft/ft)	0.002124	Area (sq ft)	236.40	73.04	172.89
Q Total (cfs)	416.00	Flow (cfs)	121.82	128.09	166.09
Top Width (ft)	521.13	Top Width (ft)	270.72	53.59	196.82
Vel Total (ft/s)	1.66	Avg. Vel. (ft/s)	1.70	1.75	1.56
Max Chl Dpth (ft)	1.44	Hydr. Depth (ft)	1.39	1.36	1.21
Conv. Total (cfs)	9026.6	Conv. (cfs)	2643.4	2779.3	3603.9
Length Wtd. (ft)	339.15	Wetted Per. (ft)	51.53	53.59	87.67
Min Ch El (ft)	904.42	Shear (lb/sq ft)	0.18	0.18	0.16
Alpha	1.01	Stream Power (lb/ft s)	10300.00	0.00	0.00
Frctn Loss (ft)	0.43	Cum Volume (acre-ft)	10.03	12.57	10.29
C & E Loss (ft)	0.01	Cum SA (acres)	10.16	5.46	8.61

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: 1S2WS18A
REACH: J27 RS: 0.693

INPUT
Description: Narramore Road
Station Elevation Data num= 194

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9357.74	908.25	9359.72	908.24	9367.34	908.04	9374.94	908.1	9377.34	908.13
9379.76	908.16	9387.34	908.32	9394.9	908.26	9397.34	908.27	9404.89	908.14
9407.34	908.1	9409.81	908.13	9417.34	908.13	9424.85	908.1	9427.34	908.01
9429.85	907.97	9437.34	907.87	9444.81	907.59	9447.34	907.47	9454.79	907.39
9457.34	907.37	9459.9	907.35	9467.34	907.11	9472.6	906.97	9484.46	906.66
9494.28	906.64	9499.87	906.6	9512.2	906.6	9513.64	906.6	9515.13	906.55
9530.42	906.4	9530.48	906.4	9530.65	906.41	9547.34	906.9	9554.61	906.69
9557.34	906.64	9560.09	906.61	9567.34	906.61	9574.57	906.48	9577.34	906.45
9580.13	906.42	9587.34	906.39	9594.54	906.34	9597.34	906.33	9604.52	906.28
9607.34	906.24	9610.18	906.25	9617.34	906.31	9624.48	906.09	9627.34	906.09
9630.22	906.05	9637.34	906.12	9643.14	906.09	9657.34	905.97	9664.41	905.86
9667.34	905.83	9674.39	905.92	9677.34	905.93	9680.31	905.92	9687.34	905.75
9694.35	905.71	9697.34	905.68	9700.35	905.68	9707.34	905.7	9714.31	905.64
9717.34	905.62	9724.3	905.61	9727.34	905.6	9730.4	905.58	9737.34	905.59
9744.26	905.4	9747.34	905.36	9750.44	905.28	9757.34	905.19	9764.22	905.08
9767.34	905.11	9774.2	905.28	9777.34	905.27	9780.5	905.21	9787.34	905.03
9794.17	904.96	9797.34	904.96	9800.53	905.01	9807.34	904.93	9814.13	904.93
9817.34	904.86	9824.11	904.77	9827.34	904.75	9830.59	904.72	9837.34	904.68
9844.07	904.64	9847.34	904.61	9850.63	904.6	9857.34	904.6	9864.04	904.6
9867.34	904.58	9874.02	904.53	9877.34	904.52	9880.68	904.47	9887.34	904.33
9893.98	904.29	9897.34	904.27	9900.72	904.16	9907.34	904.05	9913.95	904.06
9917.34	904.06	9923.93	904.1	9927.34	904.11	9930.77	904.08	9937.34	904
9943.89	904.03	9947.34	904.03	9950.81	904.05	9957.34	903.98	9963.85	904.01
9967.34	904	9970.85	903.98	9977.34	903.98	9983.82	903.94	9986.84	903.87
9987.34	903.86	9993.8	903.83	9997.34	903.91	10000.9	903.8810007.34		903.87
10009.09	903.8710013.76		903.8610017.34		903.8910020.94		903.8710027.34		903.89
10033.72	903.7910037.34		903.7210043.71		903.7310047.34		903.79	10051	903.83
10057.34	903.8710063.67		904.0110067.34		904.0710071.03		904.0310077.34		903.94
10083.63	904.0410087.34		904.0110093.61		903.8910097.34		903.9410101.09		903.96
10107.34	903.9810113.58		904.0810117.35		904.0910121.13		904.1310127.35		904.24
10133.54	904.2410137.35		904.2810143.52		904.4810147.35		904.5210151.18		904.6
10157.35	904.5810163.48		904.6110167.35		904.5910171.22		904.6710177.35		904.67
10183.45	904.7810187.35		904.8310193.43		904.7710197.35		904.7410201.28		904.74

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10207.35  904.7310213.39  904.8210217.35  904.8510221.31  904.9510225.29  904.99
10236.75  905.3510239.28  905.3910247.54   905.510252.29   905.210259.08  905.25
10265.87  905.2910272.68  905.2810274.74  905.4210277.88  905.6410286.15  905.59
10289.19  905.6210297.45  905.6610305.72  905.6310308.75  905.6710317.02  905.74
10325.29  905.73 10328.2   905.710336.46  905.6410342.82  905.4910349.82  905.53
10356.84  905.5910363.87  905.5210370.91  905.5910375.34  905.71

Manning's n Values         num=       5
     Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val      Sta   n Val
*****************************************************************************
 9357.74     .05 9494.28    .015 9515.13     .05 9983.82    .04810057.34     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9983.8210057.34             915.4  892.49  870.75              .1       .3
Ineffective Flow     num=        2
   Sta L   Sta R    Elev  Permanent
 9357.74 9860.01   905.8        F
10160.5210375.34   905.8        F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  905.41  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.02  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  905.39  * Reach Len. (ft)         *  915.40  *  892.49  *  870.75  *
* Crit W.S. (ft)          *  904.46  * Flow Area (sq ft)       *  151.57  *  113.91  *  128.14  *
* E.G. Slope (ft/ft)      *0.000849  * Area (sq ft)            *  202.70  *  113.91  *  175.01  *
* Q Total (cfs)           *  416.00  * Flow (cfs)              *  150.21  *  137.59  *  128.20  *
* Top Width (ft)          *  519.37  * Top Width (ft)          *  238.83  *   73.52  *  207.02  *
* Vel Total (ft/s)        *    1.06  * Avg. Vel. (ft/s)        *    0.99  *    1.21  *    1.00  *
* Max Chl Dpth (ft)       *    1.67  * Hydr. Depth (ft)        *    1.22  *    1.55  *    1.24  *
* Conv. Total (cfs)       * 14275.6  * Conv. (cfs)             *  5154.8  *  4721.5  *  4399.4  *
* Length Wtd. (ft)        *  893.04  * Wetted Per. (ft)        *  123.82  *   73.52  *  103.19  *
* Min Ch El (ft)          *  903.72  * Shear (lb/sq ft)        *    0.06  *    0.08  *    0.07  *
* Alpha                   *    1.03  * Stream Power (lb/ft s) *10375.34  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.37  * Cum Volume (acre-ft)    *    8.32  *   11.84  *    8.94  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)          *    8.18  *    4.96  *    7.04  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 1S2WS18A
REACH: J27                RS: 0.524

INPUT
Description:
Station Elevation Data     num=      28
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
  9942.6  903.08 9944.08  903.02  9952.6  902.69 9963.17  902.07 9970.84   901.6
 9972.17  901.46 9981.49   900.3 9984.32  899.93 9984.67   899.9 9985.24  899.89
 9988.45  899.88 10000.2  899.82 10002.6  899.81 10004.5  899.8110013.38   899.7
 10018.3  899.6310031.44  901.09 10032.6  901.1810041.73  902.43 10042.6  902.55
10046.15  903.0210052.03  903.7310053.61  903.9310056.35  903.9610067.45  904.22
 10072.6  904.3310081.99   904.4 10082.3  904.41

Manning's n Values         num=       3
     Sta   n Val      Sta   n Val      Sta   n Val
*************************************************
  9942.6     .05  9952.6    .048 10042.6     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
        9952.6 10042.6             341.28  341.52  341.89              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  903.02  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.29  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  902.73  * Reach Len. (ft)         *  341.28  *  341.52  *  341.89  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *    0.02  *  178.00  *    0.12  *
* E.G. Slope (ft/ft)      *0.007820  * Area (sq ft)            *    0.02  *  178.00  *    0.12  *
* Q Total (cfs)           *  766.00  * Flow (cfs)              *    0.00  *  765.93  *    0.06  *
* Top Width (ft)          *   92.37  * Top Width (ft)          *    1.01  *   90.00  *    1.35  *
* Vel Total (ft/s)        *    4.30  * Avg. Vel. (ft/s)        *    0.19  *    4.30  *    0.52  *
* Max Chl Dpth (ft)       *    3.10  * Hydr. Depth (ft)        *    0.02  *    1.98  *    0.09  *
* Conv. Total (cfs)       *  8662.3  * Conv. (cfs)             *     0.0  *  8661.5  *     0.7  *
* Length Wtd. (ft)        *  341.52  * Wetted Per. (ft)        *    1.01  *   90.32  *    1.37  *
* Min Ch El (ft)          *  899.63  * Shear (lb/sq ft)        *    0.01  *    0.96  *    0.04  *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *10082.30  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.03  * Cum Volume (acre-ft)    *    6.19  *    8.85  *    7.19  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)          *    5.66  *    3.29  *    4.96  *
*****************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18A
REACH: J27                RS: 0.460

INPUT
Description:
Station Elevation Data     num=      43
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9914.05  901.87 9914.17  901.87 9924.05  901.72 9933.46  901.48 9934.05  901.47
 9937.79   901.2 9953.31  900.12 9957.85  899.71 9970.86  898.56 9982.26  898.03
```

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 9984.07   897.9 9985.94  897.91 9989.39  897.86 9994.07   897.810001.82  897.85
10004.08  897.88   10007  897.8910009.38   897.910020.55  897.9610028.77  898.54
10040.18  899.3510049.69  899.6110054.09  899.7510057.71  899.8210064.09  899.97
10070.17  900.56 10074.1  900.8410078.22  901.21 10084.1  901.4310088.47   901.4
 10094.1  901.5110099.47  901.5810104.11  901.3210108.98   901.410114.11   901.1
   10119  901.3110124.11  901.3810129.48  901.5210134.11  901.6810139.74  901.57
10144.12  901.3810148.29  901.4410152.89   901.6

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***************************************************
 9914.05     .05 9937.79    .04810078.22     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9937.7910078.22           370.36  370.24  370.01            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  900.95  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.16  * Wt. n-Val.              *          *   0.048  *         *
* W.S. Elev (ft)          *  900.79  * Reach Len. (ft)         *  370.36  *  370.24  *  370.01  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *          *  240.44  *          *
* E.G. Slope (ft/ft)      *0.004659  * Area (sq ft)            *          *  240.44  *          *
* Q Total (cfs)           *  766.00  * Flow (cfs)              *          *  766.00  *          *
* Top Width (ft)          *  129.67  * Top Width (ft)          *          *  129.67  *          *
* Vel Total (ft/s)        *    3.19  * Avg. Vel. (ft/s)        *          *    3.19  *          *
* Max Chl Dpth (ft)       *    2.99  * Hydr. Depth (ft)        *          *    1.85  *          *
* Conv. Total (cfs)       * 11222.2  * Conv. (cfs)              *          * 11222.2  *          *
* Length Wtd. (ft)        *  370.22  * Wetted Per. (ft)        *          *  129.87  *          *
* Min Ch El (ft)          *  897.80  * Shear (lb/sq ft)        *          *    0.54  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *10152.89  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.14  * Cum Volume (acre-ft)    *    6.19  *    7.21  *    7.19  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *    5.65  *    2.43  *    4.95  *
*****************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18A
REACH: J27                RS: 0.390

INPUT
Description:
Station Elevation Data    num=      89
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
  9736.8  900.45 9742.93  900.15 9746.75     900 9752.93  899.71 9756.69  899.72
 9762.93  899.69 9771.94  899.78 9778.68  899.77 9781.98  899.91  9790.8   900.2
 9800.75  900.04 9803.51  899.96 9809.43  900.02 9810.08  900.03 9822.93  900.12
 9826.28   900.1 9832.93  899.96 9836.22  899.93 9842.93  899.93 9846.16  899.89
 9852.93   899.9 9856.11  899.91 9862.93  899.82 9866.05  899.78 9872.93   899.6
 9875.99  899.57 9882.93  899.68 9885.93  899.69 9892.93  899.56 9895.87  899.58
 9902.93  899.55 9905.82  899.51 9912.93  899.63 9915.76  899.63 9922.93  899.39
  9925.7   899.4 9932.93  899.67 9935.64  899.68 9942.93  899.63 9953.83  898.85
 9961.57   898.3 9966.99  897.52 9974.09   896.5 9988.03  896.28  9989.5  896.27
 9992.93  896.23 9995.29  896.2110002.93  896.4810005.23  896.5210011.08  896.51
10012.93  896.5110015.89  896.4910025.49   896.310031.39  897.5910038.83  899.09
10049.98  898.7710052.94  898.7210054.94  898.6610062.94  898.4710064.89  898.43
10072.94  898.3710074.83   898.510082.94  898.7110084.77  898.7410092.94  899.05
10094.71  899.0110102.94  899.0310104.65  899.0710112.94  898.92 10114.6   898.9
10122.94  898.9410124.54  898.9810132.94  899.0410134.48  899.0610142.94  899.23
10144.42  899.2810152.94  899.4910154.36  899.5210162.94  899.8910164.31  899.93
10172.94  899.9710174.25  899.9810182.94  900.0410184.19  900.0510192.94  900.13
10194.13  900.1210202.94  900.2110204.07  900.2410209.43  900.35

Manning's n Values        num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*********************************************************************************
  9736.8     .05 9781.98    .015 9810.08     .05 9953.83    .04810038.83     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9953.8310038.83           559.98  556.56  549.62            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  899.79  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.11  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  899.68  * Reach Len. (ft)         *  559.98  *  556.56  *  549.62  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   11.88  *  232.29  *   91.11  *
* E.G. Slope (ft/ft)      *0.002189  * Area (sq ft)            *   11.88  *  232.29  *   91.11  *
* Q Total (cfs)           *  766.00  * Flow (cfs)              *    4.78  *  655.38  *  105.84  *
* Top Width (ft)          *  285.44  * Top Width (ft)          *   81.16  *   85.00  *  119.28  *
* Vel Total (ft/s)        *    2.28  * Avg. Vel. (ft/s)        *    0.40  *    2.82  *    1.16  *
* Max Chl Dpth (ft)       *    3.47  * Hydr. Depth (ft)        *    0.15  *    2.73  *    0.76  *
* Conv. Total (cfs)       * 16370.8  * Conv. (cfs)              *   102.1  * 14006.8  *  2262.0  *
* Length Wtd. (ft)        *  555.33  * Wetted Per. (ft)        *   81.20  *   85.45  *  119.32  *
* Min Ch El (ft)          *  896.21  * Shear (lb/sq ft)        *    0.02  *    0.37  *    0.10  *
* Alpha                   *    1.34  * Stream Power (lb/ft s) *10209.43  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.03  * Cum Volume (acre-ft)    *    6.14  *    5.20  *    6.80  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)          *    5.31  *    1.51  *    4.45  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION
```

RIVER: 1S2WS18A
REACH: J27 RS: 0.284

INPUT
Description:
Station Elevation Data num= 105

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800	898.06	9801.3	898.06	9807.12	898.12	9813.76	898.21	9814.94	898.18
9821.41	897.9	9826.23	897.83	9828.56	897.76	9831.7	897.7	9835.71	897.55
9838.69	897.48	9843.82	897.08	9850.85	896.83	9856.02	896.56	9862.22	896.42
9868.19	896.53	9874.55	896.63	9883.88	896.41	9884.15	896.41	9884.41	896.39
9884.59	896.39	9893.71	896.05	9897.01	896.05	9904.17	895.83	9912.99	895.72
9913.82	895.72	9914.33	895.72	9925.69	895.6	9927.15	895.57	9932.26	895.51
9935.77	895.54	9938.38	895.54	9949.02	895.5	9950.06	895.49	9950.84	895.49
9957.21	895.56	9963.3	895.45	9964.36	895.44	9965.78	895.47	9975.76	895.61
9978.65	895.56	9989.18	895.84	9989.85	895.86	9990.65	895.89	9999.62	893.79
10000.4	893.58	10001.88	893.97	10010.14	896.36	10012.04	896.22	10015.8	895.94
10025.61	895.32	10032.81	895.24	10035.83	895.29	10038.07	895.28	10042.98	895.27
10049.57	895.29	10050.12	895.29	10050.53	895.29	10057.27	895.29	10062.99	895.22
10066.33	895.27	10075.45	895.6	10078.71	895.73	10083.09	896.1	10085.86	896.3
10087.91	896.39	10099.85	896.78	10100.15	896.79	10100.38	896.79	10101.9	896.79
10112.84	896.79	10114.45	896.77	10116.61	896.75	10121.59	896.69	10125.3	896.64
10128.74	896.58	10133.37	896.57	10137.76	896.54	10143.04	896.53	10150.13	896.63
10150.18	896.63	10150.22	896.63	10157.33	896.69	10162.68	897.38	10166.89	897.39
10172.21	896.73	10177.71	896.67	10184.57	896.69	10187.89	896.62	10198.4	896.4
10202.72	896.48	10208.09	896.49	10214.95	896.55	10220.03	896.56	10229.82	896.57
10242.9	896.77	10244.65	896.78	10245.67	896.8	10256.83	897.41	10262.73	897.67
10267.45	897.85	10271.68	897.74	10274.84	897.81	10284.21	897.99	10284.55	898

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9800	.05	9989.18	.048	10012.04	.05	10202.72	.015	10229.82	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9989.18	10012.04	491.83	500	512.46	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	896.73	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.38	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	896.34	Reach Len. (ft)	491.83	500.00	512.46
Crit W.S. (ft)	896.34	Flow Area (sq ft)	68.61	29.90	64.30
E.G. Slope (ft/ft)	0.030682	Area (sq ft)	68.61	29.90	64.30
Q Total (cfs)	766.00	Flow (cfs)	271.76	191.77	302.46
Top Width (ft)	200.71	Top Width (ft)	103.33	22.57	74.80
Vel Total (ft/s)	4.70	Avg. Vel. (ft/s)	3.96	6.41	4.70
Max Chl Dpth (ft)	2.76	Hydr. Depth (ft)	0.66	1.32	0.86
Conv. Total (cfs)	4373.1	Conv. (cfs)	1551.5	1094.8	1726.8
Length Wtd. (ft)	502.18	Wetted Per. (ft)	103.35	23.24	74.87
Min Ch El (ft)	893.58	Shear (lb/sq ft)	1.27	2.46	1.65
Alpha	1.11	Stream Power (lb/ft s)	10284.55	0.00	0.00
Frctn Loss (ft)	1.83	Cum Volume (acre-ft)	5.63	3.53	5.82
C & E Loss (ft)	0.09	Cum SA (acres)	4.12	0.83	3.22

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: 1S2WS18A
REACH: J27 RS: 0.189

INPUT
Description:
Station Elevation Data num= 84

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800	895.36	9807.93	894.97	9816.02	894.74	9817.93	894.74	9826.02	894.55
9827.93	894.51	9829.84	894.51	9837.93	894.42	9846.02	894.39	9847.93	894.35
9849.84	894.31	9857.93	894.12	9866.02	894.09	9867.93	894.06	9876.02	893.93
9877.93	893.96	9879.84	893.98	9887.93	894.18	9896.02	893.91	9897.93	893.82
9899.84	893.81	9907.93	893.79	9916.02	893.62	9917.93	893.52	9926.02	893.66
9927.93	893.74	9929.84	893.73	9937.93	893.69	9946.02	893.55	9947.93	893.51
9949.84	893.4	9957.93	892.93	9966.02	892.41	9967.93	892.24	9976.02	892.15
9978.38	892.08	9979.84	892.01	9982.04	891.89	9985.03	891.71	9989.95	891.4
9994.32	890.09	9999.58	888.41	10002.89	889.51	10009.78	891.9	10010.1	891.93
10022.46	893.08	10027.83	893.49	10028.88	893.53	10030.95	893.51	10039.77	893.57
10047.89	893.32	10048.43	893.32	10056.38	891.33	10061.75	889.92	10066.54	891.39
10071.01	892.86	10072.78	893.47	10075.22	894.1	10083.5	893.96	10096.02	893.45
10097.93	893.41	10099.84	893.46	10108.18	893.64	10111.22	893.77	10116.38	893.83
10120.21	893.82	10124.64	893.84	10127	893.89	10136.02	894.1	10137.93	894.13
10146.02	894.62	10147.93	894.68	10149.84	894.79	10157.93	895.25	10166.02	895.4
10167.93	895.54	10169.84	895.51	10177.93	895.25	10186.02	895.11	10187.93	895.07
10196.02	895.29	10197.93	895.32	10199.84	895.35	10200	895.35		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9800	.05	9985.03	.048	10010.1	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9985.03	10010.1	453.7	451.57	442.29	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	894.76	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.07	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	894.70	Reach Len. (ft)	453.70	451.57	442.29
Crit W.S. (ft)		Flow Area (sq ft)	168.02	108.81	195.04
E.G. Slope (ft/ft)	0.001327	Area (sq ft)	168.02	108.81	195.04
Q Total (cfs)	766.00	Flow (cfs)	183.93	317.74	264.33
Top Width (ft)	328.37	Top Width (ft)	165.20	25.07	138.10
Vel Total (ft/s)	1.62	Avg. Vel. (ft/s)	1.09	2.92	1.36
Max Chl Dpth (ft)	6.30	Hydr. Depth (ft)	1.02	4.34	1.41
Conv. Total (cfs)	21024.3	Conv. (cfs)	5048.4	8721.0	7255.0
Length Wtd. (ft)	450.64	Wetted Per. (ft)	165.28	26.12	139.27
Min Ch El (ft)	888.40	Shear (lb/sq ft)	0.08	0.35	0.12
Alpha	1.69	Stream Power (lb/ft s)	10200.00	0.00	0.00
Frctn Loss (ft)	1.67	Cum Volume (acre-ft)	4.29	2.73	4.30
C & E Loss (ft)	0.08	Cum SA (acres)	2.61	0.55	1.97

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS18A
REACH: J27 RS: 0.104

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800.02	895.58	9800.12	895.57	9806.24	895.44	9809.2	895.34	9816.3	895.04
9818.27	894.99	9826.36	894.9	9827.34	894.94	9836.42	894.09	9836.44	894.09
9845.49	893.82	9846.48	893.74	9847.7	893.63	9856.53	893.37	9858.98	893.31
9866.59	892.98	9872.72	892.76	9876.65	892.75	9881.54	892.75	9886.71	892.97
9890.87	893.18	9896.77	893.36	9904.11	893.27	9906.83	893.14	9915.39	892.63
9916.89	892.52	9918.09	892.44	9926.94	891.67	9929.2	891.56	9937	891.17
9945.31	891.24	9947.06	891.21	9954.39	891.19	9957.12	891.09	9960.52	890.89
9967.18	890.73	9979.84	891.14	9986.07	891	9990.77	889.44	9990.84	889.41
10000.42	886.11	10010.81	889.38	10014.75	890.62	10021.23	892.67	10029.31	892.63
10037.59	892.82	10045.13	892.89	10047.65	892.81	10054.21	892.95	10057.71	892.93
10063.28	892.81	10067.77	892.79	10072.36	892.81	10077.82	892.82	10081.43	892.79
10087.88	892.63	10090.51	892.71	10097.94	892.64	10099.58	892.53	10108	892.49
10108.66	892.48	10114.72	892.77	10117.73	892.91	10118.06	892.91	10118.47	892.9
10128.12	892.71	10135.88	892.49	10138.18	892.53	10144.96	892.56	10148.23	892.49
10152.31	892.34	10158.29	892.38	10163.1	892.16	10168.35	892.26	10174.88	892.53
10178.41	892.78	10181.25	892.61	10188.47	892.52	10190.33	892.57	10198.53	892.57
10200.02	892.53								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9800.02	.05	9986.07	.04	10014.75	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.07	10014.75		487.26	488.91	497.03	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	893.01	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.88	Wt. n-Val.	0.050	0.048	0.050
W.S. Elev (ft)	892.13	Reach Len. (ft)	487.26	488.91	497.03
Crit W.S. (ft)	892.13	Flow Area (sq ft)	61.49	105.06	3.60
E.G. Slope (ft/ft)	0.013487	Area (sq ft)	61.49	105.06	3.60
Q Total (cfs)	1083.00	Flow (cfs)	205.65	867.37	9.98
Top Width (ft)	97.86	Top Width (ft)	64.41	28.68	4.77
Vel Total (ft/s)	6.36	Avg. Vel. (ft/s)	3.34	8.26	2.77
Max Chl Dpth (ft)	6.03	Hydr. Depth (ft)	0.95	3.66	0.75
Conv. Total (cfs)	9325.6	Conv. (cfs)	1770.8	7468.9	85.9
Length Wtd. (ft)	490.46	Wetted Per. (ft)	64.46	30.19	5.00
Min Ch El (ft)	886.10	Shear (lb/sq ft)	0.80	2.93	0.61
Alpha	1.40	Stream Power (lb/ft s)	10200.02	0.00	0.00
Frctn Loss (ft)	0.55	Cum Volume (acre-ft)	3.09	1.62	3.29
C & E Loss (ft)	0.26	Cum SA (acres)	1.41	0.28	1.24

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: 1S2WS18A
REACH: J27 RS: 0.011

INPUT
Description: Upstream of Carver Road
Station Elevation Data num= 169

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9567.65	895.98	9569.01	896.01	9574.23	895.93	9579.6	895.78	9584.23	895.55
9588.74	895.49	9594.23	895.37	9599.88	895.39	9604.23	895.27	9608.47	895.2
9614.23	894.89	9618.34	894.81	9624.23	894.71	9630.3	894.81	9634.23	894.74
9638.07	894.67	9644.24	894.36	9650.58	894.37	9654.24	894.32	9657.8	894.25

```
 9664.24  894.02 9667.66     894 9674.24  893.89    9681  893.76 9684.24  893.63
 9687.39  893.55 9694.24  893.51 9701.28  893.23 9704.24  893.15 9707.13  893.13
 9714.24  893.01 9716.99  892.99 9724.24  892.98  9731.7  892.94 9734.24  892.91
 9736.72   892.8 9744.24  892.54 9751.98  892.42 9754.25  892.44 9756.45  892.41
 9764.25   892.1 9766.32  892.01 9774.25  891.75  9782.4  891.53 9784.25  891.49
 9786.05   891.5 9794.25  891.41 9802.68  891.31 9804.25  891.29 9805.78  891.23
 9814.25  891.11 9822.96  890.95 9824.25  890.95 9825.51  890.93 9834.25  890.86
 9835.38  890.86 9844.25  890.61 9853.38  890.47 9854.26  890.44 9855.11  890.42
 9864.26  890.23 9873.66  889.71 9874.26  889.68 9874.84  889.65 9884.26  889.43
 9884.71  889.43 9894.26  889.01 9904.08  888.86 9904.26  888.86 9904.44  888.85
 9914.26   888.4 9917.33  888.34 9924.17  888.22 9924.26  888.22 9924.36  888.22
 9934.26  888.05  9943.9  888.34 9944.26  888.35 9944.64  888.36 9954.26  888.52
 9963.63  888.08 9964.27  888.07  9973.5  887.83 9974.27  887.84    9979   887.9
 9988.42  888.09 9990.27  887.59 9991.45  887.08 9991.72  886.97 9998.97   884.1
10001.24  884.0310003.05  884.1710007.24  885.9710010.62  887.5810014.75  889.54
10022.44  889.6310030.86     89010036.96  890.2510044.76  890.5610047.75  891.02
10053.24  890.2510068.32  886.6610071.04  886.2510078.14  885.17 10079.9   884.9
10086.61  885.1710089.11  885.3410093.65  886.87 10096.3  887.5310099.88  888.42
10102.71  889.2110105.52  889.9610111.34  889.78 10118.9  890.3510123.44  890.39
10127.16  890.6110134.28  889.9810141.21  890.0610144.28  889.9810147.44  889.94
10154.28   889.810160.94  890.0910164.29  890.0410170.81  890.0910174.29  889.96
10177.86  889.9410184.29  889.8810190.54  890.1710194.29  890.2710198.14  890.43
10204.29  890.5810210.27  890.7610214.29  890.8210220.14  891.0510224.29  891.35
10228.56  891.4810234.29  891.8210239.87  892.1710244.29  892.3310248.84  892.59
10254.29  892.84 10259.6  892.9510264.29  892.9910269.12  892.95 10274.3  893.22
10279.33  893.01 10284.3  893.0110289.19  893.12 10294.3  893.2610299.54  893.38
 10304.3  893.3810308.93  893.43 10314.3  893.5410319.82  893.65 10324.3  893.79
10328.66   893.9 10334.3  894.3810338.52  894.04 10344.3  894.0910350.24  894.01
 10354.3  894.2210358.25     894 10364.3  893.9110370.52  893.8510374.31  893.88
10377.98  893.5610384.31  893.1110387.85  893.2910390.07  893.29

Manning's n Values         num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9567.65     .05 9990.27    .04810010.62     .0510053.24    .04810105.52     .05
10111.34    .01510141.21     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9990.2710010.62                 0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  891.34  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.03  * Wt. n-Val.              *   0.050  *   0.048  *   0.044  *
* W.S. Elev (ft)          *  891.31  * Reach Len. (ft)         *   91.82  *   91.82  *   91.82  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  374.15  *  118.76  *  408.57  *
* E.G. Slope (ft/ft)      *0.000382  * Area (sq ft)            *  374.15  *  118.76  *  408.57  *
* Q Total (cfs)           * 1083.00  * Flow (cfs)              *  343.98  *  222.83  *  516.19  *
* Top Width (ft)          *  421.41  * Top Width (ft)          *  187.89  *   20.35  *  213.17  *
* Vel Total (ft/s)        *    1.20  * Avg. Vel. (ft/s)        *    0.92  *    1.88  *    1.26  *
* Max Chl Dpth (ft)       *    7.28  * Hydr. Depth (ft)        *    1.99  *    5.84  *    1.92  *
* Conv. Total (cfs)       * 55381.9  * Conv. (cfs)             * 17590.4  * 11394.9  * 26396.6  *
* Length Wtd. (ft)        *   91.82  * Wetted Per. (ft)        *  188.04  *   21.77  *  215.03  *
* Min Ch El (ft)          *  884.03  * Shear (lb/sq ft)        *    0.05  *    0.13  *    0.05  *
* Alpha                   *    1.22  * Stream Power (lb/ft s) *10390.07  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.10  * Cum Volume (acre-ft)    *    0.66  *    0.37  *    0.94  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *          *          *          *
*****************************************************************************************

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach2          RS: 1.705

INPUT
Description: Downstream of Narramore Road
Station Elevation Data     num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9733.79  915.67 9742.91  915.52 9745.19  915.49 9745.86  915.48 9747.08  915.42
 9753.23   915.2  9756.6  915.13 9767.89  915.19    9768  915.19 9775.33  915.14
  9779.4  915.13 9782.69  915.11  9788.7  915.04 9790.06  915.02 9790.81  915.02
 9793.37  915.05 9802.21  915.15 9804.79  915.15  9809.5  915.17 9813.61  915.12
  9818.6   915.2 9825.02  915.16 9830.31  915.27 9834.26  915.33 9836.42  915.32
 9843.82  915.43 9847.82  915.48 9851.12  915.53 9859.23  915.64 9863.72  915.63
 9870.63  915.73 9871.93  915.71 9882.03  915.59 9885.82  915.54 9892.74  915.66
 9893.44  915.65 9905.91  914.62 9912.63  914.17 9919.16  913.42 9921.95  913.07
 9930.28  913.97 9932.08  914.27 9941.07  914.96 9950.45  915.54 9952.12  915.59
 9955.16  915.62 9959.48  915.61 9961.85  915.61 9969.97  915.63 9973.26  915.61
 9974.22  915.62 9976.18  915.43 9991.67   914.1 9992.65  913.73 9996.15   912.4
 9999.37  911.1310003.17  912.1110011.51  914.1210012.65   914.4   10021  914.52
10025.78  914.6310030.27  914.5310038.39  915.1410041.68  915.3310045.66  915.23
10053.08  914.96 10059.2  914.7310064.48   914.610069.98  914.8210075.89  914.91
10080.01  914.9110084.71  915.0310087.29  915.0910092.08  915.3110098.69   915.4
10100.82  915.46 10110.1  915.6310114.18  915.71 10121.5  916.0310121.62  916.03
 10132.9  915.9210136.28  915.9610142.43  915.9810144.31  915.9910146.58     916
10155.71  916.1110163.24     91610167.11  916.0110173.11  916.0210178.51  916.11
10182.72  916.15

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9733.79     .05 9991.67    .04810011.51     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9991.6710011.51           496.74  499.85   502.3             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  915.96  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.41  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  915.55  * Reach Len. (ft)         *  496.74  *  499.85  *  502.30  *
* Crit W.S. (ft)          *  915.55  * Flow Area (sq ft)       *  110.77  *   57.76  *   58.76  *
* E.G. Slope (ft/ft)      *0.012747  * Area (sq ft)            *  110.77  *   57.76  *   58.76  *
* Q Total (cfs)           *  855.00  * Flow (cfs)              *  311.87  *  399.41  *  143.73  *
```

* Top Width (ft)	* 300.38	* Top Width (ft)	* 186.23	* 19.84	* 94.31	*
* Vel Total (ft/s)	* 3.76	* Avg. Vel. (ft/s)	* 2.82	* 6.91	* 2.45	*
* Max Chl Dpth (ft)	* 4.42	* Hydr. Depth (ft)	* 0.59	* 2.91	* 0.62	*
* Conv. Total (cfs)	* 7572.8	* Conv. (cfs)	* 2762.2	* 3537.6	* 1273.0	*
* Length Wtd. (ft)	* 498.03	* Wetted Per. (ft)	* 186.55	* 20.76	* 94.40	*
* Min Ch El (ft)	* 911.13	* Shear (lb/sq ft)	* 0.47	* 2.21	* 0.50	*
* Alpha	* 1.85	* Stream Power (lb/ft s)	*10182.72	* 0.00	* 0.00	*
* Frctn Loss (ft)	* 2.12	* Cum Volume (acre-ft)	* 9.40	* 9.70	* 4.49	*
* C & E Loss (ft)	* 0.04	* Cum SA (acres)	* 6.45	* 2.96	* 4.21	*

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION

RIVER: 1S2WS18B
REACH: J37-Reach2 RS: 1.610

INPUT
Description: Tuthill Road
Station Elevation Data num= 62

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9700	912.67	9705.7	912.95	9710.39	912.87	9717.4	912.95	9722.01	912.92
9728.69	912.89	9733.63	912.83	9737.04	912.8	9742.2	912.58	9745.25	912.47
9756.67	911.85	9756.87	911.85	9757.15	911.84	9768.49	911.59	9776.31	911.55
9779.29	911.58	9780.97	911.58	9789.91	911.48	9800.04	911.49	9803.89	911.49
9805.8	911.47	9810.99	911.54	9819.79	910.77	9836.27	909.12	9838.39	909.11
9840.19	909.09	9851.74	909	9863.13	908.82	9865.66	908.79	9882.28	908.83
9890.44	908.86	9899.57	908.87	9911.25	908.89	9913.38	908.88	9914.88	908.88
9930.37	908.87	9940.43	908.9	9947.79	909.55	9950.09	910.05	9953.31	910.57
9959.92	911.24	9968.15	911.35	9975.06	911.49	9987	910.7	9988.89	910.73
9990.28	910.29	9991.33	909.96	10000.36	907.57	10012.99	911.53	10016.57	912.65
10016.72	912.71	0016.82	912.71	0017.45	912.71	0030.67	912.61	0034.19	912.61
10035.74	912.57	10041.76	912.46	10047.36	912.31	0048.79	912.28	10051.22	912.29
10058.98	912.24	10069.3	912.12						

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
9700	.05	9865.66	.015	9930.37	.05	9975.06	.04	810012.99	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.06	10012.99	512.12	500	494.79	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

* E.G. Elev (ft)	* 910.77	* Element	* Left OB	* Channel	* Right OB *
* Vel Head (ft)	* 0.27	* Wt. n-Val.	* 0.021	* 0.048	* *
* W.S. Elev (ft)	* 910.50	* Reach Len. (ft)	* 512.12	* 500.00	* 494.79 *
* Crit W.S. (ft)	*	* Flow Area (sq ft)	* 188.30	* 29.79	* *
* E.G. Slope (ft/ft)	*0.002099	* Area (sq ft)	* 188.30	* 29.79	* *
* Q Total (cfs)	* 855.00	* Flow (cfs)	* 801.53	* 53.47	* *
* Top Width (ft)	* 150.44	* Top Width (ft)	* 130.36	* 20.08	* *
* Vel Total (ft/s)	* 3.92	* Avg. Vel. (ft/s)	* 4.26	* 1.80	* *
* Max Chl Dpth (ft)	* 2.93	* Hydr. Depth (ft)	* 1.44	* 1.48	* *
* Conv. Total (cfs)	* 18660.8	* Conv. (cfs)	* 17493.7	* 1167.0	* *
* Length Wtd. (ft)	* 505.57	* Wetted Per. (ft)	* 130.55	* 20.92	* *
* Min Ch El (ft)	* 907.57	* Shear (lb/sq ft)	* 0.19	* 0.19	* *
* Alpha	* 1.12	* Stream Power (lb/ft s)	*10069.30	* 0.00	* 0.00 *
* Frctn Loss (ft)	* 1.70	* Cum Volume (acre-ft)	* 7.70	* 9.19	* 4.15 *
* C & E Loss (ft)	* 0.01	* Cum SA (acres)	* 4.65	* 2.73	* 3.66 *

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS18B
REACH: J37-Reach2 RS: 1.515

INPUT
Description:
Station Elevation Data num= 90

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800	908.97	9804.38	909.08	9808.28	909.14	9809.7	909.17	9812.77	909.2
9817.23	909.21	9819.3	909.25	9824.96	909.52	9830.33	909.63	9832.29	909.7
9836.52	909.56	9839.82	909.42	9841.35	909.42	9845.54	909.43	9852.38	909.47
9860.27	909.53	9862.41	909.56	9863.4	909.54	9866.12	909.43	9874.43	909.2
9877.47	909.11	9884.01	908.88	9885.45	908.82	9886.7	908.79	9896.48	908.39
9907.28	908.08	9907.5	908.07	9907.76	908.07	9918.53	908.09	9922.64	908.34
9929.56	908.84	9931.51	908.82	9937.7	908.75	9940.58	908.72	9945.23	908.69
9951.61	908.21	9955.25	907.9	9962.63	907.23	9969.02	907.24	9973.66	906.99
9975.35	907.15	9990.79	905.93	9991.62	905.87	9992.51	905.81	9993.67	905.3
9999.28	903	10007.05	905.19	10007.57	905.33	10015.2	907.58	10025.46	908.3
10027.21	908.42	10028.78	908.54	10035.59	909.06	10039.81	909.28	10050.24	909.56
10050.65	909.56	10050.83	909.55	10058.17	908.91	10061.86	908.68	10071.93	907.82
10072.88	907.73	10073.23	907.69	10073.99	907.68	10083.91	907.52	10092.51	907.82
10094.93	907.89	10097.74	907.96	10103.35	907.98	10105.96	907.97	10113.09	908.06
10116.98	908.09	10121.48	908.18	10128.01	908.44	10133.67	908.59	10139.03	908.76

```
10145.23  908.8410150.06  908.9610154.25  909.0110161.09  909.1610163.59  909.15
10168.98  909.2210171.12  909.2310172.11  909.2610174.83  909.2910183.14  909.43
10186.18  909.4210192.72  909.3710194.16  909.3710195.41  909.37   10200  909.39

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    9800     .05 9951.61    .04810025.46     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9951.6110025.46           498.94     500   500.2             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)         *  909.06  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.23  * Wt. n-Val.             *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         *  908.82  * Reach Len. (ft)        *  498.94  *  500.00  *  500.20  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *   24.44  *  169.05  *   61.63  *
* E.G. Slope (ft/ft)     *0.006233  * Area (sq ft)           *   24.44  *  169.05  *   61.63  *
* Q Total (cfs)          *  855.00  * Flow (cfs)             *   32.66  *  709.01  *  113.32  *
* Top Width (ft)         *  229.16  * Top Width (ft)         *   64.11  *   73.85  *   91.20  *
* Vel Total (ft/s)       *    3.35  * Avg. Vel. (ft/s)       *    1.34  *    4.19  *    1.84  *
* Max Chl Dpth (ft)      *    5.82  * Hydr. Depth (ft)       *    0.38  *    2.29  *    0.68  *
* Conv. Total (cfs)      * 10830.1  * Conv. (cfs)            *   413.7  *  8980.9  *  1435.4  *
* Length Wtd. (ft)       *  500.00  * Wetted Per. (ft)       *   64.17  *   75.19  *   91.28  *
* Min Ch El (ft)         *  903.00  * Shear (lb/sq ft)       *    0.15  *    0.87  *    0.26  *
* Alpha                  *    1.34  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.27  * Cum Volume (acre-ft)   *    6.44  *    8.05  *    3.80  *
* C & E Loss (ft)        *    0.02  * Cum SA (acres)         *    3.51  *    2.19  *    3.15  *
*********************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach2          RS: 1.420

INPUT
Description: Downstream of Telegram Path
Station Elevation Data    num=      67
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9890.28  905.84 9895.42  905.88 9904.48  905.93 9906.04  905.94 9907.14  905.97
 9910.37     906 9916.67  905.92 9922.18  905.84  9927.7  905.68 9929.71  905.61
 9934.02  905.49 9938.74   905.4 9944.76  905.39 9949.77  905.47 9952.28   905.5
 9957.67   905.6 9959.81  905.61 9960.81  905.61 9963.56  905.57 9971.84  905.51
 9977.82  904.93 9988.33  903.55 9989.82  902.97 9993.12   901.7 9995.46  900.68
 9996.63  900.65   10000900.492910004.14   900.310014.47  902.8410015.04  902.98
10017.56   903.610021.19  903.7710035.05  904.4410038.06  904.4410046.32  904.53
10049.09  904.5610052.25  904.5810057.62  904.5810060.13  904.5110065.14  904.32
10071.16  904.21 10075.9  904.37 10082.2  904.5810087.72  904.5410093.23  904.73
10099.55  904.8610104.27  905.0410110.29  905.29 10115.3  905.3710123.19   905.5
10126.34  905.5310129.09  905.5410137.37  905.6510146.84  905.9610147.91     906
10148.41  906.0110149.78  906.0710159.44  906.3810170.47  906.4910170.48  906.49
10170.49  906.4910181.51   906.210185.53   906.210192.55  906.3110193.05  906.32
10194.13  906.32   10200  906.29

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9890.28     .05 9988.33    .04810017.56     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9988.3310017.56           494.34     500  502.48             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)         *  905.77  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.46  * Wt. n-Val.             *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)         *  905.31  * Reach Len. (ft)        *  494.34  *  500.00  *  502.48  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *   12.04  *  109.45  *   77.24  *
* E.G. Slope (ft/ft)     *0.006863  * Area (sq ft)           *   12.04  *  109.45  *   77.24  *
* Q Total (cfs)          *  855.00  * Flow (cfs)             *   26.11  *  662.37  *  166.52  *
* Top Width (ft)         *  137.90  * Top Width (ft)         *   14.46  *   29.23  *   94.21  *
* Vel Total (ft/s)       *    4.30  * Avg. Vel. (ft/s)       *    2.17  *    6.05  *    2.16  *
* Max Chl Dpth (ft)      *    5.01  * Hydr. Depth (ft)       *    0.83  *    3.74  *    0.82  *
* Conv. Total (cfs)      * 10320.7  * Conv. (cfs)            *   315.1  *  7995.5  *  2010.1  *
* Length Wtd. (ft)       *  499.86  * Wetted Per. (ft)       *   14.57  *   30.20  *   94.26  *
* Min Ch El (ft)         *  900.30  * Shear (lb/sq ft)       *    0.35  *    1.55  *    0.35  *
* Alpha                  *    1.59  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    3.65  * Cum Volume (acre-ft)   *    6.24  *    6.46  *    3.00  *
* C & E Loss (ft)        *    0.01  * Cum SA (acres)         *    3.06  *    1.60  *    2.08  *
*********************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach2          RS: 1.326

INPUT
Description:
Station Elevation Data    num=      51
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
    9800   902.5 9802.72  902.51 9804.29  902.48 9806.96  902.47 9814.95   902.5
 9819.66   902.6 9825.62  902.67 9835.75  902.75 9836.14  902.75 9836.28  902.75
 9836.59  902.76 9846.95  902.88  9851.7  902.91 9857.61  902.89 9864.55  902.83
 9868.27   902.8 9875.05  903.04 9878.94  902.92  9887.4  902.56  9889.6  902.52
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 9893.34  902.51 9900.26   902.6 9906.17  902.41 9910.93  902.55 9921.27  901.86
 9921.59  901.85 9921.74  901.84 9922.13  901.83 9929.52  901.66 9932.26  901.67
  9937.3   901.7 9942.92  901.62 9950.92  901.76 9952.86  901.75 9954.42  901.62
 9971.13  899.63 9973.36  899.64 9979.65  899.64 9989.81  897.53 9991.66  897.14
 9993.63  896.64 9996.86  896.8110001.09  897.0810005.51  898.1110011.54  899.54
10017.27   900.910025.55  901.7410030.68  902.19 10037.3  902.5210038.46  902.57
10038.89  902.59

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
    9800     .05 9979.65    .04810011.54     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9979.6510011.54           471.77  478.27  486.23            .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          *  902.10  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.56  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  901.54  * Reach Len. (ft)         *  471.77  *  478.27  *  486.23  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   31.43  *  115.65  *    9.54  *
* E.G. Slope (ft/ft)      *0.007797  * Area (sq ft)            *   31.43  *  115.65  *    9.54  *
* Q Total (cfs)           *  855.00  * Flow (cfs)              *   97.02  *  736.73  *   21.26  *
* Top Width (ft)          *   68.42  * Top Width (ft)           *   24.53  *   31.89  *   12.00  *
* Vel Total (ft/s)        *    5.46  * Avg. Vel. (ft/s)         *    3.09  *    6.37  *    2.23  *
* Max Chl Dpth (ft)       *    4.90  * Hydr. Depth (ft)         *    1.28  *    3.63  *    0.79  *
* Conv. Total (cfs)       *  9682.8  * Conv. (cfs)              *  1098.7  *  8343.4  *   240.7  *
* Length Wtd. (ft)        *  478.30  * Wetted Per. (ft)         *   24.64  *   32.51  *   12.20  *
* Min Ch El (ft)          *  896.64  * Shear (lb/sq ft)         *    0.62  *    1.73  *    0.38  *
* Alpha                   *    1.21  * Stream Power (lb/ft s)   *10038.89  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.97  * Cum Volume (acre-ft)     *    5.99  *    5.16  *    2.50  *
* C & E Loss (ft)         *    0.06  * Cum SA (acres)           *    2.83  *    1.25  *    1.47  *
*********************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach2          RS: 1.235

INPUT
Description:
Station Elevation Data    num=      44
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9911.51  899.37    9918  899.47 9926.62  899.18    9928  899.13 9929.28  899.07
 9938.01  898.59 9947.51  898.44 9948.02  898.42  9948.5   898.4 9958.03  897.89
 9959.88  897.86 9967.71   897.7 9968.04  897.72 9970.22  897.57 9982.82  896.93
 9984.85  896.68  9992.8  894.06 9993.32  893.88 9994.81  893.39 9995.22  893.41
   10000  893.6710003.62  893.86 10005.4  894.2510011.04  895.71 10016.2  897.06
10017.85  897.1510028.09  897.0610034.97  897.66 10038.1  897.6810044.58  897.68
10048.11  897.7310054.19  897.8410058.12  897.95 10063.8  898.2410068.13  898.32
 10073.4  898.6210078.13  898.9910083.01  898.9110088.14  898.9510092.62  899.04
10098.15  898.7810102.23  898.7710108.16  898.9910109.11  898.98

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9911.51     .05 9982.82    .048 10016.2     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9982.82 10016.2           488.09  484.87  477.4             .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          *  899.06  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.35  * Wt. n-Val.              *   0.050  *   0.048  *   0.050  *
* W.S. Elev (ft)          *  898.71  * Reach Len. (ft)         *  488.09  *  484.87  *  477.40  *
* Crit W.S. (ft)          *  898.03  * Flow Area (sq ft)       *   37.59  *  126.60  *   57.42  *
* E.G. Slope (ft/ft)      *0.005075  * Area (sq ft)            *   37.59  *  126.60  *   57.42  *
* Q Total (cfs)           *  855.00  * Flow (cfs)              *   68.51  *  666.31  *  120.18  *
* Top Width (ft)          *  138.76  * Top Width (ft)           *   47.02  *   33.38  *   58.37  *
* Vel Total (ft/s)        *    3.86  * Avg. Vel. (ft/s)         *    1.82  *    5.26  *    2.09  *
* Max Chl Dpth (ft)       *    5.32  * Hydr. Depth (ft)         *    0.80  *    3.79  *    0.98  *
* Conv. Total (cfs)       * 12002.1  * Conv. (cfs)              *   961.7  *  9353.3  *  1687.1  *
* Length Wtd. (ft)        *  484.87  * Wetted Per. (ft)         *   47.06  *   34.34  *   58.42  *
* Min Ch El (ft)          *  893.39  * Shear (lb/sq ft)         *    0.25  *    1.17  *    0.31  *
* Alpha                   *    1.51  * Stream Power (lb/ft s)   *10109.11  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    4.29  * Cum Volume (acre-ft)     *    5.62  *    3.83  *    2.13  *
* C & E Loss (ft)         *    0.05  * Cum SA (acres)           *    2.45  *    0.89  *    1.08  *
*********************************************************************************************

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
          This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach2          RS: 1.143

INPUT
Description:
Station Elevation Data    num=     153
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9523.58  896.02 9525.63  896.02 9531.52  895.97 9537.81  895.89 9539.98  895.85
 9549.99  895.64 9557.49  895.71 9560.25  895.76 9562.18  895.66 9572.88  895.21
 9574.36  895.14    9575  895.13 9586.54  895.02 9588.99  894.97 9592.51  895.02
 9596.17  895.03 9598.72  894.94 9610.02  894.66  9610.9  894.64 9612.91  894.69
```

```
 9623.08  894.87 9624.91  894.76 9627.53   894.6 9635.27  894.11 9639.28   894.2
 9645.05  894.32 9647.45  894.38 9652.94   894.5 9659.63  894.61 9662.56  894.63
 9671.81  894.54 9680.07  894.53 9682.38  894.49 9683.99  894.56 9692.97  894.55
 9696.18  894.59 9696.75  894.57 9697.58  894.61 9708.36  894.96 9711.12  894.99
 9715.09  895.09 9720.54  895.23  9732.6  895.17 9732.72  895.17 9732.99  895.17
  9744.9  895.14 9750.11   895.2 9754.22  895.28 9757.08  895.34 9767.62  895.18
 9768.59  895.16 9769.27  895.16 9775.78  895.26 9781.45  895.24 9785.13  895.29
 9793.63  895.38 9797.33  895.34 9802.64  895.29 9804.51  895.26 9805.81  895.25
 9813.05  895.25 9817.99  895.23 9818.88  895.24 9820.16  895.26 9830.17  895.41
 9837.67  895.34 9840.43  895.27 9842.36  895.28 9853.07  895.48 9854.54   895.5
  9854.8   895.5 9855.18  895.49 9861.98  895.34 9866.72  895.44 9872.69  895.45
  9878.9  895.35  9890.2  895.06 9890.72  895.04 9891.08  895.05  9893.1  895.03
 9903.26  895.03 9907.71  894.69 9917.34  893.62 9923.58  892.89 9924.35   892.8
 9930.62  890.65 9930.78   890.6 9931.25  890.76 9938.06     893 9941.59  893.14
 9947.76  893.44 9955.38  893.86 9960.24  893.97 9964.17  894.06 9969.74   894.3
 9982.62  893.94 9986.66  893.72 9990.49  891.98 9995.28   889.8 9995.69  889.61
 9996.43  889.63   10000889.727510003.39  889.8210011.75  892.2210014.45     893
10018.02  894.0210018.66 894.054 10023.8  894.33 10034.4  894.8810037.26  894.98
10041.59  895.08 10047.8  895.2610049.45   895.310053.21  895.3310061.63  895.45
10063.14  895.4810075.85  895.3110077.57  895.3310080.26  895.3710090.02  895.69
10098.17     89610100.33  895.9810106.24  895.8510110.35  895.8310117.84  895.72
10122.54  895.6510133.26  895.4410134.72  895.4110134.98  895.4110135.35  895.41
 10146.9  895.4910152.86  895.2810156.53   895.210159.08  895.1410170.37   895.4
10171.26   895.410173.29  895.3210183.44  894.8610187.89  894.8710192.45  895.03
10195.63  894.96 10205.4  895.1110207.81  895.1710213.32  895.7710219.99  896.51
10221.54  896.5310235.88  896.6410240.21   896.4 10247.2  896.0810263.96  895.79
10268.72  895.8810275.44  895.9910278.56     896

Manning's n Values         num=       5
     Sta    n Val     Sta    n Val     Sta    n Val     Sta    n Val     Sta    n Val
*****************************************************************************************
 9523.58      .05 9917.34     .048 9947.76      .05 9986.66    .04810018.66      .05

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.    Expan.
       9986.6610018.66            561.31  557.04   553.8              .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  894.72  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.82  * Wt. n-Val.              *   0.048  *   0.048  *         *
* W.S. Elev (ft)          *  893.90  * Reach Len. (ft)         *  561.31  *  557.04  *  553.80  *
* Crit W.S. (ft)          *  893.90  * Flow Area (sq ft)       *   43.34  *   81.22  *         *
* E.G. Slope (ft/ft)      *0.019172  * Area (sq ft)            *   43.34  *   81.22  *         *
* Q Total (cfs)           *  855.00  * Flow (cfs)              *  212.49  *  642.51  *         *
* Top Width (ft)          *   76.22  * Top Width (ft)          *   45.30  *   30.92  *         *
* Vel Total (ft/s)        *    6.86  * Avg. Vel. (ft/s)        *    4.90  *    7.91  *         *
* Max Chl Dpth (ft)       *    4.29  * Hydr. Depth (ft)        *    0.96  *    2.63  *         *
* Conv. Total (cfs)       *  6174.9  * Conv. (cfs)             *  1534.6  *  4640.3  *         *
* Length Wtd. (ft)        *  558.56  * Wetted Per. (ft)        *   46.14  *   32.39  *         *
* Min Ch El (ft)          *  889.61  * Shear (lb/sq ft)        *    1.12  *    3.00  *         *
* Alpha                   *    1.12  * Stream Power (lb/ft s) *10278.56  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.41  * Cum Volume (acre-ft)    *    5.16  *    2.68  *    1.81  *
* C & E Loss (ft)         *    0.24  * Cum SA (acres)          *    1.93  *    0.53  *    0.76  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The program used critical depth
         for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
          This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
         water surface came back below critical depth.  This indicates that there is not a valid subcritical answer.  The program
         defaulted to critical depth.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach2          RS: 1.038

INPUT
Description: Upstream of Carver Road
Station Elevation Data     num=     170
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
 9484.87  895.98 9486.23  896.01 9491.45  895.93 9496.82  895.78 9501.45  895.55
 9505.96  895.49 9511.45  895.37  9517.1  895.39 9521.45  895.27 9525.69   895.2
 9531.45  894.89 9535.56  894.81 9541.45  894.71 9547.52  894.81 9551.45  894.74
 9555.29  894.67 9561.46  894.36  9567.8  894.37 9571.46  894.32 9575.02  894.25
 9581.46  894.02 9584.88     894 9591.46  893.89 9598.22  893.76 9601.46  893.63
 9604.61  893.55 9611.46  893.51  9618.5  893.23 9621.46  893.15 9624.35  893.13
 9631.46  893.01 9634.21  892.99 9641.46  892.98 9648.92  892.94 9651.46  892.91
 9653.94   892.8 9661.46  892.54  9669.2  892.42 9671.47  892.44 9673.67  892.41
 9681.47   892.1 9683.54  892.01 9691.47  891.75 9699.62  891.53 9701.47  891.49
 9703.27   891.5 9711.47  891.41  9719.9  891.31 9721.47  891.29    9723  891.23
 9731.47  891.11 9740.18  890.95 9741.47  890.95 9742.73  890.93 9751.47  890.86
  9752.6  890.86 9761.47  890.61  9770.6  890.47 9771.48  890.44 9772.33  890.42
 9781.48  890.23 9790.88  889.71 9791.48  889.68 9792.06  889.65 9801.48  889.43
 9801.93  889.43 9811.48  889.01  9821.3  888.86 9821.48  888.86 9821.66  888.85
 9831.48   888.4 9834.55  888.34 9841.39  888.22 9841.48  888.22 9841.58  888.22
 9851.48  888.05 9861.12  888.34 9861.48  888.35 9861.86  888.36 9871.48  888.52
 9880.85  888.08 9881.49  888.07 9890.72  887.83 9891.49  887.84 9896.22   887.9
 9905.64  888.09 9907.49  887.59 9908.67  887.08 9908.94  886.97 9916.19   884.1
 9918.46  884.03 9920.27  884.17 9924.46  885.97 9927.84  887.58 9931.97  889.54
 9939.66  889.63 9948.08     890 9954.18  890.25 9961.98  890.56 9964.97  891.02
 9970.46  890.25 9985.54  886.66 9988.26  886.25 9995.36  885.17 9997.12   884.9
   10000884.784110003.83  885.1710006.33  885.3410010.87  886.8710013.52  887.53
 10017.1  888.4210019.93  889.2110022.74  889.9610028.56  889.7810036.12  890.35
10040.66  890.3910044.38  890.61 10051.5  889.9810058.43  890.06 10061.5  889.98
10064.66  889.94 10071.5   889.810078.16  890.0910081.51  890.0410088.03  890.09
10091.51  889.9610095.08  889.9410101.51  889.8810107.76  890.1710111.51  890.27
10115.36  890.4310121.51  890.5810127.49  890.7610131.51  890.8210137.36  891.05
10141.51  891.3510145.78  891.4810151.51  891.8210157.09  892.1710161.51  892.33
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10166.06  892.5910171.51  892.8410176.82  892.9510181.51  892.9910186.34  892.95
10191.52  893.2210196.55  893.0110201.52  893.0110206.41  893.1210211.52  893.26
10216.76  893.3810221.52  893.3810226.15  893.4310231.52  893.5410237.04  893.65
10241.52  893.7910245.88   893.910251.52  894.3810255.74  894.0410261.52  894.09
10267.46  894.0110271.52  894.2210275.47     89410281.52  893.9110287.74  893.85
10291.53  893.88 10295.2  893.5610301.53  893.1110305.07  893.2910307.29  893.29

Manning's n Values          num=       7
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*******************************************************************************
 9484.87     .05 9907.49    .048 9927.84     .05 9970.46    .04810022.74     .05
10028.56    .01510058.43     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.4610022.74                 0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  891.37  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.01  * Wt. n-Val.             *   0.049  *   0.048  *   0.031  *
* W.S. Elev (ft)          *  891.35  * Reach Len. (ft)        *  137.34  *  137.34  *  137.34  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)      *  559.69  *  225.68  *  133.42  *
* E.G. Slope (ft/ft)      *0.000227  * Area (sq ft)           *  559.69  *  225.68  *  133.42  *
* Q Total (cfs)           *  855.00  * Flow (cfs)             *  476.52  *  274.84  *  103.64  *
* Top Width (ft)          *  425.29  * Top Width (ft)         *  254.16  *   52.28  *  118.86  *
* Vel Total (ft/s)        *    0.93  * Avg. Vel. (ft/s)       *    0.85  *    1.22  *    0.78  *
* Max Chl Dpth (ft)       *    7.32  * Hydr. Depth (ft)       *    2.20  *    4.32  *    1.12  *
* Conv. Total (cfs)       * 56735.4  * Conv. (cfs)            * 31620.5  * 18237.5  *  6877.4  *
* Length Wtd. (ft)        *  137.34  * Wetted Per. (ft)       *  256.27  *   53.51  *  118.96  *
* Min Ch El (ft)          *  884.78  * Shear (lb/sq ft)       *    0.03  *    0.06  *    0.02  *
* Alpha                   *    1.10  * Stream Power (lb/ft s) *10307.29  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.12  * Cum Volume (acre-ft)   *    1.28  *    0.71  *    0.97  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)         *          *          *          *
*****************************************************************************************

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach1          RS: 1.012

INPUT
Description: Downstream of Carver Road
Station Elevation Data      num=     127
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9781.58  892.06 9782.17  892.04 9784.95  892.01 9791.86  891.92 9794.96  891.77
 9801.56  891.46 9804.96  891.38 9811.25  891.14 9814.97  890.99 9820.94     891
 9824.97  890.96 9832.19  890.68  9838.4  890.38 9844.63  890.05 9854.29  889.61
 9861.84  889.74 9870.62  889.93    9875  889.96 9879.11  889.86    9885  889.75
  9888.8  889.67 9895.01  889.73 9898.49  889.64 9905.01  889.53 9908.19  889.42
 9915.02  889.19 9917.88  889.16 9925.02  889.09 9927.57  889.02 9935.03  888.95
 9937.27  889.09 9945.03  889.29 9946.96  889.31 9955.04  889.49 9956.65  889.36
 9965.04  888.63 9966.35  888.62 9975.05   888.5 9977.27  888.37 9980.13  888.31
 9984.91  888.14 9986.93  888.07 9988.23  887.22 9991.99   884.1   10000   884.1
10001.35   884.110004.96  884.1410010.54  885.5110012.03  885.8810015.88  886.87
10031.03  887.3510033.02   887.410035.08  887.47 10043.9  887.3710045.08  887.41
10046.35  887.4210055.09  887.7410063.28  887.7810065.09  887.8110067.03  887.86
 10075.1  887.8410077.36  887.8310085.11  888.0910092.36  888.7110095.11  888.91
10098.04   888.810105.12  888.8310111.75  889.5410115.12  889.7310118.71  889.87
10125.13  889.8310131.14  889.7110135.13  889.6910139.39  889.5910145.14  889.51
10149.73  889.5410155.14  889.5710160.22  889.6210165.15  889.74 10170.4  889.76
10175.15  889.8410179.61  889.7410185.16  889.7210191.08  889.7110195.16  889.76
10201.41  889.8910205.17  889.9310208.69  889.9210215.17  889.9910222.09  889.98
10225.18  889.9710228.07   889.910235.18  889.9410242.76  889.9410245.19  889.99
 10253.1  889.9310255.19     89010257.15  889.99 10265.2  889.9310273.78  890.09
 10275.2   890.110276.54   890.110285.21  890.4510294.45  890.4110295.21  890.43
10304.79  890.5710305.22  890.5810305.62  890.5810315.22  890.82 10318.2  890.86
10325.23  890.98 10334.7   890.910335.23  890.8810348.86  890.5110349.15   890.5
 10361.7  890.57 10366.2  890.4910372.96   890.5 10379.6   890.410393.09  890.29
10395.95  890.3910407.25  890.9510421.06  891.5710425.28  891.8710431.64  892.05
10435.29  892.0710440.01   892.2

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9781.58     .065 9988.23    .04110031.03     .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9988.2310031.03           365.25   368.9  376.39             .1       .3
Ineffective Flow      num=       1
   Sta L   Sta R    Elev  Permanent
10313.9210440.01     892        F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  891.22  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.24  * Wt. n-Val.             *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  890.98  * Reach Len. (ft)        *  365.25  *  368.90  *  376.39  *
* Crit W.S. (ft)          *  889.83  * Flow Area (sq ft)      *  250.27  *  227.68  *  445.73  *
* E.G. Slope (ft/ft)      *0.002342  * Area (sq ft)           *  250.27  *  227.68  *  479.43  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)             *  364.77  * 1189.76  *  667.47  *
* Top Width (ft)          *  584.54  * Top Width (ft)         *  165.13  *   42.80  *  376.61  *
* Vel Total (ft/s)        *    2.41  * Avg. Vel. (ft/s)       *    1.46  *    5.23  *    1.50  *
* Max Chl Dpth (ft)       *    6.88  * Hydr. Depth (ft)       *    1.52  *    5.32  *    1.58  *
* Conv. Total (cfs)       * 45916.9  * Conv. (cfs)            *  7537.9  * 24585.9  * 13793.1  *
* Length Wtd. (ft)        *  369.46  * Wetted Per. (ft)       *  165.49  *   44.27  *  283.01  *
* Min Ch El (ft)          *  884.10  * Shear (lb/sq ft)       *    0.22  *    0.75  *    0.23  *
* Alpha                   *    2.70  * Stream Power (lb/ft s) *10440.01  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.05  * Cum Volume (acre-ft)   *   13.14  *   22.01  *    8.34  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)         *    9.46  *    4.58  *    7.37  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
```

Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: 1S2WS18B
REACH: J37-Reach1 RS: 0.942

INPUT
Description:
Station Elevation Data num= 117

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9639.68	893.45	9642.59	893.5	9647.62	893.58	9655.52	893.15	9657.86	892.99
9666.08	892.05	9668.11	891.8	9668.69	891.74	9678.35	891.05	9681.86	890.9
9688.59	890.83	9695.03	890.88	9698.84	890.82	9708.2	890.73	9709.08	890.7
9712.18	890.69	9719.33	890.67	9726.41	890.55	9729.57	890.58	9734.54	890.27
9739.81	890.05	9743.17	889.85	9750.06	889.47	9758.27	889.32	9759.93	889.3
9760.3	889.29	9760.88	889.29	9770.55	889.23	9776.7	889.32	9780.79	889.35
9787.22	889.3	9791.03	889.31	9798.96	889.22	9800.39	889.2	9801.28	889.2
9801.84	889.18	9804.37	889.1	9811.52	888.87	9813.56	888.86	9821.77	888.67
9826.74	888.72	9832.01	888.8	9839.91	889.06	9842.25	889.15	9850.47	889.26
9852.13	889.29	9852.5	889.3	9853.08	889.28	9862.74	889.1	9868.89	889.01
9872.98	888.92	9879.42	888.79	9883.23	888.71	9892.59	888.26	9893.47	888.23
9894.04	888.19	9896.57	888.07	9902.42	887.76	9903.72	887.73	9905.76	887.67
9913.96	887.29	9918.93	887.17	9924.2	887.04	9927.56	887.17	9934.45	887.08
9942.66	886.94	9944.69	886.92	9952.7	887.17	9954.94	887.26	9958.44	887.17
9965.18	887.11	9978.77	886.47	9981.58	886.36	9982.65	886.31	9985.22	885.25
9994.3	881.5	9999.68	881.51	0001.84	881.51	0008.55	881.51	0013.74	883.51
10021.12	886.36	10028.48	888.46	10030.78	888.49	10044.9	889.38	10047.13	889.4
10050.64	889.37	10057.38	889.02	10063.81	889.21	10067.62	889.37	10076.98	889.64
10077.86	889.68	10080.96	889.8	10088.11	890.08	10095.19	890.27	10098.35	890.33
10103.32	890.5	10108.6	890.65	10116.49	890.79	10118.84	890.87	10120.33	890.93
10127.05	890.91	10129.08	890.92	10137.1	891.11	10139.33	891.13	10142.83	891.23
10149.57	891.31	10153.86	891.35	10159.82	891.52	10169.18	891.61	10170.06	891.62
10173.15	891.64	10179	891.63	10180.3	891.62	10182.35	891.59	10190.55	891.47
10195.77	891.47	10198.96	891.51						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9639.68	.065	9981.58	.041	10021.12	.065

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
9981.58 10021.12 468.64 473.57 476.01 .1 .3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	890.13	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.65	Wt. n-Val.	0.065	0.041	0.065
W.S. Elev (ft)	889.49	Reach Len. (ft)	468.64	473.57	476.01
Crit W.S. (ft)	888.20	Flow Area (sq ft)	265.03	252.00	31.28
E.G. Slope (ft/ft)	0.003495	Area (sq ft)	265.03	252.00	31.28
Q Total (cfs)	2222.00	Flow (cfs)	391.52	1799.91	30.57
Top Width (ft)	321.87	Top Width (ft)	231.81	39.54	50.52
Vel Total (ft/s)	4.05	Avg. Vel. (ft/s)	1.48	7.14	0.98
Max Chl Dpth (ft)	7.99	Hydr. Depth (ft)	1.14	6.37	0.62
Conv. Total (cfs)	37586.3	Conv. (cfs)	6622.7	30446.5	517.1
Length Wtd. (ft)	473.11	Wetted Per. (ft)	231.90	41.40	50.86
Min Ch El (ft)	881.50	Shear (lb/sq ft)	0.25	1.33	0.13
Alpha	2.54	Stream Power (lb/ft s)	10198.96	0.00	0.00
Frctn Loss (ft)	2.71	Cum Volume (acre-ft)	10.98	19.98	6.13
C & E Loss (ft)	0.07	Cum SA (acres)	7.79	4.23	5.53

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS18B
REACH: J37-Reach1 RS: 0.852

INPUT
Description:
Station Elevation Data num= 81

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800	886.99	9804.67	886.86	9807.03	886.79	9818.52	886.33	9821.48	886.21
9827.04	886.19	9832.37	886.28	9835.93	886.37	9846.22	886.36	9850.38	886.29
9860.07	886.1	9862.41	886.06	9864.84	885.99	9869.48	885.88	9873.92	885.9
9879.29	885.92	9887.78	885.82	9893.74	885.71	9897.77	885.65	9901.63	885.58
9908.2	885.41	9915.48	885.45	9922.65	885.63	9929.33	885.64	9933.13	885.61
9937.1	885.69	9940.2	885.75	9943.18	885.74	9951.55	885.7	9957.03	885.74
9961.42	885.53	9966.01	885.15	9970.27	884.63	9971.7	884.36	9981.78	883.2
9983.74	882.23	9986.34	880.51	9988.47	879.1	9997.84	879.1	10000	879.1
10002.74	879.11	0007.55	880.79	10011.15	882.07	10018	884.52	10025.01	885.24
10032.25	885.83	10034.76	886.19	10036.47	886.27	10041.25	886.67	10051.48	887.23
10052.43	887.3	10053.37	887.38	10053.98	887.29	10067.18	886.3	10067.51	886.29
10067.83	886.28	10074.59	886.31	10081.63	886.65	10081.66	886.65	10081.68	886.65
10082.94	886.71	10095.54	887.26	10096.08	887.29	10109.39	887.91	10110.54	887.92
10123.24	888.05	10124.09	888.06	10124.99	888.05	10137.09	888.19	10139.44	888.25
10145.31	888.24	10150.94	888.29	10153.89	888.34	10164.79	888.48	10168.35	888.62
10178.64	888.76	10182.8	888.83	10192.49	889.07	10194.82	889.13	10197.25	889.09
10200	889.16								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9800	.065	9966.01	.041	10025.01	.065

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

```
      9966.0110025.01          528.49  524.44  519.19              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          *  887.35  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.32  * Wt. n-Val.              *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  886.03  * Reach Len. (ft)         *  528.49  *  524.44  *  519.19  *
* Crit W.S. (ft)          *  886.01  * Flow Area (sq ft)       *   36.07  *  233.29  *    3.75  *
* E.G. Slope (ft/ft)      *0.011114  * Area (sq ft)            *   36.07  *  233.29  *    3.75  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)              *   43.27  * 2173.57  *    5.16  *
* Top Width (ft)          *  170.31  * Top Width (ft)          *  102.66  *   59.00  *    8.65  *
* Vel Total (ft/s)        *    8.14  * Avg. Vel. (ft/s)        *    1.20  *    9.32  *    1.38  *
* Max Chl Dpth (ft)       *    6.93  * Hydr. Depth (ft)        *    0.35  *    3.95  *    0.43  *
* Conv. Total (cfs)       * 21077.3  * Conv. (cfs)             *   410.5  * 20617.9  *   48.9  *
* Length Wtd. (ft)        *  524.25  * Wetted Per. (ft)        *  102.69  *   61.26  *    8.69  *
* Min Ch El (ft)          *  879.10  * Shear (lb/sq ft)        *    0.24  *    2.64  *    0.30  *
* Alpha                   *    1.28  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    3.19  * Cum Volume (acre-ft)    *    9.36  *   17.34  *    5.94  *
* C & E Loss (ft)         *    0.25  * Cum SA (acres)          *    5.99  *    3.69  *    5.20  *
*********************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach1          RS: 0.753

INPUT
Description: Upstream of Cheyenne Road
Station Elevation Data     num=      64
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9872.85  888.43 9880.72  888.24 9880.98  888.24 9881.24  888.22 9890.99  888.67
 9892.36   888.6  9900.8  888.16 9900.99  888.15 9901.19  888.17 9910.99  888.38
 9911.42  888.32 9920.99  886.93 9930.15  886.24    9931  886.14 9931.89  886.01
    9941  884.67 9949.71  883.25    9951  883.13 9952.35     883    9961  882.29
    9964  881.87  9975.7  880.25 9980.97  878.63 9981.04  878.61 9986.48  876.83
 9992.73  876.85   10000876.794210008.36  876.7310009.95  877.17 10013.9  878.29
10023.39  880.4510028.05  880.7410041.03  881.7610047.53  881.7710051.03  881.77
10054.68  881.7210061.03  881.6910064.92  881.7910071.03  881.9610076.88  881.78
10081.04  881.6410085.38  881.6110091.04  881.4910096.44  881.6710101.04  881.65
10105.85  881.9610111.04  882.2110116.01  882.5810121.05  882.9610126.31  883.22
10131.05  883.36 10133.8  883.3310136.55   883.310141.05   883.410145.35  883.34
10151.05  883.2110157.01     88310161.06  882.8310164.92  882.9110171.06  883.01
10177.48  883.8210181.06  884.1910187.71   884.510189.52  884.63

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9872.85    .065    9964    .04110041.03    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
          996410041.03            460.33  460.28  460.28            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*********************************************************************************************
* E.G. Elev (ft)          *  883.92  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.50  * Wt. n-Val.              *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  883.42  * Reach Len. (ft)         *  460.33  *  460.28  *  460.28  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   11.65  *  337.52  *  139.44  *
* E.G. Slope (ft/ft)      *0.003823  * Area (sq ft)            *   11.65  *  337.52  *  139.44  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)              *   13.65  * 2005.37  *  202.98  *
* Top Width (ft)          *  225.70  * Top Width (ft)          *   15.36  *   77.03  *  133.31  *
* Vel Total (ft/s)        *    4.55  * Avg. Vel. (ft/s)        *    1.17  *    5.94  *    1.46  *
* Max Chl Dpth (ft)       *    6.69  * Hydr. Depth (ft)        *    0.76  *    4.38  *    1.05  *
* Conv. Total (cfs)       * 35936.2  * Conv. (cfs)             *   220.7  * 32432.7  *  3282.9  *
* Length Wtd. (ft)        *  460.28  * Wetted Per. (ft)        *   15.44  *   78.18  *  133.42  *
* Min Ch El (ft)          *  876.73  * Shear (lb/sq ft)        *    0.18  *    1.03  *    0.25  *
* Alpha                   *    1.55  * Stream Power (lb/ft s) *10189.52  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.25  * Cum Volume (acre-ft)    *    9.07  *   13.90  *    5.09  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *    5.28  *    2.87  *    4.36  *
*********************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach1          RS: 0.666

INPUT
Description: Downstream of Cheyenne Road
Station Elevation Data     num=     163
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9468.98  884.46 9471.05  884.46 9474.15  884.65 9477.24  884.69 9484.15  884.82
 9487.24  884.78 9494.15  884.65 9501.05  884.58 9504.15  884.36 9507.24  884.24
 9514.15  883.83 9521.05  883.52 9524.15  883.36 9527.24  883.37 9534.15  883.39
 9537.24  883.55 9544.15  883.56 9551.05  883.61 9554.15  883.52 9557.24  883.44
 9564.15  883.39 9571.05  883.43 9574.15   883.5 9577.24  883.43 9584.15  883.74
 9591.05  884.24 9594.15   884.4 9597.24  884.41 9604.15  884.41 9607.24   884.3
 9614.15  884.05 9621.05  883.23 9624.15     883 9627.24  882.93 9634.15  882.63
 9641.05  882.63 9644.15  882.66 9647.24  882.59 9654.15  882.48 9657.24  882.43
 9664.15   882.3 9671.05  882.12 9674.15  882.07 9677.24  882.11 9684.15  882.06
 9691.05  882.11 9694.15  882.02 9697.24  882.08 9704.15  882.09 9707.24  881.98
 9714.15  882.27 9721.05  881.73 9724.15  881.87 9727.24  881.57 9734.15  881.61
 9741.05  881.42 9744.15  881.47 9747.24  881.35 9754.15  881.31 9757.24  881.41
 9764.15  881.08 9771.05  881.35 9774.15  881.27 9777.24  881.42 9784.15  881.54
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 9791.05  881.53 9794.15   881.7 9797.24  881.79 9804.15  882.01 9807.24  882.18
 9814.15  882.38 9821.05  882.91 9824.15  882.88 9827.24  882.36 9834.15  881.66
 9841.05  880.38 9844.15  879.96 9847.24  879.74 9854.15  879.48 9861.05  879.37
 9864.15  879.35 9867.24  879.33 9874.15  879.29 9877.24  879.48 9884.15  879.34
 9891.05  879.52 9894.15  879.52 9897.24  879.74 9904.15  880.15 9911.05  880.48
 9914.15  880.62 9917.24  880.61 9924.15  880.86 9927.24  880.98 9934.15  881.09
 9941.05  881.68 9944.15  881.72 9947.24  881.75 9947.25  881.75 9954.15  881.53
 9961.05  881.17 9964.15  881.11 9973.69  879.85 9975.54  879.57 9977.43  878.78
 9985.43  875.14 9988.98  875.18   10000  875.2510002.78  875.2710009.44  876.77
10014.15  878.3510021.05   879.310024.15  879.2210027.24  879.1810034.15  879.14
10041.05  879.3110044.15  879.2910047.24  879.3110054.15  879.0310061.05  878.76
10064.15  878.6510067.24  878.6310074.15   878.810077.24  879.0110084.15  879.18
10091.05  879.5610094.15  879.4610097.24  879.5910104.15  879.6910111.05  879.88
10114.15  879.9110117.24  880.0410124.15  879.9510127.24  880.0610134.15  880.16
10141.05   880.110144.15  880.0610147.24  880.0610154.15  880.1410161.05   880.4
10164.15  880.5110167.24  880.6210174.15  880.7210181.05  880.7110184.15   880.8
10187.24  880.8510194.15  881.0510197.24  880.9310198.46  880.9410204.15  880.94
10211.05   881.110214.15  881.1910217.24  881.2910224.15  881.2310231.05  881.39
10234.15  881.3710237.24  881.4510244.15  881.6610247.24  881.7510254.15  882.09
10261.05   882.710264.15  882.9610266.41  883.05

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9468.98    .065 9975.54    .04110021.05    .065

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9975.5410021.05            512.14  515.28  517.75              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  881.66  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.65  * Wt. n-Val.              *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  881.01  * Reach Len. (ft)         *  512.14  *  515.28  *  517.75  *
* Crit W.S. (ft)          *  880.77  * Flow Area (sq ft)       *  110.00  *  200.93  *  218.32  *
* E.G. Slope (ft/ft)      *0.006439  * Area (sq ft)            *  110.00  *  200.93  *  218.32  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)              *  213.77  * 1540.33  *  467.90  *
* Top Width (ft)          *  330.86  * Top Width (ft)          *  101.91  *   45.51  *  183.44  *
* Vel Total (ft/s)        *    4.20  * Avg. Vel. (ft/s)        *    1.94  *    7.67  *    2.14  *
* Max Chl Dpth (ft)       *    5.87  * Hydr. Depth (ft)        *    1.08  *    4.42  *    1.19  *
* Conv. Total (cfs)       * 27690.3  * Conv. (cfs)             *  2663.9  * 19195.4  *  5831.0  *
* Length Wtd. (ft)        *  514.90  * Wetted Per. (ft)        *  102.15  *   46.95  *  183.51  *
* Min Ch El (ft)          *  875.14  * Shear (lb/sq ft)        *    0.43  *    1.72  *    0.48  *
* Alpha                   *    2.39  * Stream Power (lb/ft s) *10266.41  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.02  * Cum Volume (acre-ft)    *    8.43  *   11.06  *    3.20  *
* C & E Loss (ft)         *    0.12  * Cum SA (acres)          *    4.66  *    2.23  *    2.68  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach1          RS: 0.568

INPUT
Description:
Station Elevation Data     num=      94
     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*******************************************************************************
 9785.91      880 9787.31  879.94 9796.06  879.54 9798.34   879.4 9802.22  879.32
 9807.66  879.33 9815.39  879.33 9819.25  879.41 9821.97   879.3 9827.56  878.98
 9830.85  878.64 9834.87  878.09 9841.73  877.45 9842.18  877.43 9842.44  877.39
 9843.46  877.33 9854.04  876.78 9856.79  876.67 9861.48  876.62 9865.63  876.58
 9871.53  876.65 9877.23  876.72 9881.23   876.7 9886.02  876.67 9888.82  876.57
 9899.61  876.72 9900.42  876.74 9900.99  876.72 9912.01  876.32 9920.74  875.95
 9922.55  875.85 9923.61  875.92 9927.68  876.12 9935.21   876.5 9937.16  876.52
  9940.5  876.46  9946.8  876.31 9951.78  876.45  9958.4  876.39 9960.25  876.47
 9969.99  876.64 9979.24  875.91 9984.56  875.58 9984.87  875.48  9986.7  874.89
 9992.01  873.19   10000  873.0610002.96  873.0110006.75   872.910013.62   874.5
10016.24  875.1110017.54  875.3610019.52  875.5710024.84  876.4210027.97  876.81
10032.15   877.210039.27  877.3410039.46  877.3410039.56  877.3310039.98  877.34
10051.16  877.6710059.03   877.910062.75  877.9910068.05  878.1510074.35  878.28
10078.78  878.5710081.84  878.7410083.68  878.8810085.39  879.0210087.44   879.2
10095.43  879.6910098.46  879.9510105.47  880.6510111.34  881.0310115.51  881.25
10120.49  881.8110125.55  882.2510129.79  882.6910135.59  882.9410142.52  883.26
10145.63  883.3110153.54  882.8410155.67  882.7310157.45  882.5810165.71  881.95
10175.57  882.1410175.75  882.13 10175.9  882.1410177.58   882.210185.79  882.54
10194.34  882.9710195.83  882.97 10197.6   882.9 10199.9  883.04

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9785.91    .065 9969.99    .04110027.97    .065

Bank Sta: Left   Right     Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9969.9910027.97            495.47  500.41  507.04              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  879.52  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.26  * Wt. n-Val.              *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  879.26  * Reach Len. (ft)         *  495.47  *  500.41  *  507.04  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  364.40  *  262.12  *   81.08  *
* E.G. Slope (ft/ft)      *0.002643  * Area (sq ft)            *  364.40  *  262.12  *   81.08  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)              *  782.89  * 1323.25  *  115.86  *
* Top Width (ft)          *  265.67  * Top Width (ft)          *  147.28  *   57.98  *   60.41  *
* Vel Total (ft/s)        *    3.14  * Avg. Vel. (ft/s)        *    2.15  *    5.05  *    1.43  *
* Max Chl Dpth (ft)       *    6.36  * Hydr. Depth (ft)        *    2.47  *    4.52  *    1.34  *
* Conv. Total (cfs)       * 43218.5  * Conv. (cfs)             * 15227.4  * 25737.5  *  2253.6  *
* Length Wtd. (ft)        *  499.40  * Wetted Per. (ft)        *  147.45  *   58.78  *   60.48  *
```

```
* Min Ch El (ft)          *  872.90  * Shear (lb/sq ft)        *    0.41  *    0.74  *    0.22  *
* Alpha                   *    1.71  * Stream Power (lb/ft s) *10199.90  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.05  * Cum Volume (acre-ft)    *    5.64  *    8.32  *    1.42  *
* C & E Loss (ft)         *    0.00  * Cum SA (acres)          *    3.19  *    1.61  *    1.23  *
*****************************************************************************************************

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach1          RS: 0.473

INPUT
Description: XS #4 Upstream of Elliot Road Culvert
Station Elevation Data     num=       86
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9756.63  880.11 9761.92  879.83 9767.84  879.63 9771.56  879.46 9774.24  879.31
 9784.96  878.53 9785.89  878.46 9786.56  878.43 9790.66  878.26 9798.88  877.92
 9800.22  877.87 9802.08  877.95  9811.2  877.93 9819.21  877.83 9823.52  877.75
 9834.57  877.46 9835.84  877.42 9836.33  877.41 9848.15  876.95 9853.45  876.71
 9857.54  876.58 9860.47  876.49  9864.7  876.58 9870.57  876.41 9872.79   876.4
 9878.48  876.36 9885.11  876.24  9887.7  876.18 9893.36  875.93 9897.43  875.94
 9904.82  875.76 9909.75  875.63 9921.94  875.79 9922.07  875.79 9929.18  875.65
 9934.39  875.69 9939.07  875.84 9946.71  875.86 9950.67  875.44 9956.19  874.84
 9959.03  874.54 9966.31  874.26 9971.35  874.06 9972.17  874.03 9983.97  873.03
 9986.14   872.8 9988.96  872.07 9990.01  871.79 9994.55  870.56  9999.6   870.6
10006.34  870.5410015.22   872.210017.83  872.6910022.32   873.810024.68  874.36
10032.94  875.6910036.65  876.46 10041.8  877.8110045.26  879.2310054.13  880.03
10057.58  880.5210058.93  880.4810065.31  880.48 10069.9  880.1910076.05  880.06
10076.57  880.0410081.39  879.9210084.19  879.7410091.91  879.1710099.78     879
10102.42  878.9110107.91  878.6910112.94   878.610119.64  879.0410123.46  879.18
10127.57  879.3110133.97  879.4310140.24   879.6   10144  879.7110145.58  879.74
10155.06  880.1810161.36  879.8810169.67  880.11 10173.9  880.0410176.76  880.23
10179.14  880.31

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9756.63    .065 9946.71    .04110032.94    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9946.7110032.94            114.61     114  107.45             .3       .5

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  878.47  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.26  * Wt. n-Val.              *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  878.21  * Reach Len. (ft)         *  114.61  *  114.00  *  107.45  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  240.10  *  434.58  *   13.68  *
* E.G. Slope (ft/ft)      *0.001712  * Area (sq ft)            *  240.10  *  434.58  *   13.68  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)              *  304.14  * 1902.10  *   15.76  *
* Top Width (ft)          *  250.98  * Top Width (ft)          *  154.91  *   86.23  *    9.84  *
* Vel Total (ft/s)        *    3.23  * Avg. Vel. (ft/s)        *    1.27  *    4.38  *    1.15  *
* Max Chl Dpth (ft)       *    7.67  * Hydr. Depth (ft)        *    1.55  *    5.04  *    1.39  *
* Conv. Total (cfs)       * 53695.2  * Conv. (cfs)             *  7349.5  * 45964.8  *   380.9  *
* Length Wtd. (ft)        *  114.10  * Wetted Per. (ft)        *  154.96  *   87.17  *   10.17  *
* Min Ch El (ft)          *  870.54  * Shear (lb/sq ft)        *    0.17  *    0.53  *    0.14  *
* Alpha                   *    1.60  * Stream Power (lb/ft s) *10179.14  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    0.21  * Cum Volume (acre-ft)    *    2.20  *    4.32  *    0.87  *
* C & E Loss (ft)         *    0.01  * Cum SA (acres)          *    1.47  *    0.78  *    0.83  *
*****************************************************************************************************

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach1          RS: 0.452

INPUT
Description: XS #3 Upstream of Elliot Road Culvert
Station Elevation Data     num=       91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9719.71  879.88 9729.43  879.46 9730.53  879.41 9731.63  879.31 9743.56  878.41
 9745.78  878.27 9757.69  877.51 9758.81  877.46 9759.94  877.39 9771.82  876.52
 9774.09  876.45 9780.03  876.43 9785.95  876.24 9788.25   876.2 9800.08  875.95
 9801.24  875.89  9802.4  875.84 9814.21  875.47 9816.55  875.48 9828.34   875.6
 9829.52  875.57 9830.71  875.56 9842.47  875.46 9844.86  875.45 9850.74  875.43
  9856.6  875.16 9859.02  875.06 9870.73  875.35 9871.95  875.43 9873.17  875.47
 9884.86  875.69 9887.33  875.64 9898.99  875.47 9900.23   875.5 9901.48  875.42
 9913.12  875.31 9915.64  875.26 9921.45   874.6 9927.25  874.63 9929.79  874.69
 9937.05  875.25  9942.8  875.63  9943.8  875.66 9949.11   875.3 9956.67  875.54
 9966.05  874.21 9966.92  874.19 9967.55  874.19 9968.62  874.12 9973.36  874.48
 9981.12  873.09 9986.64  873.19 9991.35  871.83 9997.39   870.1 9997.51   870.1
   10000   870.110002.76   870.110003.65   870.110008.82  870.5110009.75  870.54
   10017  871.7510017.52  871.9110020.87  872.9210027.17  873.1210031.79  874.16
10042.24  878.7110050.95  878.7810055.24  879.9110066.11  880.0310070.28  880.32
 10074.4  879.9610085.58  880.0910089.58  879.1810093.52  879.1210105.01  879.35
10108.83  879.2910119.12  879.3910122.71  879.5410126.25   879.410136.87  879.52
10140.21  879.47 10143.5  879.2510154.45  879.3910157.49  879.36   10169  879.52
10171.81  879.5210174.59  879.5310186.89  879.6910189.42  879.7610191.92  879.79
   10200   879.9

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9719.71    .065 9973.36    .04110031.79    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9973.3610031.79             83.72    84.3   84.41             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
```

```
 9719.71 9981.27  875.59        T
10016.25   10200  875.59        T

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  878.25  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.23  * Wt. n-Val.              *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  878.02  * Reach Len. (ft)         *   83.72  *   84.30  *   84.41  *
* Crit W.S. (ft)          *  876.72  * Flow Area (sq ft)       *  482.94  *  293.04  *   14.73  *
* E.G. Slope (ft/ft)      *0.002002  * Area (sq ft)            *  535.01  *  348.14  *   17.07  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)              *  824.76  * 1377.28  *   19.95  *
* Top Width (ft)          *  290.89  * Top Width (ft)          *  223.60  *   58.43  *    8.86  *
* Vel Total (ft/s)        *    2.81  * Avg. Vel. (ft/s)        *    1.71  *    4.70  *    1.36  *
* Max Chl Dpth (ft)       *    7.92  * Hydr. Depth (ft)        *    2.16  *    5.02  *    1.66  *
* Conv. Total (cfs)       * 49655.8  * Conv. (cfs)             * 18431.3  * 30778.7  *   445.9  *
* Length Wtd. (ft)        *   84.30  * Wetted Per. (ft)        *  223.89  *   59.40  *    9.66  *
* Min Ch El (ft)          *  870.10  * Shear (lb/sq ft)        *    0.27  *    0.62  *    0.19  *
* Alpha                   *    1.87  * Stream Power (lb/ft s) *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *          * Cum Volume (acre-ft)    *    1.18  *    3.29  *    0.83  *
* C & E Loss (ft)         *          * Cum SA (acres)          *    0.98  *    0.60  *    0.80  *
*****************************************************************************************

CULVERT


RIVER: 1S2WS18B
REACH: J37-Reach1          RS: 0.444

INPUT
Description: Elliot Road Culverts
Distance from Upstream XS =       27
Deck/Roadway Width        =       35
Weir Coefficient          =      2.6
Upstream  Deck/Roadway Coordinates
    num=      54
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
*****************************************************************************
    9695  873.97          9695.51  873.98          9713.45  873.98
 9714.47  873.97          9732.51  874.07          9733.52  874.07
 9751.58  874.07          9752.56  874.07          9753.67  874.07
 9771.48  874.17          9772.42  874.17          9790.43  874.37
 9791.21  874.37          9809.51  874.57          9810.14  874.57
 9828.52  874.77          9828.99  874.78          9847.65  874.88
 9847.97  874.88           9866.7  875.09          9866.85  875.09
 9885.76   875.3          9885.77   875.3          9902.95  876.35
 9932.68  876.69          9962.49  877.14             9995   877.6
   10000877.6702         10025.65  878.03          10057.3  878.58
   10089  879.03         10102.09   878.2         10103.96  878.23
10120.19  878.32         10120.72  878.32         10122.58  878.36
10139.41  878.53          10140.8  878.55         10158.02  878.73
10159.18  878.74         10175.05  878.93         10176.22  878.94
 10192.2  879.13         10193.26  879.14         10194.32  879.15
10210.35  879.34         10211.31  879.35         10227.43  879.53
 10228.3  879.54         10244.52  879.73         10245.29  879.74
 10261.6  879.93         10262.39  879.94          10266.8  879.96

Upstream Bridge Cross Section Data
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9719.71  879.88 9729.43  879.46 9730.53  879.41 9731.63  879.31 9743.56  878.41
 9745.78  878.27 9757.69  877.51 9758.81  877.46 9759.94  877.39 9771.82  876.52
 9774.09  876.45 9780.03  876.43 9785.95  876.24 9788.25   876.2 9800.08  875.95
 9801.24  875.89  9802.4  875.84 9814.21  875.47 9816.55  875.48 9828.34   875.6
 9829.52  875.57 9830.71  875.56 9842.47  875.46 9844.86  875.45 9850.74  875.43
  9856.6  875.16 9859.02  875.06 9870.73  875.35 9871.95  875.43 9873.17  875.47
 9884.86  875.69 9887.33  875.64 9898.99  875.47 9900.23   875.5 9901.48  875.42
 9913.12  875.31 9915.64  875.26 9921.45   874.6 9927.25  874.63 9929.79  874.69
 9937.05  875.25  9942.8  875.63  9943.8  875.66 9949.11   875.3 9956.67  875.54
 9966.05  874.21 9966.92  874.19 9967.55  874.19 9968.62  874.12 9973.36  874.48
 9981.12  868.79 9986.64  868.79 9991.35  868.79 9997.39  868.79 9997.51  868.79
   10000  868.7910002.76  868.7910003.65  868.7910008.82  868.7910009.75  868.79
   10017  868.7910017.52  871.9110020.87  872.9210027.17  873.1210031.79  874.16
10042.24  878.7110050.95  878.7810055.24  879.9110066.11  880.0310070.28  880.32
 10074.4  879.9610085.58  880.0910089.58  879.1810093.52  879.1210105.01  879.35
10108.83  879.2910119.12  879.3910122.71  879.5410126.25   879.410136.87  879.52
10140.21  879.47 10143.5  879.2510154.45  879.3910157.49  879.36   10169  879.52
10171.81  879.5210174.59  879.5310186.89  879.6910189.42  879.7610191.92  879.79
   10200   879.9

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9719.71    .065 9973.36    .04110031.79    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9973.3610031.79            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9719.71 9981.27  875.59        T
10016.25   10200  875.59        T

Downstream  Deck/Roadway Coordinates
    num=      54
     Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord      Sta Hi Cord Lo Cord
*****************************************************************************
    9695  873.97          9695.51  873.98          9713.45  873.98
 9714.47  873.97          9732.51  874.07          9733.52  874.07
 9751.58  874.07          9752.56  874.07          9753.67  874.07
 9771.48  874.17          9772.42  874.17          9790.43  874.37
 9791.21  874.37          9809.51  874.57          9810.14  874.57
 9828.52  874.77          9828.99  874.78          9847.65  874.88
 9847.97  874.88           9866.7  875.09          9866.85  875.09
 9885.76   875.3          9885.77   875.3          9902.95  876.35
 9932.68  876.69          9962.49  877.14             9995   877.6
   10000877.6702         10025.65  878.03          10057.3  878.58
```

```
   10089  879.03        10102.09   878.2        10103.96  878.23
10120.19  878.32        10120.72  878.32        10122.58  878.36
10139.41  878.53         10140.8  878.55        10158.02  878.73
10159.18  878.74        10175.05  878.93        10176.22  878.94
 10192.2  879.13        10193.26  879.14        10194.32  879.15
10210.35  879.34        10211.31  879.35        10227.43  879.53
 10228.3  879.54        10244.52  879.73        10245.29  879.74
 10261.6  879.93        10262.39  879.94         10266.8  879.96

Downstream Bridge Cross Section Data
Station Elevation Data    num=     101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9766.11  876.83 9766.64  876.81 9771.01  876.73 9773.74  876.62 9777.08  876.35
 9780.85  876.03 9783.93   875.8 9787.96  875.53 9792.89  875.37 9795.06  875.31
 9796.84  875.25 9802.17  875.13 9808.69  874.98 9809.75  874.96 9821.48   874.4
 9834.78  874.09 9840.25  873.34 9846.22  872.22 9849.57  872.66 9850.55  872.86
 9853.47  872.93 9860.84  872.67 9864.67  872.76 9876.49  872.68 9880.25  872.76
 9884.22  872.86 9895.77  872.78 9899.85  872.88  9908.7  873.22 9914.27  873.36
 9921.41  873.59 9928.11  873.76 9933.04  873.83 9940.06     874 9940.09     874
 9944.48  874.08 9952.79  874.24 9958.04   873.6 9965.54  873.73 9967.38  873.47
 9971.57  873.07 9978.36  873.18 9981.55  868.79 9986.42  868.25 9986.54  868.25
 9989.43     868 9999.01     868   10000  868.7910001.08  868.7910008.23  868.79
10011.19  868.7910015.14  872.31 10015.9  873.12 10017.3  874.5610017.42  874.68
10031.83   874.8 10033.2  875.2610034.42  875.5810036.99  875.5410039.22  874.97
10041.21  874.65 10050.4  875.0610052.11  874.6710053.44  875.0810063.99  875.58
10065.54  876.0310066.65  876.3510067.43  876.3810068.36  876.3610078.97  876.33
10079.98  876.1910081.54  876.1810091.29  876.1510092.65  876.1210093.74  876.08
10095.78   875.910097.58  875.9910109.65  875.9110113.71  876.1810119.58  876.14
10124.32  876.2410128.99  876.2210134.62  876.0110136.53     87610139.75  876.09
10140.92  876.2410146.14  876.81 10147.5  876.8210154.44  877.2410160.42  877.45
10163.25  877.5310169.53  877.3410171.93   877.210173.72  877.2410174.79  877.25
10179.77  877.3210184.31  877.48 10189.4  877.4710194.37  877.4310197.11  877.45
   10200  877.57

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9766.11    .065 9952.79    .041 10017.3    .065

Bank Sta: Left   Right    Coeff Contr.   Expan.
       9952.79 10017.3            .3        .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9766.11 9983.75     874        T
10012.23   10200     874        T

Upstream Embankment side slope              =       0 horiz. to 1.0 vertical
Downstream Embankment side slope            =       0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow =     .98
Elevation at which weir flow begins         =
Energy head used in spillway design         =
Spillway height used in design              =
Weir crest shape                            = Broad Crested

Number of Culverts =  3

Culvert Name     Shape      Rise    Span
54" CMP         Circular     4.5
FHWA Chart # 2 - Corrugated Metal Pipe Culvert
FHWA Scale # 3 - Pipe projecting from fill
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                1.75      81     .027     .027        0                  .9                 1
Upstream   Elevation =  868.79
           Centerline Station =  9983.5
Downstream Elevation =  868.35
           Centerline Station =  9986

Culvert Name     Shape      Rise    Span
60" CMP         Circular       5
FHWA Chart # 2 - Corrugated Metal Pipe Culvert
FHWA Scale # 3 - Pipe projecting from fill
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                2.9    80.1     .027     .027        0                  .9                 1
Upstream   Elevation =  868.96
           Centerline Station =  9993
Downstream Elevation =  868.15
           Centerline Station =  9993

Culvert Name     Shape      Rise    Span
2-54" RCP       Circular     4.5
FHWA Chart # 1 - Concrete Pipe Culvert
FHWA Scale # 3 - Groove end entrance; pipe projecting from fill
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist  Length    Top n  Bottom n  Depth Blocked  Entrance Loss Coef   Exit Loss Coef
                1.7    82.5     .013     .013        0                  .7                 1
Number of Barrels =  2
Upstream   Elevation =  869.14
Centerline Stations
    Sta.    Sta.
   10004   10014
Downstream Elevation =  868.95
Centerline Stations
    Sta.    Sta.
   10003   10010

CULVERT OUTPUT  Profile #100-Year  Culv Group:  54" CMP
*********************************************************************
* Q Culv Group (cfs)     *  100.55  * Culv Full Len (ft)     *   81.00  *
* # Barrels              *       1  * Culv Vel US (ft/s)     *    6.32  *
* Q Barrel (cfs)         *  100.55  * Culv Vel DS (ft/s)     *    6.32  *
* E.G. US. (ft)          *  878.25  * Culv Inv El Up (ft)    *  868.79  *
* W.S. US. (ft)          *  878.02  * Culv Inv El Dn (ft)    *  868.35  *
* E.G. DS (ft)           *  876.47  * Culv Frctn Ls (ft)     *    0.90  *
```

```
* W.S. DS (ft)            *  876.17  * Culv Exit Loss (ft)    *    0.31  *
* Delta EG (ft)           *    1.77  * Culv Entr Loss (ft)    *    0.56  *
* Delta WS (ft)           *    1.85  * Q Weir (cfs)           * 1736.82  *
* E.G. IC (ft)            *  873.80  * Weir Sta Lft (ft)      * 9746.49  *
* E.G. OC (ft)            *  878.26  * Weir Sta Rgt (ft)      *10036.87  *
* Culvert Control         *  Outlet  * Weir Submerg           *    0.13  *
* Culv WS Inlet (ft)      *  873.29  * Weir Max Depth (ft)    *    2.64  *
* Culv WS Outlet (ft)     *  872.85  * Weir Avg Depth (ft)    *    1.62  *
* Culv Nml Depth (ft)     *          * Weir Flow Area (sq ft) *  471.85  *
* Culv Crt Depth (ft)     *    2.95  * Min El Weir Flow (ft)  *  875.60  *
*****************************************************************************

CULVERT OUTPUT  Profile #100-Year  Culv Group:  60" CMP
*****************************************************************************
* Q Culv Group (cfs)      *  128.05  * Culv Full Len (ft)     *   80.10  *
* # Barrels               *       1  * Culv Vel US (ft/s)     *    6.52  *
* Q Barrel (cfs)          *  128.05  * Culv Vel DS (ft/s)     *    6.52  *
* E.G. US. (ft)           *  878.25  * Culv Inv El Up (ft)    *  868.96  *
* W.S. US. (ft)           *  878.02  * Culv Inv El Dn (ft)    *  868.15  *
* E.G. DS (ft)            *  876.47  * Culv Frctn Ls (ft)     *    0.82  *
* W.S. DS (ft)            *  876.17  * Culv Exit Loss (ft)    *    0.35  *
* Delta EG (ft)           *    1.77  * Culv Entr Loss (ft)    *    0.59  *
* Delta WS (ft)           *    1.85  * Q Weir (cfs)           * 1736.82  *
* E.G. IC (ft)            *  874.43  * Weir Sta Lft (ft)      * 9746.49  *
* E.G. OC (ft)            *  878.26  * Weir Sta Rgt (ft)      *10036.87  *
* Culvert Control         *  Outlet  * Weir Submerg           *    0.13  *
* Culv WS Inlet (ft)      *  873.96  * Weir Max Depth (ft)    *    2.64  *
* Culv WS Outlet (ft)     *  873.15  * Weir Avg Depth (ft)    *    1.62  *
* Culv Nml Depth (ft)     *          * Weir Flow Area (sq ft) *  471.85  *
* Culv Crt Depth (ft)     *    3.24  * Min El Weir Flow (ft)  *  875.60  *
*****************************************************************************

CULVERT OUTPUT  Profile #100-Year  Culv Group:  2-54" RCP
*****************************************************************************
* Q Culv Group (cfs)      *  256.57  * Culv Full Len (ft)     *   82.50  *
* # Barrels               *       2  * Culv Vel US (ft/s)     *    8.07  *
* Q Barrel (cfs)          *  128.29  * Culv Vel DS (ft/s)     *    8.07  *
* E.G. US. (ft)           *  878.25  * Culv Inv El Up (ft)    *  869.14  *
* W.S. US. (ft)           *  878.02  * Culv Inv El Dn (ft)    *  868.95  *
* E.G. DS (ft)            *  876.47  * Culv Frctn Ls (ft)     *    0.36  *
* W.S. DS (ft)            *  876.17  * Culv Exit Loss (ft)    *    0.70  *
* Delta EG (ft)           *    1.77  * Culv Entr Loss (ft)    *    0.71  *
* Delta WS (ft)           *    1.85  * Q Weir (cfs)           * 1736.82  *
* E.G. IC (ft)            *  874.33  * Weir Sta Lft (ft)      * 9746.49  *
* E.G. OC (ft)            *  878.24  * Weir Sta Rgt (ft)      *10036.87  *
* Culvert Control         *  Outlet  * Weir Submerg           *    0.13  *
* Culv WS Inlet (ft)      *  873.64  * Weir Max Depth (ft)    *    2.64  *
* Culv WS Outlet (ft)     *  873.45  * Weir Avg Depth (ft)    *    1.62  *
* Culv Nml Depth (ft)     *          * Weir Flow Area (sq ft) *  471.85  *
* Culv Crt Depth (ft)     *    3.33  * Min El Weir Flow (ft)  *  875.60  *
*****************************************************************************

CROSS SECTION


RIVER: 1S2WS18B
REACH: J37-Reach1          RS: 0.436

INPUT
Description: XS #2 Downstream of Elliot Road Culvert
Station Elevation Data     num=      101
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9766.11  876.83 9766.64  876.81 9771.01  876.73 9773.74  876.62 9777.08  876.35
 9780.85  876.03 9783.93   875.8 9787.96  875.53 9792.89  875.37 9795.06  875.31
 9796.84  875.25 9802.17  875.13 9808.69  874.98 9809.75  874.96 9821.48   874.4
 9834.78  874.09 9840.25  873.34 9846.22  872.22 9849.57  872.66 9850.55  872.86
 9853.47  872.93 9860.84  872.67 9864.67  872.76 9876.49  872.68 9880.25  872.76
 9884.22  872.86 9895.77  872.78 9899.85  872.88  9908.7  873.22 9914.27  873.36
 9921.41  873.59 9928.11  873.76 9933.04  873.83 9940.06     874 9940.09     874
 9944.48  874.08 9952.79  874.24 9958.04   873.6 9965.54  873.73 9967.38  873.47
 9971.57  873.07 9978.36  873.18 9981.55  868.79 9986.42  868.25 9986.54  868.25
 9989.43      868 9999.01     868   10000 868.7910001.08 868.7910008.23  868.79
10011.19  868.7910015.14  872.31 10015.9  873.12 10017.3  874.5610017.42  874.68
10031.83   874.8 10033.2  875.2610034.42  875.5810036.99  875.5410039.22  874.97
10041.21  874.65 10050.4  875.0610052.11  874.6710053.44  875.0810063.99  875.58
10065.54  876.0310066.65  876.3510067.43  876.3810068.36  876.3610078.97  876.33
10079.98  876.1910081.54  876.1810091.29  876.1510092.65  876.1210093.74  876.08
10095.78   875.910097.58  875.9910109.65  875.9110113.71  876.1810119.58  876.14
10124.32  876.2410128.99  876.2210134.62  876.0110136.53     87610139.75  876.09
10140.92  876.2410146.14  876.81 10147.5  876.8210154.44  877.2410160.42  877.45
10163.25  877.5310169.53  877.3410171.93   877.210173.72  877.2410174.79  877.25
10179.77  877.3210184.31  877.48 10189.4  877.4710194.37  877.4310197.11  877.45
   10200  877.57

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9766.11    .065 9952.79   .041 10017.3    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9952.79 10017.3           193.92  198.97  205.79             .3       .5
Ineffective Flow     num=       2
   Sta L   Sta R    Elev  Permanent
 9766.11 9983.75     874       T
10012.23   10200     874       T

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  876.47  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.31  * Wt. n-Val.              *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  876.17  * Reach Len. (ft)         *  193.92  *  198.97  *  205.79  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  320.65  *  297.87  *   60.05  *
* E.G. Slope (ft/ft)      *0.002951  * Area (sq ft)            *  415.92  *  342.56  *   60.05  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)              *  598.87  * 1548.08  *   75.06  *
* Top Width (ft)          *  329.38  * Top Width (ft)          *  173.55  *   64.51  *   91.33  *
```

* Vel Total (ft/s)	*	3.27	* Avg. Vel. (ft/s)	*	1.87	*	5.20	*	1.25	*
* Max Chl Dpth (ft)	*	8.17	* Hydr. Depth (ft)	*	1.85	*	4.62	*	0.66	*
* Conv. Total (cfs)	*	40906.1	* Conv. (cfs)	*	11024.9	*	28499.4	*	1381.8	*
* Length Wtd. (ft)	*	198.80	* Wetted Per. (ft)	*	173.83	*	69.44	*	91.83	*
* Min Ch El (ft)	*	868.00	* Shear (lb/sq ft)	*	0.34	*	0.79	*	0.12	*
* Alpha	*	1.85	* Stream Power (lb/ft s)	*	10200.00	*	0.00	*	0.00	*
* Frctn Loss (ft)	*	0.96	* Cum Volume (acre-ft)	*	1.18	*	2.26	*	0.83	*
* C & E Loss (ft)	*	0.24	* Cum SA (acres)	*	0.59	*	0.48	*	0.71	*

Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS18B
REACH: J37-Reach1 RS: 0.398

INPUT
Description: XS #1 Downstream of Elliot Road Culvert
Station Elevation Data num= 96

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9800	874.75	9806.1	874.87	9807.72	875.04	9820.39	875.8	9821.89	875.81
9828.21	875.47	9834.5	875.65	9835.28	875.67	9836.05	875.66	9842.35	875.66
9848.62	875.82	9850.22	875.88	9862.74	876.35	9864.39	876.42	9876.85	876.87
9878.56	876.89	9884.78	876.79	9890.97	877.08	9892.72	877.08	9905.09	876.88
9906.89	876.87	9919.21	876.84	9921.06	876.91	9927.2	877.1	9933.32	877.09
9934.27	877.07	9935.22	877.06	9941.34	877	9947.44	877	9949.39	876.98
9961.56	876.55	9963.56	876.32	9969.63	875.1	9981.45	872.31	9986.12	871.3
9989.67	869.62	9993.71	867.57	10000	867.72	10002.42	867.78	10006.28	867.87
10009.74	868.88	10015.05	870.44	10018.51	870.96	10026.2	871.95	10032.15	872.74
10033.27	872.85	10034.39	872.92	10040.34	872.82	10046.26	872.82	10048.56	872.69
10050.22	872.64	10057.42	872.29	10058.58	872.28	10067.42	872.22	10068.58	872.26
10077.42	872.57	10078.58	872.63	10087.42	872.93	10088.58	873.03	10097.42	873.55
10098.58	873.76	10107.42	875.01	10108.58	875.1	10117.42	875.69	10118.58	875.64
10127.42	875.72	10128.58	875.73	10137.42	876.26	10138.58	876.34	10147.42	876.64
10148.58	876.65	10157.42	877.15	10158.58	877.16	10167.42	877.79	10168.58	877.82
10177.42	877.84	10178.58	877.95	10187.42	878.52	10188.58	878.52	10197.42	878.35
10198.58	878.31	10207.42	877.98	10208.58	877.95	10217.42	877.81	10218.58	877.76
10227.42	877.35	10228.58	877.35	10237.42	877.14	10238.58	877.19	10247.42	877.29
10248.58	877.31	10257.42	877.48	10258.58	877.54	10267.42	877.91	10268.58	878.03
10277.02	878.65								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9800	.065	9981.45	.041	10032.15	.065

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9981.45	10032.15	202.48	186.61	170.74	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

* E.G. Elev (ft)	*	875.27	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (ft)	*	1.11	* Wt. n-Val.	*	0.065	*	0.041	*	0.065	*
* W.S. Elev (ft)	*	874.17	* Reach Len. (ft)	*	202.48	*	186.61	*	170.74	*
* Crit W.S. (ft)	*	873.96	* Flow Area (sq ft)	*	7.29	*	215.33	*	97.81	*
* E.G. Slope (ft/ft)	*	0.009302	* Area (sq ft)	*	7.29	*	215.33	*	97.81	*
* Q Total (cfs)	*	2222.00	* Flow (cfs)	*	15.03	*	1935.91	*	271.07	*
* Top Width (ft)	*	127.86	* Top Width (ft)	*	7.86	*	50.70	*	69.30	*
* Vel Total (ft/s)	*	6.93	* Avg. Vel. (ft/s)	*	2.06	*	8.99	*	2.77	*
* Max Chl Dpth (ft)	*	6.60	* Hydr. Depth (ft)	*	0.93	*	4.25	*	1.41	*
* Conv. Total (cfs)	*	23038.3	* Conv. (cfs)	*	155.8	*	20072.0	*	2810.5	*
* Length Wtd. (ft)	*	185.38	* Wetted Per. (ft)	*	8.08	*	52.20	*	69.40	*
* Min Ch El (ft)	*	867.57	* Shear (lb/sq ft)	*	0.52	*	2.40	*	0.82	*
* Alpha	*	1.48	* Stream Power (lb/ft s)	*	10277.02	*	0.00	*	0.00	*
* Frctn Loss (ft)	*	1.21	* Cum Volume (acre-ft)	*	0.24	*	0.99	*	0.46	*
* C & E Loss (ft)	*	0.13	* Cum SA (acres)	*	0.19	*	0.21	*	0.33	*

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS18B
REACH: J37-Reach1 RS: 0.363

INPUT
Description: 1920 Feet upstream of confluence with Gila River
Station Elevation Data num= 65

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9900	873.81	9906.82	873.3	9909.93	872.94	9916.74	872.5	9919.93	872.59
9926.66	872.39	9929.93	872.06	9936.59	872.11	9939.93	872.06	9946.51	872.15
9949.93	872.08	9956.43	872.35	9959.93	872.2	9966.35	871.06	9969.93	870.91
9974.28	870.88	9981.06	870.65	9984.72	868.76	9984.87	868.68	9988.25	867
9993.37	867.02	9997.65	867.08	10000	867.11	10002.56	867.15	10009.88	867.46
10011.69	867.79	10018.05	868.97	10018.75	869.11	10020.19	869.36	10029.93	870.89
10035.81	871.51	10039.93	871.72	10045.73	871.47	10049.93	871.56	10055.65	871.35
10059.93	871.48	10065.58	871.51	10069.93	871.75	10075.5	871.91	10079.93	871.86
10085.42	871.67	10089.93	871.51	10095.34	871.78	10099.93	872.1	10105.27	872.4
10109.93	872.63	10115.19	872.62	10119.93	872.61	10125.11	873.13	10129.93	873.48
10135.03	873.86	10139.93	874.16	10144.96	875.17	10149.94	876.29	10154.88	876.49
10159.94	876.9	10164.8	876.64	10169.94	876.15	10174.72	875.72	10179.94	875.16
10184.64	874.99	10189.94	874.69	10194.57	874.63	10199.94	874.72	10200	874.72

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
**************************************************
    9900    .065 9981.06    .04110029.93    .065

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9981.0610029.93                 0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  873.94  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.66  * Wt. n-Val.              *   0.065  *   0.041  *   0.065  *
* W.S. Elev (ft)          *  873.27  * Reach Len. (ft)         *          *          *          *
* Crit W.S. (ft)          *  872.73  * Flow Area (sq ft)       *   95.08  *  245.42  *  134.79  *
* E.G. Slope (ft/ft)      *0.004801  * Area (sq ft)            *   95.08  *  245.42  *  134.79  *
* Q Total (cfs)           * 2222.00  * Flow (cfs)              *  177.73  * 1778.88  *  265.40  *
* Top Width (ft)          *  219.97  * Top Width (ft)          *   73.99  *   48.87  *   97.12  *
* Vel Total (ft/s)        *    4.68  * Avg. Vel. (ft/s)        *    1.87  *    7.25  *    1.97  *
* Max Chl Dpth (ft)       *    6.27  * Hydr. Depth (ft)        *    1.29  *    5.02  *    1.39  *
* Conv. Total (cfs)       * 32068.7  * Conv. (cfs)             *  2565.0  * 25673.4  *  3830.3  *
* Length Wtd. (ft)        *          * Wetted Per. (ft)        *   74.16  *   50.04  *   97.25  *
* Min Ch El (ft)          *  867.00  * Shear (lb/sq ft)        *    0.38  *    1.47  *    0.42  *
* Alpha                   *    1.96  * Stream Power (lb/ft s)  *10200.00  *    0.00  *    0.00  *
* Frctn Loss (ft)         *          * Cum Volume (acre-ft)    *          *          *          *
* C & E Loss (ft)         *          * Cum SA (acres)          *          *          *          *
*****************************************************************************************************

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

SUMMARY OF MANNING'S N VALUES

River:1S2WS18A
*****************************************************************************************************
*     Reach       *   River Sta.    *   n1    *   n2    *   n3    *   n4    *   n5    *   n6    *   n7    *
*****************************************************************************************************
*J27             *    1.231        *     .05*     .015*     .05*     .048*     .05*         *         *
*J27             *    1.166        *     .05*     .048*     .05*         *         *         *         *
*J27             *    1.042        *     .05*     .048*     .05*         *         *         *         *
*J27             *    0.947        *     .05*     .048*     .05*         *         *         *         *
*J27             *    0.852        *     .05*     .048*     .05*         *         *         *         *
*J27             *    0.758        *    .015*      .05*    .048*      .05*         *         *         *
*J27             *    0.693        *     .05*     .015*     .05*     .048*     .05*         *         *
*J27             *    0.524        *     .05*     .048*     .05*         *         *         *         *
*J27             *    0.460        *     .05*     .048*     .05*         *         *         *         *
*J27             *    0.390        *     .05*     .015*     .05*     .048*     .05*         *         *
*J27             *    0.284        *     .05*     .048*     .05*     .015*     .05*         *         *
*J27             *    0.189        *     .05*     .048*     .05*         *         *         *         *
*J27             *    0.104        *     .05*     .048*     .05*         *         *         *         *
*J27             *    0.011        *     .05*     .048*     .05*     .048*     .05*     .015*      .05*
*****************************************************************************************************

River:1S2WS18B
*****************************************************************************************************
*     Reach       *   River Sta.    *   n1    *   n2    *   n3    *   n4    *   n5    *   n6    *   n7    *
*****************************************************************************************************
*J37-Reach2      *    1.705        *     .05*     .048*     .05*         *         *         *         *
*J37-Reach2      *    1.610        *     .05*     .015*     .05*     .048*     .05*         *         *
*J37-Reach2      *    1.515        *     .05*     .048*     .05*         *         *         *         *
*J37-Reach2      *    1.420        *     .05*     .048*     .05*         *         *         *         *
*J37-Reach2      *    1.326        *     .05*     .048*     .05*         *         *         *         *
*J37-Reach2      *    1.235        *     .05*     .048*     .05*         *         *         *         *
*J37-Reach2      *    1.143        *     .05*     .048*     .05*     .048*     .05*         *         *
*J37-Reach2      *    1.038        *     .05*     .048*     .05*     .048*     .05*     .015*      .05*
*J37-Reach1      *    1.012        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.942        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.852        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.753        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.666        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.568        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.473        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.452        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.444        *Culvert  *        *        *        *        *        *        *
*J37-Reach1      *    0.436        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.398        *    .065*     .041*    .065*         *         *         *         *
*J37-Reach1      *    0.363        *    .065*     .041*    .065*         *         *         *         *
*****************************************************************************************************

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

SUMMARY OF REACH LENGTHS

River: 1S2WS18A
*****************************************************************
*     Reach       *   River Sta.    *  Left   * Channel *  Right  *
*****************************************************************
*J27             *    1.231        *  345.89*  341.61*  333.05*
*J27             *    1.166        *  647.91*  658.35*  661.34*
*J27             *    1.042        *  509.76*     500*   488.5*
*J27             *    0.947        *  500.29*     500*  494.63*
*J27             *    0.852        *  500.43*     500*  497.76*
*J27             *    0.758        *     339*   339.2*  339.24*
*J27             *    0.693        *   915.4*  892.49*  870.75*
*J27             *    0.524        *  341.28*  341.52*  341.89*
*J27             *    0.460        *  370.36*  370.24*  370.01*
*J27             *    0.390        *  559.98*  556.56*  549.62*
*J27             *    0.284        *  491.83*     500*  512.46*
*J27             *    0.189        *   453.7*  451.57*  442.29*
*J27             *    0.104        *  487.26*  488.91*  497.03*
*J27             *    0.011        *       0*       0*       0*
*****************************************************************

River: 1S2WS18B
*****************************************************************
*     Reach       *   River Sta.    *  Left   * Channel *  Right  *
*****************************************************************
*J37-Reach2      *    1.705        *  496.74*  499.85*   502.3*
*J37-Reach2      *    1.610        *  512.12*     500*  494.79*
*J37-Reach2      *    1.515        *  498.94*     500*   500.2*
```

```
*J37-Reach2      *    1.420       *   494.34*      500*   502.48*
*J37-Reach2      *    1.326       *   471.77*   478.27*   486.23*
*J37-Reach2      *    1.235       *   488.09*   484.87*    477.4*
*J37-Reach2      *    1.143       *   561.31*   557.04*    553.8*
*J37-Reach2      *    1.038       *        0*        0*        0*
*J37-Reach1      *    1.012       *   365.25*    368.9*   376.39*
*J37-Reach1      *    0.942       *   468.64*   473.57*   476.01*
*J37-Reach1      *    0.852       *   528.49*   524.44*   519.19*
*J37-Reach1      *    0.753       *   460.33*   460.28*   460.28*
*J37-Reach1      *    0.666       *   512.14*   515.28*   517.75*
*J37-Reach1      *    0.568       *   495.47*   500.41*   507.04*
*J37-Reach1      *    0.473       *   114.61*      114*   107.45*
*J37-Reach1      *    0.452       *    83.72*     84.3*    84.41*
*J37-Reach1      *    0.444       *Culvert  *        *         *
*J37-Reach1      *    0.436       *   193.92*   198.97*   205.79*
*J37-Reach1      *    0.398       *   202.48*   186.61*   170.74*
*J37-Reach1      *    0.363       *        0*        0*        0*
*****************************************************************

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

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: 1S2WS18A

*******************************************************
*     Reach       *   River Sta.    * Contr.  * Expan.  *
*******************************************************
*J27              *    1.231   *       .1*       .3*
*J27              *    1.166   *       .1*       .3*
*J27              *    1.042   *       .1*       .3*
*J27              *    0.947   *       .1*       .3*
*J27              *    0.852   *       .1*       .3*
*J27              *    0.758   *       .1*       .3*
*J27              *    0.693   *       .1*       .3*
*J27              *    0.524   *       .1*       .3*
*J27              *    0.460   *       .1*       .3*
*J27              *    0.390   *       .1*       .3*
*J27              *    0.284   *       .1*       .3*
*J27              *    0.189   *       .1*       .3*
*J27              *    0.104   *       .1*       .3*
*J27              *    0.011   *       .1*       .3*
*******************************************************
River: 1S2WS18B

*******************************************************
*     Reach       *   River Sta.    * Contr.  * Expan.  *
*******************************************************
*J37-Reach2       *    1.705   *       .1*       .3*
*J37-Reach2       *    1.610   *       .1*       .3*
*J37-Reach2       *    1.515   *       .1*       .3*
*J37-Reach2       *    1.420   *       .1*       .3*
*J37-Reach2       *    1.326   *       .1*       .3*
*J37-Reach2       *    1.235   *       .1*       .3*
*J37-Reach2       *    1.143   *       .1*       .3*
*J37-Reach2       *    1.038   *       .1*       .3*
*J37-Reach1       *    1.012   *       .1*       .3*
*J37-Reach1       *    0.942   *       .1*       .3*
*J37-Reach1       *    0.852   *       .1*       .3*
*J37-Reach1       *    0.753   *       .1*       .3*
*J37-Reach1       *    0.666   *       .1*       .3*
*J37-Reach1       *    0.568   *       .1*       .3*
*J37-Reach1       *    0.473   *       .3*       .5*
*J37-Reach1       *    0.452   *       .3*       .5*
*J37-Reach1       *    0.444   *Culvert  *        *
*J37-Reach1       *    0.436   *       .3*       .5*
*J37-Reach1       *    0.398   *       .1*       .3*
*J37-Reach1       *    0.363   *       .1*       .3*
*******************************************************
```

HEC-RAS Plan: 1S2WS31B (I7 River: 1S2WS31B Reach: I70

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
I70	0.000	1888.00	966.40	971.33	971.24	971.79	0.006434	6.84	496.35	412.93	0.69
I70	0.000	1888.00	966.40	971.58	971.58	973.01	0.012202	9.92	209.21	74.76	0.97
I70	0.130	1888.00	966.80	974.22	972.78	974.81	0.003110	6.49	409.53	270.13	0.52
I70	0.130	1888.00	966.80	975.21		975.64	0.001747	5.50	395.09	89.48	0.40
I70	0.205	2290.00	970.40	976.90	976.90	977.63	0.004810	8.01	530.75	378.84	0.64
I70	0.205	2290.00	970.40	976.95	976.95	978.62	0.008391	10.64	251.70	94.45	0.85
I70	0.284	2290.00	972.20	978.82	978.12	979.21	0.002945	6.49	675.19	490.17	0.51
I70	0.284	2290.00	972.20	979.81	978.09	980.15	0.001776	5.67	592.17	148.76	0.40
I70	0.379	2290.00	974.73	980.57		980.95	0.004189	6.79	641.21	375.05	0.58
I70	0.379	2290.00	974.73	980.99		981.86	0.006732	8.86	379.56	142.82	0.72
I70	0.455	2290.00	975.84	982.21	981.83	982.72	0.004428	7.39	591.69	426.06	0.61
I70	0.455	2290.00	975.84	983.20	981.90	983.83	0.003649	7.31	408.44	94.97	0.55
I70	0.568	2290.00	977.90	985.04	985.04	985.77	0.004677	8.39	547.80	377.65	0.64
I70	0.568	2290.00	977.90	985.57		986.87	0.006387	9.86	289.50	74.76	0.71
I70	0.663	2290.00	979.80	986.92		987.22	0.001879	5.39	767.30	387.51	0.41
I70	0.663	2290.00	979.80	987.91		988.20	0.001297	5.01	627.96	151.02	0.35
I70	0.804	2290.00	982.92	988.82	988.08	989.61	0.005634	7.22	358.16	181.54	0.67
I70	0.804	2290.00	982.92	989.24		989.94	0.004369	6.70	341.78	85.28	0.59
I70	0.936	2290.00	986.50	992.24		992.56	0.003206	5.47	612.45	362.95	0.48
I70	0.936	2290.00	986.50	992.64		993.41	0.005654	7.49	364.78	119.00	0.63
I70	1.012	2290.00	988.59	994.25	994.25	994.91	0.006289	7.78	519.47	383.41	0.71
I70	1.012	2290.00	988.59	994.89		996.20	0.007730	9.37	260.27	66.42	0.79
I70	1.136	2290.00	991.22	997.02		997.35	0.002394	4.88	680.94	549.51	0.44
I70	1.136	2290.00	991.22	997.97		998.28	0.001589	4.48	510.89	108.33	0.36

HEC-RAS Plan: 1S2WS31B (I7 River: 1S2WS31B Reach: I70 (Continued)

Reach	River Sta	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
		(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
I70	1.218	2290.00	992.48	998.60	998.60	999.04	0.004096	6.67	559.26	481.86	0.58
I70	1.218	2290.00	992.48	998.69	998.69	1000.28	0.009956	10.53	250.43	80.51	0.91

```
                    HEC-RAS Version 4.1.0 Jan 2010
                     U.S. Army Corps of Engineers
                    Hydrologic Engineering Center
                          609 Second Street
                          Davis, California

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

****

PROJECT DATA
Project Title: 1S2WS31B (I70)
Project File : 1S2WS31B(I70).prj
Run Date and Time: 8/6/2012 5:50:44 PM

Project in English units

Project Description:
Rainbow Valley ADMP Areas 1, 2, 3, and 4 Floodplain Delineation Study

1S2WS31B (I70).prj
Plan01: 1S2WS31B (I70)

Contract FCD 2011C003
Assignment 3
This model is not for public release until final approval
provided by FEMA

Consultant: RBF Consulting
2929 North Central Avenue
#800
Phoenix, AZ 85012
RBF Job number: 45104771

This is a re-delineation
of 1S2WS31B (I70) within the Rainbow Valley Study Area 4 using updated methods
and data, including hydrology from Rainbow Valley Area Drainage Master Plan
(ADMP) dated Octover 2010 by URS in cooperation with Dibble Engineering and JE
Fuller Hydrology and Geomorphology, Inc.

Model Geometry based upon 2'
contour interval mapping

Vertical Datum in NAVD88

Aerial mapping provided
by the Flood Control District of Maricopa County for Rainbow Valley Mapping,
Contract No. FCD 03-67, Flight Date March 30, 2005.

HEC-RAS Version
4.1.0
1S2WS31B(I70) is tributary to Waterman Wash

Last Run Date August 6,
2012

River 100-Yr Discharge Rate
HEC-1 Concentration Point ID
1S2WS31B(I70) 2,290
cfs CPI66

Downstream tie-in condition,
using Rainbow Valley ADMP Wash T1SR2WS32A (I63), known water surface elevation
corresponding to River Station 1.59, 100-year water surface elevation of 971.33
ft (NAVD88) and floodway water surface elevation of 971.45 ft (NAVD88) with
effective discharge of 1,888 cfs.

****

PLAN DATA

Plan Title: 1S2WS31B (I70)
Plan File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31B(I70).p01

Geometry Title: 1S2WS31B (I70)
Geometry File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31B(I70).g01

Flow Title : 1S2WS31B(I70)
Flow File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31B(I70).f01

Plan Summary Information:
Number of: Cross Sections = 13 Multiple Openings = 0
Culverts = 0 Inline Structures = 0
Bridges = 0 Lateral Structures = 0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculation tolerance = 0.01
Maximum number of iterations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: At breaks in n values only

```
    Friction Slope Method:          Average Conveyance
    Computational Flow Regime:      Subcritical Flow

Encroachment Data
   Equal Conveyance = True
   Left Offset      =        0
   Right Offset     =        0

River = 1S2WS31B          Reach = I70
RS      Profile            Method  Value1  Value2
1.218   FW                      1 9976.1110056.62
1.136   FW                      1 9921.5610029.89
1.012   FW                      1 9975.9310042.35
0.936   FW                      1 9919.6110038.61
0.804   FW                      1 9947.8610033.14
0.663   FW                      1 9939.7510090.77
0.568   FW                      1 9944.3610019.12
0.455   FW                      1 9928.63 10023.6
0.379   FW                      1 9880.1210022.94
0.284   FW                      1 9929.7210078.48
0.205   FW                      1 9925.5710021.52
0.130   FW                      1 9944.12 10033.6
0.000   FW                      1 9962.4910037.25


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

FLOW DATA

Flow Title: 1S2WS31B(I70)
Flow File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31B(I70).f01

Flow Data (cfs)
*************************************************************************
* River            Reach            RS       *        100-Year            FW *
* 1S2WS31B         I70              1.218    *            2290          2290 *
* 1S2WS31B         I70              0.130    *            1888          1888 *
*************************************************************************

Boundary Conditions
*****************************************************************************************************************
* River            Reach            Profile          *            Upstream                  Downstream    *
*****************************************************************************************************************
* 1S2WS31B         I70              100-Year         *                                Known WS = 971.33 *
* 1S2WS31B         I70              FW               *                                Known WS = 971.45 *
*****************************************************************************************************************


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

GEOMETRY DATA

Geometry Title: 1S2WS31B (I70)
Geometry File : h:\PDATA\45104771\Calcs\HEC-RAS\1S2WS31B(I70).g01

CROSS SECTION


RIVER: 1S2WS31B
REACH: I70                RS: 1.218

INPUT
Description: Cross-Section crosses Rainbow Valley Road
Station Elevation Data     num=     148
    Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev     Sta     Elev
*************************************************************************************
 9746.51 1002.19 9746.72 1002.19  9753.7 1001.86 9756.73 1001.77 9763.35 1001.82
 9766.74 1001.84 9770.38 1001.78 9776.74 1001.64 9780.76 1001.58 9786.75 1001.54
 9792.32  1001.6 9796.76 1001.69 9801.98 1001.73 9806.76 1001.44 9811.91 1001.41
 9816.77 1001.25 9822.29 1001.19 9826.78 1001.22 9832.68 1001.34 9836.78 1001.18
  9840.6 1001.11 9846.79 1000.85 9850.26 1000.78  9856.8 1000.55 9863.83 1000.77
  9866.8 1000.71 9874.21 1000.22 9876.81 1000.15 9884.59 1000.04 9886.82  999.89
 9888.88  999.83 9896.82  999.65 9898.54  999.59 9906.83   999.3 9915.74  998.89
 9916.84  998.91 9925.74  998.57 9926.11  998.55 9926.84  998.49 9927.57  998.46
 9936.84  997.81 9937.57  997.79 9946.84  997.58 9947.57  997.58 9956.84  997.55
 9966.11  997.11 9966.84  997.11 9976.11  996.96 9976.84  996.95 9977.57   996.8
 9986.84   995.3 9988.82  994.88 9990.87  994.43 9999.69  992.4810002.29  992.55
10005.44  992.6610016.19     99510016.84  995.1310023.84  996.6810026.11  997.19
10026.84  997.3310027.57  997.3710036.84  997.1510037.57  997.1210046.84     997
10056.11  996.9710056.84  996.9610066.11  996.7810066.84  996.7710076.11   996.8
10076.84  996.8110077.57  996.8410086.84  997.3110087.57  997.3310096.84  997.52
10106.11  997.6110106.84  997.6110116.11  997.9510116.84  997.9810126.11  998.16
10126.84  998.1610127.57  998.1510136.84  998.0510137.57  998.0710146.84  998.11
10156.11  998.1110156.84  998.1210166.11  998.2110166.84  998.2110167.57   998.2
10176.84  998.4810177.57  998.4710186.84   998.110187.57  998.1110196.84  998.01
10206.11  998.0110206.84  998.0110216.11  998.0110216.84     99810217.57     998
10226.84  998.0110227.57  998.0210236.84  998.0810246.11  998.1310246.84  998.12
10256.11  997.8410256.84  997.8410266.11  997.7410266.84  997.7610267.57  997.74
10276.73  997.8710276.85  997.8710278.48  997.96 10287.9  998.35 10291.3  998.34
10298.55  998.1310298.95  998.1210299.29  998.1210309.99  998.1510320.11  998.04
10321.04  998.0410322.09  998.0910328.89   998.510332.09   998.610340.93  998.24
10343.13  998.1510343.93  998.1310346.78  997.9410361.74   996.910370.62     997
10388.66  997.2710396.14  997.8710404.07  998.4210409.41  998.7710411.59   998.9
10416.24  998.8610420.46  998.8110424.19  998.8710431.51     99910439.77  998.97
10441.66  998.9910442.55  999.0510445.01  999.29 10453.6  999.92 10456.7 1000.05
10463.31 1000.0710464.65 1000.0910465.76 1000.19

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************************************************
 9746.51     .05 9977.57    .03610023.84     .0510343.93    .01510396.14     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
        9976.1110023.84           431.85  429.81  421.37             .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev  Permanent
10332.0910465.76   998.6        F
```

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	999.04	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.44	Wt. n-Val.	0.050	0.036	0.030
W.S. Elev (ft)	998.60	Reach Len. (ft)	431.85	429.81	421.37
Crit W.S. (ft)	998.60	Flow Area (sq ft)	51.26	193.66	314.34
E.G. Slope (ft/ft)	0.004096	Area (sq ft)	51.26	193.66	314.34
Q Total (cfs)	2290.00	Flow (cfs)	97.59	1291.34	901.07
Top Width (ft)	481.86	Top Width (ft)	51.16	47.73	382.98
Vel Total (ft/s)	4.09	Avg. Vel. (ft/s)	1.90	6.67	2.87
Max Chl Dpth (ft)	6.12	Hydr. Depth (ft)	1.00	4.06	0.82
Conv. Total (cfs)	35780.0	Conv. (cfs)	1524.7	20176.5	14078.7
Length Wtd. (ft)	427.71	Wetted Per. (ft)	51.20	48.61	383.23
Min Ch El (ft)	992.48	Shear (lb/sq ft)	0.26	1.02	0.21
Alpha	1.70	Stream Power (lb/ft s)	10465.76	0.00	0.00
Frctn Loss (ft)	1.32	Cum Volume (acre-ft)	28.12	34.48	21.63
C & E Loss (ft)	0.04	Cum SA (acres)	21.46	8.19	26.09

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

CROSS SECTION OUTPUT Profile #FW

E.G. Elev (ft)	1000.28	Element	Left OB	Channel	Right OB
Vel Head (ft)	1.59	Wt. n-Val.		0.036	0.050
W.S. Elev (ft)	998.69	Reach Len. (ft)	431.85	429.81	421.37
Crit W.S. (ft)	998.69	Flow Area (sq ft)		198.12	52.31
E.G. Slope (ft/ft)	0.009956	Area (sq ft)		198.12	52.31
Q Total (cfs)	2290.00	Flow (cfs)		2085.65	204.35
Top Width (ft)	80.51	Top Width (ft)		47.73	32.78
Vel Total (ft/s)	9.14	Avg. Vel. (ft/s)		10.53	3.91
Max Chl Dpth (ft)	6.21	Hydr. Depth (ft)		4.15	1.60
Conv. Total (cfs)	22951.0	Conv. (cfs)		20902.9	2048.1
Length Wtd. (ft)	429.43	Wetted Per. (ft)		50.34	34.59
Min Ch El (ft)	992.48	Shear (lb/sq ft)		2.45	0.94
Alpha	1.22	Stream Power (lb/ft s)	10465.76	0.00	0.00
Frctn Loss (ft)	1.39	Cum Volume (acre-ft)	12.75	39.74	4.89
C & E Loss (ft)	0.38	Cum SA (acres)	4.94	8.19	2.14

Warning: The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Note: Multiple critical depths were found at this location. The critical depth with the lowest, valid, energy was used.

CROSS SECTION

RIVER: 1S2WS31B
REACH: I70 RS: 1.136

INPUT
Description:
Station Elevation Data num= 156

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9701.66	998.33	9710.57	998.12	9711.29	998.1	9711.7	998.1	9723.13	998.06
9725.94	998	9730.36	997.9	9734.97	997.79	9743	997.84	9746.82	997.85
9749.02	997.84	9758.66	997.78	9762.16	997.71	9767.67	997.7	9770.51	997.65
9775.43	997.67	9782.35	997.65	9783.9	997.63	9786.33	997.57	9794.2	997.4
9804.99	997.21	9805.63	997.19	9806.04	997.18	9807.87	997.16	9817.89	997.1
9820.13	997.04	9823.65	996.98	9829.73	997.05	9840.3	996.85	9841.58	996.85
9842.31	996.84	9849.11	996.86	9853.42	996.77	9860.97	996.73	9863.6	996.72
9865.27	996.72	9872.73	996.76	9877.11	996.78	9879.63	996.83	9888.95	996.88
9898.29	996.55	9899.82	996.53	9900.8	996.5	9907.07	996.39	9912.64	996.17
9914.32	996.11	9916.95	995.93	9921.56	995.55	9926.98	995.11	9932.95	994.7
9938.41	994.44	9940.54	994.36	9943.13	994.42	9949.91	993.98	9956.65	993.7
9970.92	992.74	9971.98	992.68	9972.93	992.61	9976.66	992.385	9978.08	992.3
9979.52	992.22	9990.26	991.44	9993.5	991.22	9998.94	991.33	10001.41	991.36
10006.02	991.43	10011.17	992.36	10019.01	993.93	10022.08	994.41	0029.89	995.59
10030.39	995.65	10030.69	995.65	10031.92	995.64	10042.38	995.78	10044.95	995.54
10049.22	995.66	10054.06	995.71	0061.48	995.63	10065.75	995.62	10068.54	995.56
10074.08	995.51	10077.44	995.55	10087.87	995.66	10088.65	995.67	10089.12	995.67
10091.04	995.67	10100.81	995.66	10107.2	995.88	10110.5	995.99	10112.49	996.02
10120.6	996.52	10124.18	996.68	10125.06	996.71	10126.52	996.66	10132.34	996.48
10135.87	996.45	10139.63	996.46	10145.85	996.39	10147.55	996.35	10150.16	996.38
10159.24	996.41	0165.18	996.39	10170.92	996.38	10176.04	996.53	10182.61	996.25
10183.32	996.21	10184.5	996.25	10194.29	996.34	10203.83	996.27	10205.98	996.29
10212.45	996.34	10217.67	996.39	10223.16	996.44	10229.35	996.46	10234.3	996.46
10241.04	996.45	10242.48	996.46	10248.86	996.51	10252.72	996.54	10261.81	996.67
10264.41	996.71	10268.39	996.7	10276.1	996.71	0281.14	996.71	0287.78	996.72
10297.95	996.68	10299.47	996.66	10300.46	996.65	10311.15	996.45	10319.79	996.5
10322.84	996.53	10327.51	996.69	10334.53	996.91	10336.26	996.91	10339.12	996.8
10346.21	996.76	10350.82	996.91	10357.9	996.65	10358.44	996.68	10369.58	996.89
10377.77	997.13	10381.27	997.37	10386.62	997.27	10392.95	997.18	10397.1	997.26
10401.8	997.42	10404.64	997.36	10409.08	997.52	10416.33	997.88	10416.36	997.88
10416.42	997.88	10428.01	9981	0435.75	997.75	10438.21	997.59	10441.05	997.52
10443.73	997.45								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

```
************************************************
 9701.66     .05 9921.56    .03610029.89     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9921.5610029.89            656.47  658.41   659.2             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*************************************************************************************************
* E.G. Elev (ft)          *  997.35  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.32  * Wt. n-Val.              *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)          *  997.02  * Reach Len. (ft)         *  656.47  *  658.41  *  659.20  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *   34.07  *  408.61  *  238.26  *
* E.G. Slope (ft/ft)      *0.002394  * Area (sq ft)            *   34.07  *  408.61  *  238.26  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *   25.66  * 1993.32  *  271.02  *
* Top Width (ft)          *  549.51  * Top Width (ft)          *   96.91  *  108.33  *  344.27  *
* Vel Total (ft/s)        *    3.36  * Avg. Vel. (ft/s)        *    0.75  *    4.88  *    1.14  *
* Max Chl Dpth (ft)       *    5.80  * Hydr. Depth (ft)        *    0.35  *    3.77  *    0.69  *
* Conv. Total (cfs)       * 46803.5  * Conv. (cfs)             *   524.4  * 40739.9  *  5539.2  *
* Length Wtd. (ft)        *  658.40  * Wetted Per. (ft)        *   96.95  *  108.84  *  344.36  *
* Min Ch El (ft)          *  991.22  * Shear (lb/sq ft)        *    0.05  *    0.56  *    0.10  *
* Alpha                   *    1.85  * Stream Power (lb/ft s) *10443.73  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.41  * Cum Volume (acre-ft)    *   27.70  *   31.51  *   18.96  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)          *   20.73  *    7.42  *   22.57  *
*************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION OUTPUT  Profile #FW
*************************************************************************************************
* E.G. Elev (ft)          *  998.28  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.31  * Wt. n-Val.              *          *   0.036  *          *
* W.S. Elev (ft)          *  997.97  * Reach Len. (ft)         *  656.47  *  658.41  *  659.20  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *          *  510.89  *          *
* E.G. Slope (ft/ft)      *0.001589  * Area (sq ft)            *          *  510.89  *          *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *          * 2290.00  *          *
* Top Width (ft)          *  108.33  * Top Width (ft)          *          *  108.33  *          *
* Vel Total (ft/s)        *    4.48  * Avg. Vel. (ft/s)        *          *    4.48  *          *
* Max Chl Dpth (ft)       *    6.75  * Hydr. Depth (ft)        *          *    4.72  *          *
* Conv. Total (cfs)       * 57442.0  * Conv. (cfs)             *          * 57442.0  *          *
* Length Wtd. (ft)        *  658.43  * Wetted Per. (ft)        *          *  113.64  *          *
* Min Ch El (ft)          *  991.22  * Shear (lb/sq ft)        *          *    0.45  *          *
* Alpha                   *    1.00  * Stream Power (lb/ft s) *10443.73  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.98  * Cum Volume (acre-ft)    *   12.75  *   36.24  *    4.64  *
* C & E Loss (ft)         *    0.10  * Cum SA (acres)          *    4.94  *    7.42  *    1.99  *
*************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31B
REACH: I70                RS: 1.012

INPUT
Description:
Station Elevation Data    num=     156
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*******************************************************************************
 9705.55  996.18 9706.47   996.2 9715.44  996.21 9723.57  995.97 9725.46  995.92
 9725.59  995.92 9735.48  995.72 9736.26  995.69  9745.5   995.5 9746.93  995.45
 9755.52  995.27 9757.61  995.27 9765.54  995.05 9768.28   995.1 9775.56  995.47
 9778.95   995.4 9785.58  994.97 9789.62  994.83 9795.59  994.82  9800.3  994.77
 9805.61  994.64 9810.97  994.73 9815.63   994.8 9821.64  994.71 9825.65  994.63
 9832.32  994.51 9835.67  994.51 9842.99  994.25 9845.69  994.18 9853.66  994.14
 9855.71  994.11 9864.33  994.03 9865.73  993.99 9875.01  993.67 9875.74  993.64
 9885.68   993.2 9885.76   993.2 9887.05  993.19 9895.28  993.12 9895.78  993.13
 9904.72  993.22  9905.8  993.21 9914.16  993.15 9915.82  993.17  9917.7  993.15
 9925.84  993.11 9933.04  992.98 9935.86  992.94 9942.48  992.97 9945.88  992.96
 9949.72  992.91 9955.89  992.83 9961.36  992.82 9965.91  992.83 9971.06  992.86
 9975.93  992.87 9980.24     992 9985.95  991.01 9990.02   990.2 9992.12  989.84
 9999.09  988.6610005.34 988.5910006.46 988.59 10007.9 988.8410024.43   992.4
10026.03   992.710027.44 992.7610029.41 992.7910036.04 992.8710036.88  992.86
10046.06   992.710050.54 992.6510056.08 992.5910056.44 992.59 10066.1  992.53
10067.12  992.5310076.12 992.3610077.79 992.4110086.14 992.7510088.46  992.78
10096.16  992.8710099.14 992.9310100.73 992.9410105.54 993.0710108.93  993.15
10109.69  993.17 10110.9  993.210120.76 993.2210129.62 993.2410131.44  993.31
10132.59  993.2910137.68 993.3410144.42 993.3810145.94 993.4210148.34  993.44
10153.19  993.5510156.25 993.5610167.06 993.7210168.08 993.7410169.82  993.75
10179.91  993.8810182.18 993.8410185.78 993.8410191.73 993.7910196.68  993.77
10203.56  993.76 10204.5 993.7710215.39 994.0210223.22 994.1210227.22  994.27
10232.92  994.4510239.05 994.4210241.94  994.510250.88 994.5510254.67  994.42
10260.66  994.4110262.71 994.4210266.24 994.4710274.54 994.5810279.38  994.71
10283.66  994.7710286.37 994.81 10298.1 994.86 10298.2 994.8610298.38  994.86
10310.03  995.0810316.81 995.0310319.91 994.9510321.86 994.9810330.52  994.97
10333.69  994.99 10334.4 994.9910335.53 995.0210345.52 995.21 10348.9   995.2
10354.25  995.2310357.35 995.3110362.66 995.4810369.18 995.6810372.97  995.71
10377.89  995.6310381.01 995.6810391.69 995.8610392.84 995.87 10394.8  995.85
10404.66  995.7410410.41 995.7910416.49 995.8410421.39 995.8210428.32  995.99
10428.64     99610429.13     99610435.88     99610440.15 996.0310447.85  996.18
10448.78  996.21

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9705.55     .05 9975.93    .03610029.41     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
      9975.9310029.41          402.13  400.23  398.24              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  994.91  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.66  * Wt. n-Val.              *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)          *  994.25  * Reach Len. (ft)         *  402.13  *  400.23  *  398.24  *
* Crit W.S. (ft)          *  994.25  * Flow Area (sq ft)       *  125.70  *  199.07  *  194.70  *
* E.G. Slope (ft/ft)      *0.006289  * Area (sq ft)            *  125.70  *  199.07  *  194.70  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *  285.61  * 1549.40  *  455.00  *
* Top Width (ft)          *  383.41  * Top Width (ft)          *  132.77  *   53.48  *  197.16  *
* Vel Total (ft/s)        *    4.41  * Avg. Vel. (ft/s)        *    2.27  *    7.78  *    2.34  *
* Max Chl Dpth (ft)       *    5.66  * Hydr. Depth (ft)        *    0.95  *    3.72  *    0.99  *
* Conv. Total (cfs)       * 28876.5  * Conv. (cfs)             *  3601.4  * 19537.6  *  5737.4  *
* Length Wtd. (ft)        *  400.43  * Wetted Per. (ft)        *  132.79  *   54.29  *  197.19  *
* Min Ch El (ft)          *  988.59  * Shear (lb/sq ft)        *    0.37  *    1.44  *    0.39  *
* Alpha                   *    2.20  * Stream Power (lb/ft s)  *10448.78  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.75  * Cum Volume (acre-ft)    *   26.49  *   26.91  *   15.68  *
* C & E Loss (ft)         *    0.10  * Cum SA (acres)          *   19.00  *    6.19  *   18.47  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The program used critical depth
         for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
         water surface came back below critical depth.  This indicates that there is not a valid subcritical answer.  The program
         defaulted to critical depth.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************
* E.G. Elev (ft)          *  996.20  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.31  * Wt. n-Val.              *          *   0.036  *   0.050  *
* W.S. Elev (ft)          *  994.89  * Reach Len. (ft)         *  402.13  *  400.23  *  398.24  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *          *  233.55  *   26.73  *
* E.G. Slope (ft/ft)      *0.007730  * Area (sq ft)            *          *  233.55  *   26.73  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *          * 2187.67  *  102.33  *
* Top Width (ft)          *   66.42  * Top Width (ft)          *          *   53.48  *   12.94  *
* Vel Total (ft/s)        *    8.80  * Avg. Vel. (ft/s)        *          *    9.37  *    3.83  *
* Max Chl Dpth (ft)       *    6.30  * Hydr. Depth (ft)        *          *    4.37  *    2.07  *
* Conv. Total (cfs)       * 26047.1  * Conv. (cfs)             *          * 24883.2  *  1163.9  *
* Length Wtd. (ft)        *  400.32  * Wetted Per. (ft)        *          *   56.31  *   15.07  *
* Min Ch El (ft)          *  988.59  * Shear (lb/sq ft)        *          *    2.00  *    0.86  *
* Alpha                   *    1.09  * Stream Power (lb/ft s)  *10448.78  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    2.63  * Cum Volume (acre-ft)    *   12.75  *   30.62  *    4.44  *
* C & E Loss (ft)         *    0.16  * Cum SA (acres)          *    4.94  *    6.19  *    1.89  *
*****************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31B
REACH: I70                RS: 0.936

INPUT
Description:
Station Elevation Data     num=     125
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
 9692.57  993.58 9697.53  993.54 9700.15  993.52 9704.33  993.51 9710.86  993.48
 9716.79  993.32 9721.57  993.28 9732.19  993.03 9732.26  993.03 9732.29  993.03
 9732.35  993.03    9743     993 9749.76  993.09 9753.72  993.11 9755.47  993.13
 9760.04  993.03 9764.43  992.96 9770.95  992.86 9775.15  992.88 9784.58  992.93
 9785.86  992.94 9786.43  992.94  9787.9  992.92 9796.57  992.71 9801.99  992.51
 9807.29  992.31 9809.64  992.22 9815.76  991.99    9818  991.88 9819.41  991.86
 9828.72  991.69 9836.82  991.64 9839.43  991.58 9843.61  991.36 9848.33  990.98
 9850.87  990.75 9858.98  990.52 9863.81  990.25 9869.09  989.99 9878.69  989.43
 9879.96  989.35 9880.71  989.31 9891.18  988.97  9894.2   988.9 9894.66  988.94
 9895.17  988.97 9910.23  990.15 9914.43  990.43 9917.97  990.73 9925.14  990.73
 9927.18  990.76 9933.45  990.91 9935.86   990.9 9941.28  990.89 9946.57  990.89
 9955.04  990.78 9956.66  990.76 9957.29  990.79 9958.69  990.83    9968  991.35
 9972.14  991.32 9978.71  990.52 9979.88  990.27 9981.77  989.84 9988.67  988.31
  9996.8   986.5 9999.57   986.710003.04  986.9410006.74  987.0110013.02  987.07
 10016.7  987.7610020.72  988.2410026.46  989.0310032.29  989.8410038.61  990.56
   10043  990.9210049.52  990.8310053.71  990.7310063.15  990.1910064.43  990.09
10066.47  990.1510075.14   990.610080.56  991.0210085.86  991.2810094.32  991.65
10096.57  991.7710103.68  991.7910107.28  991.8710115.39   991.9   10118  991.91
10119.16   991.910122.18  991.93 10126.9   991.910128.71   991.910134.64  991.86
10139.43  991.8810150.04  991.9510150.14  991.9510150.21  991.9510160.86  992.09
10167.62  992.1510171.57  992.2310177.89  992.3410181.06  992.3910182.28   992.4
 10188.8  992.37   10193  992.3710202.44   992.610203.71   992.610204.28  992.62
10205.75  992.6510214.43  992.6310219.85  992.6510225.14   992.610233.61  992.86
10235.23  992.9410235.85  992.9510237.26  992.9610246.57  992.9810250.71  993.03
10257.28  993.1210261.46  993.31   10268  993.6210273.92  993.7310277.42  993.86

Manning's n Values         num=       5
     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val     Sta   n Val
*****************************************************************************
 9692.57     .05 9869.09    .036 9910.23     .05 9981.77    .03610032.29     .05

Bank Sta: Left   Right     Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9978.7110038.61            694.69  698.99  701.06              .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  992.56  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.32  * Wt. n-Val.              *   0.041  *   0.038  *   0.050  *
* W.S. Elev (ft)          *  992.24  * Reach Len. (ft)         *  694.69  *  698.99  *  701.06  *
* Crit W.S. (ft)          *          * Flow Area (sq ft)       *  268.26  *  238.68  *  105.51  *
* E.G. Slope (ft/ft)      *0.003206  * Area (sq ft)            *  268.26  *  238.68  *  105.51  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *  832.51  * 1305.77  *  151.72  *
* Top Width (ft)          *  362.95  * Top Width (ft)          *  169.57  *   59.90  *  133.48  *
```

* Vel Total (ft/s)	*	3.74	* Avg. Vel. (ft/s)	*	3.10	*	5.47	*	1.44	*
* Max Chl Dpth (ft)	*	5.74	* Hydr. Depth (ft)	*	1.58	*	3.98	*	0.79	*
* Conv. Total (cfs)	*	40442.4	* Conv. (cfs)	*	14702.5	*	23060.5	*	2679.5	*
* Length Wtd. (ft)	*	698.22	* Wetted Per. (ft)	*	169.79	*	60.60	*	133.56	*
* Min Ch El (ft)	*	986.50	* Shear (lb/sq ft)	*	0.32	*	0.79	*	0.16	*
* Alpha	*	1.48	* Stream Power (lb/ft s)	*	10277.42	*	0.00	*	0.00	*
* Frctn Loss (ft)	*	2.91	* Cum Volume (acre-ft)	*	24.68	*	24.90	*	14.31	*
* C & E Loss (ft)	*	0.05	* Cum SA (acres)	*	17.60	*	5.67	*	16.96	*

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION OUTPUT Profile #FW

* E.G. Elev (ft)	*	993.41	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (ft)	*	0.77	* Wt. n-Val.	*	0.050	*	0.039	*		*
* W.S. Elev (ft)	*	992.64	* Reach Len. (ft)	*	694.69	*	698.99	*	701.06	*
* Crit W.S. (ft)	*		* Flow Area (sq ft)	*	101.95	*	262.83	*		*
* E.G. Slope (ft/ft)	*	0.005654	* Area (sq ft)	*	101.95	*	262.83	*		*
* Q Total (cfs)	*	2290.00	* Flow (cfs)	*	320.57	*	1969.43	*		*
* Top Width (ft)	*	119.00	* Top Width (ft)	*	59.10	*	59.90	*		*
* Vel Total (ft/s)	*	6.28	* Avg. Vel. (ft/s)	*	3.14	*	7.49	*		*
* Max Chl Dpth (ft)	*	6.14	* Hydr. Depth (ft)	*	1.73	*	4.39	*		*
* Conv. Total (cfs)	*	30456.0	* Conv. (cfs)	*	4263.5	*	26192.6	*		*
* Length Wtd. (ft)	*	698.69	* Wetted Per. (ft)	*	61.08	*	62.68	*		*
* Min Ch El (ft)	*	986.50	* Shear (lb/sq ft)	*	0.59	*	1.48	*		*
* Alpha	*	1.26	* Stream Power (lb/ft s)	*	10277.42	*	0.00	*	0.00	*
* Frctn Loss (ft)	*	3.46	* Cum Volume (acre-ft)	*	12.28	*	28.34	*	4.32	*
* C & E Loss (ft)	*	0.02	* Cum SA (acres)	*	4.67	*	5.67	*	1.83	*

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note: Manning's n values were composited to a single value in the main channel.

CROSS SECTION

RIVER: 1S2WS31B
REACH: I70 RS: 0.804

INPUT
Description:
Station Elevation Data num= 121

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9691.88	990.46	9697.69	990.35	9700.88	990.34	9707.69	990.39	9710.88	990.3
9714.08	990.31	9720.88	990.25	9724.08	990.26	9730.88	990.14	9737.69	990.24
9740.88	990.18	9747.69	990.01	9750.88	989.98	9757.69	990.04	9760.88	990.13
9764.08	990.02	9770.88	989.93	9774.08	989.97	9780.88	989.95	9787.69	989.95
9790.88	989.97	9797.69	989.9	9800.88	989.88	9804.08	989.88	9810.88	989.92
9814.08	989.97	9820.88	989.97	9824.08	989.91	9830.88	989.91	9837.69	989.85
9840.88	989.83	9847.69	989.7	9850.88	989.61	9854.08	989.52	9860.88	989.76
9864.08	989.68	9870.88	989.12	9874.08	989.09	9880.88	988.92	9887.69	988.8
9890.88	988.72	9896.54	988.43	9897.69	988.37	9900.88	988.06	9904.05	988.22
9910.88	988.34	9914.02	988.19	9920.89	987.79	9927.79	988.05	9930.89	988.17
9937.83	988.14	9940.89	988.08	9947.86	987.69	9950.89	987.57	9953.89	987.27
9967.92	985.61	9970.86	985.22	9972.78	984.49	9976.5	984.55	9985.4	984.19
9986.19	984.19	9989.58	983.99	9991.01	983.86	9996.32	983.42	9998.08	983.5
9999.88	983.21	0002.08	982.92	10006.07	983.11	0016.42	985.21	0020.89	986.03
10028.12	987.49	10030.89		9881	0033.14	988.11	0038.15	988.31	10040.89	988.41
10043.6	988.39	10050.89	988.41	0053.57	988.42	10060.89	988.61	10063.54	988.71
10070.89	988.91	0078.28	988.99	10080.89	989.15	10088.32	989.26	10090.89	989.18
10093.44	989.24	10100.89	989.55	10103.41	989.57	10110.89	989.51	0113.37	989.59
10120.89	989.67	10128.45	989.72	10130.89	989.72	10138.48	990.02	10140.89	990.11
10143.28	990.12	10150.89	990.32	10153.24	990.36	10160.89	990.71	0167.19	990.54
10171.22	990.54	10171.5	990.55	10171.69	990.56	10183.16	991.05	10191.13	991.08
10194.82	991.19	10200.73	991.24	0206.48	991.31	10210.57	991.39	10215.3	991.51
10218.14	991.53	10229.5	991.68	10229.8	991.68	10230.01	991.69	10237.17	991.85
10241.47	991.94	10249.45	991.87	10251.75	991.87	10253.13	991.88	10259.04	991.95
10259.6	991.96								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9691.88	.05	9947.86	.03	10033.14	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9947.86	10033.14	742.11	742.51	735.97	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

* E.G. Elev (ft)	*	989.61	* Element	*	Left OB	*	Channel	*	Right OB	*
* Vel Head (ft)	*	0.78	* Wt. n-Val.	*	0.050	*	0.036	*	0.050	*
* W.S. Elev (ft)	*	988.82	* Reach Len. (ft)	*	742.11	*	742.51	*	735.97	*
* Crit W.S. (ft)	*	988.08	* Flow Area (sq ft)	*	39.20	*	306.28	*	12.68	*
* E.G. Slope (ft/ft)	*	0.005634	* Area (sq ft)	*	39.20	*	306.28	*	12.68	*
* Q Total (cfs)	*	2290.00	* Flow (cfs)	*	64.73	*	2210.85	*	14.43	*
* Top Width (ft)	*	181.54	* Top Width (ft)	*	61.48	*	85.28	*	34.78	*
* Vel Total (ft/s)	*	6.39	* Avg. Vel. (ft/s)	*	1.65	*	7.22	*	1.14	*
* Max Chl Dpth (ft)	*	5.90	* Hydr. Depth (ft)	*	0.64	*	3.59	*	0.36	*
* Conv. Total (cfs)	*	30509.2	* Conv. (cfs)	*	862.3	*	29454.7	*	192.2	*
* Length Wtd. (ft)	*	742.01	* Wetted Per. (ft)	*	61.55	*	86.12	*	34.79	*
* Min Ch El (ft)	*	982.92	* Shear (lb/sq ft)	*	0.22	*	1.25	*	0.13	*
* Alpha	*	1.23	* Stream Power (lb/ft s)	*	10259.60	*	0.00	*	0.00	*
* Frctn Loss (ft)	*	2.24	* Cum Volume (acre-ft)	*	22.22	*	20.53	*	13.36	*
* C & E Loss (ft)	*	0.15	* Cum SA (acres)	*	15.76	*	4.51	*	15.61	*

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #FW

E.G. Elev (ft)	989.94	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.70	Wt. n-Val.		0.036	
W.S. Elev (ft)	989.24	Reach Len. (ft)	742.11	742.51	735.97
Crit W.S. (ft)		Flow Area (sq ft)		341.78	
E.G. Slope (ft/ft)	0.004369	Area (sq ft)		341.78	
Q Total (cfs)	2290.00	Flow (cfs)		2290.00	
Top Width (ft)	85.28	Top Width (ft)		85.28	
Vel Total (ft/s)	6.70	Avg. Vel. (ft/s)		6.70	
Max Chl Dpth (ft)	6.32	Hydr. Depth (ft)		4.01	
Conv. Total (cfs)	34644.1	Conv. (cfs)		34644.1	
Length Wtd. (ft)	742.09	Wetted Per. (ft)		88.81	
Min Ch El (ft)	982.92	Shear (lb/sq ft)		1.05	
Alpha	1.00	Stream Power (lb/ft s)	10259.60	0.00	0.00
Frctn Loss (ft)	1.61	Cum Volume (acre-ft)	11.46	23.49	4.32
C & E Loss (ft)	0.12	Cum SA (acres)	4.19	4.51	1.83

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31B
REACH: I70 RS: 0.663

INPUT
Description:
Station Elevation Data num= 116

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9798.93	987.47	9799.36	987.49	9804.37	987.25	9810.07	987.24	9817.49	987.17
9819.86	987.14	9820.77	987.14	9827.61	986.88	9831.47	986.78	9835.36	986.77
9842.17	986.63	9843.73	986.54	9844.62	986.5	9857.13	986.21	9861.07	985.97
9867.78	985.65	9870.55	985.53	9874.03	985.35	9877.09	985.42	9882.68	985.47
9887.15	985.68	9891.71	985.78	9896.74	985.57	9900.67	985.36	9901.09	985.35
9906.76	985.33	9912.66	984.71	9915.19	984.61	9919.74	983.97	9923.12	984.2
9924.9	984.17	9932	984.66	9940.35	984.22	9947.15	983.14	9947.79	983.07
9950.4	982.9	9955.32	982.92	9957.45	982.64	9963.23	982.58	9968.56	982.61
9969.24	982.5	9973.84	983.87	9975.54	984.31	9977.4	983.77	9983.55	981.96
9984.58	982.14	9987.52	981.43	9990.35	981.05	9996.84	980.18	9999.46	979.8
10007.81	980.35	10012.69	980.73	10016.34	982.11	10023.63	984.93	10028.7	985.61
10030.05	985.77	10036.1	986.52	10040.87	986.17	10046.11	985.91	10050.98	985.67
10056.12	985.66	10061.65	985.71	10066.12	985.74	10070.28	985.76	10076.13	985.75
10079.94	985.55	10087.7	984.89	10094.05	984.58	10099	984.41	10101.34	984.49
10105.84	984.65	10112.01	984.89	10114.59	985.08	10118.55	985.32	10126.16	985.67
10134.36	985.67	10136.56	985.61	10145.43	985.82	10146.3	985.81	10155.32	986.09
10155.93	986.11	10156.35	986.13	10165.87	986.26	10166.82	986.29	10176.2	986.29
10183.89	986.43	10186.12	986.47	10186.2	986.47	10195.77	986.63	10196.21	986.64
10205.43	986.79	10206.22	986.8	10215.08	986.94	10216.22	986.98	10224.73	987.06
10226.23	987.07	10234.39	987.06	10236.24	987.08	10244.04	987.17	10246.24	987.17
10253.69	987.16	10256.25	987.18	10263.35	987.41	10266.26	987.42	10273	987.47
10276.26	987.64	10282.65	987.63	10286.27	987.55	10292.31	987.61	10296.28	987.65
10301.96	987.76	10306.28	987.79	10311.61	987.82	10316.29	987.84	10321.27	987.85
10325.93	987.89								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9798.93	.05	9975.54	.03	10023.63	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9975.54	10023.63	501.5	500	496.26	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	987.22	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.30	Wt. n-Val.	0.050	0.036	0.050
W.S. Elev (ft)	986.92	Reach Len. (ft)	501.50	500.00	496.26
Crit W.S. (ft)		Flow Area (sq ft)	294.39	258.90	214.01
E.G. Slope (ft/ft)	0.001879	Area (sq ft)	294.39	258.90	214.01
Q Total (cfs)	2290.00	Flow (cfs)	595.50	1396.65	297.85
Top Width (ft)	387.51	Top Width (ft)	149.06	48.09	190.37
Vel Total (ft/s)	2.98	Avg. Vel. (ft/s)	2.02	5.39	1.39
Max Chl Dpth (ft)	7.12	Hydr. Depth (ft)	1.97	5.38	1.12
Conv. Total (cfs)	52830.7	Conv. (cfs)	13738.3	32221.0	6871.3
Length Wtd. (ft)	499.97	Wetted Per. (ft)	149.60	49.45	190.58
Min Ch El (ft)	979.80	Shear (lb/sq ft)	0.23	0.61	0.13
Alpha	2.14	Stream Power (lb/ft s)	10325.93	0.00	0.00
Frctn Loss (ft)	1.41	Cum Volume (acre-ft)	19.38	15.71	11.44
C & E Loss (ft)	0.04	Cum SA (acres)	13.97	3.37	13.71

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #FW

E.G. Elev (ft)	988.20	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.29	Wt. n-Val.	0.050	0.036	0.050
W.S. Elev (ft)	987.91	Reach Len. (ft)	501.50	500.00	496.26
Crit W.S. (ft)		Flow Area (sq ft)	173.11	306.18	148.66
E.G. Slope (ft/ft)	0.001297	Area (sq ft)	173.11	306.18	148.66
Q Total (cfs)	2290.00	Flow (cfs)	493.53	1534.74	261.74
Top Width (ft)	151.02	Top Width (ft)	35.79	48.09	67.14
Vel Total (ft/s)	3.65	Avg. Vel. (ft/s)	2.85	5.01	1.76
Max Chl Dpth (ft)	8.11	Hydr. Depth (ft)	4.84	6.37	2.21
Conv. Total (cfs)	63583.0	Conv. (cfs)	13703.1	42612.7	7267.2
Length Wtd. (ft)	500.07	Wetted Per. (ft)	39.82	49.45	70.47
Min Ch El (ft)	979.80	Shear (lb/sq ft)	0.35	0.50	0.17

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* Alpha                  *    1.42  * Stream Power (lb/ft s) *10325.93  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    1.23  * Cum Volume (acre-ft)   *    9.99  *   17.96  *    3.06  *
* C & E Loss (ft)        *    0.10  * Cum SA (acres)         *    3.89  *    3.37  *    1.26  *
*****************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31B
REACH: I70                RS: 0.568

INPUT
Description:
Station Elevation Data    num=      91
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************
  9763.5  985.91 9764.23   985.9 9771.63  985.73 9779.24  985.31 9781.77  985.21
 9785.34  985.06 9791.91  984.89 9796.59  984.82 9802.06  984.73 9809.75  984.71
  9812.2  984.72 9821.96  984.57 9822.34  984.56 9822.61  984.56 9824.21  984.52
 9831.29  984.35 9832.67   984.3 9841.43  984.14 9842.43  984.09 9843.53  984.02
 9851.58  984.04 9853.63  983.98 9857.57  983.86 9863.07  983.74  9868.3  983.58
 9872.32  983.49 9878.65  983.28 9881.34   983.2 9883.41  983.17 9888.96  983.28
 9897.66  983.37 9900.57  983.39  9902.3  983.42  9907.4  983.54 9913.62  983.56
 9918.04  983.47 9923.76  983.41 9931.81  983.38  9933.9  983.34 9935.39  983.35
 9944.04  983.34 9944.18  983.34 9954.19  983.47 9956.22  983.47 9964.33  983.51
 9970.09  983.42 9975.11  983.12  9978.5  983.06 9986.48   982.7 9986.99  982.52
 9991.35  980.88 9999.33   977.910008.33  978.0910008.78   978.110008.98  978.18
10019.12   982.510023.97  982.9710029.65  983.4310035.32  983.8910041.66  983.69
10045.46  983.6810053.87  983.6810055.61  983.6210064.15  983.8910065.52  983.94
10065.75  983.9510074.19  984.2210075.89  984.2510078.28  984.2710086.03  984.53
10091.54  984.6210096.17  984.6410102.69  984.5910106.31  984.5610108.89  984.52
10109.82   984.510112.86  984.4310120.39   984.410125.59  984.4110136.55  984.67
10138.32  984.7110144.92  984.6610151.06   984.610152.71  984.6310163.79  985.03
10166.02  985.1110168.86  985.2410173.14  985.3710176.52   985.410185.02  985.47
10188.08   985.5

Manning's n Values        num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
  9763.5     .05 9986.48    .03610019.12     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9986.4810019.12           598.76  599.15  602.69            .1        .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)         *  985.77  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.73  * Wt. n-Val.             *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)         *  985.04  * Reach Len. (ft)        *  598.76  *  599.15  *  602.69  *
* Crit W.S. (ft)         *  985.04  * Flow Area (sq ft)      *  252.30  *  176.31  *  119.19  *
* E.G. Slope (ft/ft)     *0.004677  * Area (sq ft)           *  252.30  *  176.31  *  119.19  *
* Q Total (cfs)          * 2290.00  * Flow (cfs)             *  598.17  * 1479.19  *  212.64  *
* Top Width (ft)         *  377.65  * Top Width (ft)         *  200.19  *   32.64  *  144.82  *
* Vel Total (ft/s)       *    4.18  * Avg. Vel. (ft/s)       *    2.37  *    8.39  *    1.78  *
* Max Chl Dpth (ft)      *    7.14  * Hydr. Depth (ft)       *    1.26  *    5.40  *    0.82  *
* Conv. Total (cfs)      * 33486.7  * Conv. (cfs)            * 8747.0  * 21630.1  *  3109.5  *
* Length Wtd. (ft)       *  599.28  * Wetted Per. (ft)       *  200.24  *   34.41  *  144.91  *
* Min Ch El (ft)         *  977.90  * Shear (lb/sq ft)       *    0.37  *    1.50  *    0.24  *
* Alpha                  *    2.70  * Stream Power (lb/ft s) *10188.08  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.73  * Cum Volume (acre-ft)   *   16.24  *   13.21  *    9.55  *
* C & E Loss (ft)        *    0.07  * Cum SA (acres)         *   11.96  *    2.91  *   11.80  *
*****************************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The program used critical depth
         for the water surface and continued on with the calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
         water surface came back below critical depth.  This indicates that there is not a valid subcritical answer.  The program
         defaulted to critical depth.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************************
* E.G. Elev (ft)         *  986.87  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.30  * Wt. n-Val.             *   0.050  *   0.036  *          *
* W.S. Elev (ft)         *  985.57  * Reach Len. (ft)        *  598.76  *  599.15  *  602.69  *
* Crit W.S. (ft)         *          * Flow Area (sq ft)      *   95.83  *  193.67  *          *
* E.G. Slope (ft/ft)     *0.006387  * Area (sq ft)           *   95.83  *  193.67  *          *
* Q Total (cfs)          * 2290.00  * Flow (cfs)             *  380.35  * 1909.65  *          *
* Top Width (ft)         *   74.76  * Top Width (ft)         *   42.12  *   32.64  *          *
* Vel Total (ft/s)       *    7.91  * Avg. Vel. (ft/s)       *    3.97  *    9.86  *          *
* Max Chl Dpth (ft)      *    7.67  * Hydr. Depth (ft)       *    2.28  *    5.93  *          *
* Conv. Total (cfs)      * 28654.4  * Conv. (cfs)            * 4759.3  * 23895.1  *          *
* Length Wtd. (ft)       *  599.05  * Wetted Per. (ft)       *   44.36  *   37.47  *          *
* Min Ch El (ft)         *  977.90  * Shear (lb/sq ft)       *    0.86  *    2.06  *          *
* Alpha                  *    1.34  * Stream Power (lb/ft s) *10188.08  *    0.00  *    0.00  *
* Frctn Loss (ft)        *    2.84  * Cum Volume (acre-ft)   *    8.44  *   15.10  *    2.21  *
* C & E Loss (ft)        *    0.20  * Cum SA (acres)         *    3.44  *    2.91  *    0.88  *
*****************************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.

CROSS SECTION


RIVER: 1S2WS31B
REACH: I70                RS: 0.455
```

```
INPUT
Description:
Station Elevation Data     num=      134
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9662.07  983.55 9662.36  983.55 9666.73  983.52 9672.38  983.48 9677.44   983.4
  9682.4  983.33 9688.15  983.32 9692.43  983.35 9698.86  983.32 9702.45  983.23
 9709.57  983.04 9712.47  982.96 9720.28  982.95 9722.49  982.95 9730.99  982.55
 9732.51  982.51  9741.7  982.27 9742.53  982.26 9752.41  982.41 9752.55  982.41
 9754.55  982.37 9762.09  982.22 9762.57  982.22 9763.12   982.2 9772.59  982.02
 9780.91   981.9 9782.61   981.9 9784.54   981.9 9792.63  981.82 9795.25  981.72
 9802.65  981.36 9809.16  981.53 9812.67  981.45 9816.68  981.37 9822.69  981.16
 9827.99     981 9832.72  980.94  9838.1  980.83 9842.74  980.78 9848.81   980.7
 9852.76  980.63 9856.23  980.63 9862.78  980.68 9870.23  980.71  9872.8  980.72
 9875.06   980.8 9882.82  980.91 9891.65  980.96 9892.84  980.98 9893.89  980.96
 9902.86   981.1  9903.3  981.08 9917.66  979.92 9919.54   979.8 9928.54   977.3
 9929.56  976.99 9937.76  978.44 9942.63   979.3 9943.48  979.36 9951.02  979.87
 9959.79  980.28 9962.98  980.28 9966.62  980.64 9973.01  981.03 9981.97  980.18
 9986.26  979.63  9993.3  977.21 9997.36   975.910000.78  975.8510003.71  975.84
10014.59  978.4210023.11  980.39 10023.6  980.4110030.89   980.810033.13  981.01
 10035.1  981.0510043.15  981.4210052.31  981.5910053.17  981.6210053.93  981.62
10063.19  981.5210065.72  981.5610072.76  981.6710073.21  981.6810073.73  981.68
10083.23  981.75 10087.8  981.5810099.51  981.1810102.59  981.0710108.96  981.48
10119.83  981.9610123.32   982.110129.25  982.2610136.46  981.6710141.94  981.44
10147.41  981.0510149.14  981.0610153.37  981.2610158.93  981.5110163.05  981.74
10164.21  981.6510166.99  981.6410171.49  981.7310176.28  982.0410180.57  982.16
10183.83  982.1410186.23  982.1210187.19  982.13 10194.3  982.2510198.25  982.41
10200.53  982.4710212.35  982.87 10213.5  982.8910213.98  982.8910221.31  982.73
10223.52  982.69 10232.8   982.810233.54  982.7910242.22  982.7910243.56   982.8
10251.63  982.8110253.59  982.8210255.81  982.8410263.61  982.8410266.52  982.82
10273.63  982.8810279.88  982.8110283.65  982.9410289.29  982.9510293.67  982.95
10298.65   982.910303.69  982.9510309.36      983 10312.7  982.99

Manning's n Values         num=        3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9662.07     .05 9986.26    .036 10023.6     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right      Coeff Contr.   Expan.
       9986.26 10023.6          400.61  400.85  399.55              .1       .3
Ineffective Flow     num=        1
   Sta L   Sta R    Elev  Permanent
10129.25 10312.7  982.26        F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************************
* E.G. Elev (ft)          *  982.72  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.51  * Wt. n-Val.              *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)          *  982.21  * Reach Len. (ft)         *  400.61  *  400.85  *  399.55  *
* Crit W.S. (ft)          *  981.83  * Flow Area (sq ft)       *  345.32  *  169.86  *   76.51  *
* E.G. Slope (ft/ft)      *0.004428  * Area (sq ft)            *  345.32  *  169.86  *  107.56  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *  911.02  * 1255.45  *  123.53  *
* Top Width (ft)          *  426.06  * Top Width (ft)          *  223.30  *   37.34  *  165.42  *
* Vel Total (ft/s)        *    3.87  * Avg. Vel. (ft/s)        *    2.64  *    7.39  *    1.61  *
* Max Chl Dpth (ft)       *    6.37  * Hydr. Depth (ft)        *    1.55  *    4.55  *    0.74  *
* Conv. Total (cfs)       * 34414.0  * Conv. (cfs)             * 13690.8  * 18866.8  *  1856.4  *
* Length Wtd. (ft)        *  400.65  * Wetted Per. (ft)        *  224.11  *   38.48  *  103.72  *
* Min Ch El (ft)          *  975.84  * Shear (lb/sq ft)        *    0.43  *    1.22  *    0.20  *
* Alpha                   *    2.19  * Stream Power (lb/ft s) *10312.70  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.73  * Cum Volume (acre-ft)    *   12.13  *   10.83  *    7.98  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)          *    9.04  *    2.43  *    9.65  *
*****************************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************************
* E.G. Elev (ft)          *  983.83  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.63  * Wt. n-Val.              *   0.050  *   0.036  *          *
* W.S. Elev (ft)          *  983.20  * Reach Len. (ft)         *  400.61  *  400.85  *  399.55  *
* Crit W.S. (ft)          *  981.90  * Flow Area (sq ft)       *  201.37  *  207.07  *          *
* E.G. Slope (ft/ft)      *0.003649  * Area (sq ft)            *  201.37  *  207.07  *          *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *  776.74  * 1513.26  *          *
* Top Width (ft)          *   94.97  * Top Width (ft)          *   57.63  *   37.34  *          *
* Vel Total (ft/s)        *    5.61  * Avg. Vel. (ft/s)        *    3.86  *    7.31  *          *
* Max Chl Dpth (ft)       *    7.36  * Hydr. Depth (ft)        *    3.49  *    5.55  *          *
* Conv. Total (cfs)       * 37908.4  * Conv. (cfs)             * 12858.1  * 25050.3  *          *
* Length Wtd. (ft)        *  400.77  * Wetted Per. (ft)        *   63.94  *   41.27  *          *
* Min Ch El (ft)          *  975.84  * Shear (lb/sq ft)        *    0.72  *    1.14  *          *
* Alpha                   *    1.28  * Stream Power (lb/ft s) *10312.70  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.94  * Cum Volume (acre-ft)    *    6.40  *   12.34  *    2.21  *
* C & E Loss (ft)         *    0.02  * Cum SA (acres)          *    2.76  *    2.43  *    0.88  *
*****************************************************************************************************

Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 1S2WS31B
REACH: I70                RS: 0.379

INPUT
Description:
Station Elevation Data     num=      100
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9704.87  981.95 9707.06  981.87 9713.89  981.88 9717.07  981.78 9724.22  981.88
 9727.07  981.88 9734.54  981.72 9737.08  981.69 9744.87  981.55 9747.08   981.5
 9755.19  981.17 9757.09  981.13 9765.51   981.2 9767.09  981.11 9775.84  980.74
```

9777.1	980.69	9786.16	980.47	9787.1	980.45	9796.49	980.15	9797.11	980.15
9806.81	979.83	9807.11	979.83	9807.39	979.82	9819.35	978.51	9823.58	978.47
9829.24	978.3	9833.61	978.25	9837.41	978.24	9843.99	977.83	9846.99	977.75
9855.52	977.14	9856.4	977.13	9859.11	976.9	9865.98	977.46	9872.49	977.74
9876.93	977.49	9878.21	977.57	9886.11	978.28	9893.05	978.9	9897.15	979.05
9904.44	979.05	9907.16	979.03	9914.14	978.9	9917.16	978.88	9920.38	978.94
9927.17	978.84	9933.55	978.54	9937.17	978.33	9941.02	978.64	9947.18	979.19
9952.96	979.24	9957.18	979.33	9962.67	979.5	9967.19	979.47	9981.51	979.68
9984.57	979.68	9986.52	978.89	9987.56	978.47	9996.23	974.73	9999.87	974.81
10006.94	974.8910008.58		974.910019.97		978.8810020.32		97910021.31		979
10022.94	979.0110037.22		979.0510040.31		979.210047.23		979.2710050.01		979.29
10057.23	979.810059.71		979.8210067.24		979.5210069.42		979.510077.24		979.63
10085.56	979.4810087.25		979.4310088.83		979.4710097.25		979.410098.53		979.4
10107.25	979.5210108.24		979.5410117.26		979.6810117.94		979.710127.26		979.9
10137.18	980.1110137.27		980.1110137.35		980.1110140.03		980.1510147.27		980.24
10147.51	980.2510157.28		980.5710157.83		980.5710167.28		980.9410168.15		980.97
10177.29	980.9310178.48		980.9610187.29		981.08 10188.8		981.1410196.87		981.57

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
9704.87	.05	9986.52	.03	10022.94	.05

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff Contr.	Expan.
9986.52	10022.94	501.87	499.7	494.07	.1	.3

CROSS SECTION OUTPUT Profile #100-Year

E.G. Elev (ft)	980.95	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.39	Wt. n-Val.	0.050	0.036	0.050
W.S. Elev (ft)	980.57	Reach Len. (ft)	501.87	499.70	494.07
Crit W.S. (ft)		Flow Area (sq ft)	360.80	153.74	126.67
E.G. Slope (ft/ft)	0.004189	Area (sq ft)	360.80	153.74	126.67
Q Total (cfs)	2290.00	Flow (cfs)	1012.27	1043.39	234.34
Top Width (ft)	375.05	Top Width (ft)	204.37	36.42	134.26
Vel Total (ft/s)	3.57	Avg. Vel. (ft/s)	2.81	6.79	1.85
Max Chl Dpth (ft)	5.84	Hydr. Depth (ft)	1.77	4.22	0.94
Conv. Total (cfs)	35380.5	Conv. (cfs)	15639.5	16120.4	3620.6
Length Wtd. (ft)	499.88	Wetted Per. (ft)	204.82	37.97	134.31
Min Ch El (ft)	974.73	Shear (lb/sq ft)	0.46	1.06	0.25
Alpha	1.95	Stream Power (lb/ft s)	10196.87	0.00	0.00
Frctn Loss (ft)	1.74	Cum Volume (acre-ft)	8.88	9.35	6.90
C & E Loss (ft)	0.00	Cum SA (acres)	7.08	2.09	8.28

Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #FW

E.G. Elev (ft)	981.86	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.87	Wt. n-Val.	0.050	0.036	
W.S. Elev (ft)	980.99	Reach Len. (ft)	501.87	499.70	494.07
Crit W.S. (ft)		Flow Area (sq ft)	210.44	169.12	
E.G. Slope (ft/ft)	0.006732	Area (sq ft)	210.44	169.12	
Q Total (cfs)	2290.00	Flow (cfs)	791.22	1498.78	
Top Width (ft)	142.82	Top Width (ft)	106.40	36.42	
Vel Total (ft/s)	6.03	Avg. Vel. (ft/s)	3.76	8.86	
Max Chl Dpth (ft)	6.26	Hydr. Depth (ft)	1.98	4.64	
Conv. Total (cfs)	27909.7	Conv. (cfs)	9643.1	18266.6	
Length Wtd. (ft)	499.95	Wetted Per. (ft)	109.91	39.95	
Min Ch El (ft)	974.73	Shear (lb/sq ft)	0.80	1.78	
Alpha	1.55	Stream Power (lb/ft s)	10196.87	0.00	0.00
Frctn Loss (ft)	1.55	Cum Volume (acre-ft)	4.50	10.61	2.21
C & E Loss (ft)	0.16	Cum SA (acres)	2.00	2.09	0.88

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31B
REACH: I70 RS: 0.284

INPUT
Description:
Station Elevation Data num= 127

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9808.79	979.67	9810.12	979.68	9810.55	979.69	9810.72	979.69	9811.12	979.68
9821.5	979.54	9825.92	979.62	9832.28	979.5	9833.6	979.44	9842.86	978.95
9850.93	978.72	9853.21	978.69	9862.4	978.22	9862.6	978.21	9862.85	978.2
9863.57	978.15	9870.17	977.82	9873.46	977.74	9878.54	977.62	9881.91	977.54
9886.84	977.43	9890.35	977.35	9895.04	977.24	9898.74	977.06	9903.46	976.87
9906.01	976.74	9911.66	976.44	9912.25	976.39	9913.16	976.37	9919.6	976.01
9919.97	976	9920.89	976.01	9927.33	976.12	9928.98	976.09	9936.05	976.16
9941.09	976.15	9943.87	976.09	9949.25	976.07	9957.01	975.8	9961.42	975.7
9963.89	975.3	9966.58	975.22	9968.63	975.1	9968.68	975.1	9973.35	975.32
9982.29	976.28	9982.69	976.29	9982.82	976.3	9983.83	975.9	9984.85	975.51
9992.98	972.4	9999.79	972.31	10005.65	972.21	10006.06	972.21	10006.17	972.24
10020.18	976.67	10021.17	976.98	10025.53	977.23	10037.08	977.82	10045.61	977.44
10047.86	977.38	10051.21	977.25	10058.64	976.92	10063.65	976.98	10069.42	976.89
10071.88	977.01	10078	977.04	10079.57	977.06	10080.2	977.07	10087.25	977.18
10090.98	977.34	10099.72	977.39	10101.76	977.44	10104.78	977.52	10112.54	977.74
10117.76	977.82	10123.32	977.92	10131.57	978.09	10133.37	978.15	10134.1	978.16
10135.8	978.18	10144.87	978.27	10148.74	978.33	10155.65	978.36	10158.36	978.45
10166.43	978.64	10171.87	978.66	10177.21	978.61	10185.15	978.53	10187.99	978.51
10189.91	978.54	10198.77	978.71	10202.55	978.65	10209.55	978.54	10210.23	978.54
10211.93	978.51	10220.33	978.36	10226.95	978.24	10233.76	978.26	10238.92	978.44
10246.55	978.71	10252.67	978.87	10256.35	978.84	10263.45	978.63	10265.51	978.61
10271.72	978.55	10274.23	978.61	10279.41	978.63	10285	978.81	10287.1	978.86

```
 10292.3  978.6710295.78  978.5410298.13  978.5410306.56  978.5710311.23  978.25
10318.22  977.8610321.11  977.7110329.87  977.96 10338.9  978.2110345.87  978.71
10349.68  979.0110352.24  979.0710360.46  979.3610370.28  979.6410371.24  979.67
10372.66  979.7110379.24  979.84

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9808.79     .05 9982.29    .03610020.18     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9982.2910020.18           418.93  419.37  417.79             .1       .3
Ineffective Flow     num=       1
   Sta L   Sta R    Elev  Permanent
10252.6710379.24  978.87       F

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  979.21  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.40  * Wt. n-Val.              *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)          *  978.82  * Reach Len. (ft)         *  418.93  *  419.37  *  417.79  *
* Crit W.S. (ft)          *  978.12  * Flow Area (sq ft)       *  280.82  *  193.75  *  200.62  *
* E.G. Slope (ft/ft)      *0.002945  * Area (sq ft)            *  280.82  *  193.75  *  237.13  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *  738.25  * 1256.91  *  294.85  *
* Top Width (ft)          *  490.17  * Top Width (ft)          *  134.75  *   37.89  *  317.53  *
* Vel Total (ft/s)        *    3.39  * Avg. Vel. (ft/s)        *    2.63  *    6.49  *    1.47  *
* Max Chl Dpth (ft)       *    6.62  * Hydr. Depth (ft)        *    2.08  *    5.11  *    0.87  *
* Conv. Total (cfs)       * 42201.6  * Conv. (cfs)             * 13604.9  * 23163.1  *  5433.6  *
* Length Wtd. (ft)        *  419.07  * Wetted Per. (ft)        *  134.92  *   39.31  *  230.58  *
* Min Ch El (ft)          *  972.20  * Shear (lb/sq ft)        *    0.38  *    0.91  *    0.16  *
* Alpha                   *    2.23  * Stream Power (lb/ft s) *10379.24  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.55  * Cum Volume (acre-ft)    *    5.19  *    7.35  *    4.84  *
* C & E Loss (ft)         *    0.03  * Cum SA (acres)          *    5.12  *    1.66  *    5.72  *
*****************************************************************************************

Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************
* E.G. Elev (ft)          *  980.15  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.34  * Wt. n-Val.              *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)          *  979.81  * Reach Len. (ft)         *  418.93  *  419.37  *  417.79  *
* Crit W.S. (ft)          *  978.09  * Flow Area (sq ft)       *  210.26  *  231.57  *  150.35  *
* E.G. Slope (ft/ft)      *0.001776  * Area (sq ft)            *  210.26  *  231.57  *  150.35  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *  633.18  * 1313.88  *  342.94  *
* Top Width (ft)          *  148.76  * Top Width (ft)          *   52.57  *   37.89  *   58.30  *
* Vel Total (ft/s)        *    3.87  * Avg. Vel. (ft/s)        *    3.01  *    5.67  *    2.28  *
* Max Chl Dpth (ft)       *    7.61  * Hydr. Depth (ft)        *    4.00  *    6.11  *    2.58  *
* Conv. Total (cfs)       * 54342.2  * Conv. (cfs)             * 15025.5  * 31178.6  *  8138.1  *
* Length Wtd. (ft)        *  419.18  * Wetted Per. (ft)        *   56.39  *   39.31  *   61.16  *
* Min Ch El (ft)          *  972.20  * Shear (lb/sq ft)        *    0.41  *    0.65  *    0.27  *
* Alpha                   *    1.45  * Stream Power (lb/ft s) *10379.24  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.40  * Cum Volume (acre-ft)    *    2.08  *    8.31  *    1.36  *
* C & E Loss (ft)         *    0.13  * Cum SA (acres)          *    1.09  *    1.66  *    0.55  *
*****************************************************************************************

Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
         This may indicate the need for additional cross sections.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Note:    Multiple critical depths were found at this location.  The critical depth with the lowest, valid, energy was used.

CROSS SECTION


RIVER: 1S2WS31B
REACH: I70                RS: 0.205

INPUT
Description:
Station Elevation Data     num=     103
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*********************************************************************************
 9712.52  978.05 9713.68  978.04 9720.55  978.07 9721.69  978.07 9728.27  978.03
 9732.17  977.95  9741.3  977.64 9742.87   977.6  9743.8  977.59 9747.44  977.57
 9755.43  977.57 9760.91  977.47 9767.05  977.33    9776  977.14 9778.68  977.08
 9780.51  977.05 9786.66  976.96  9790.3  976.96 9793.96  976.94 9800.12  976.77
 9801.93  976.73 9804.57  976.66 9813.56  976.43 9819.73   976.3 9825.18  976.21
 9833.13  975.99 9836.81  975.88 9837.75  975.87 9839.33  975.85 9845.04  975.77
 9848.43  975.73 9858.94  975.59 9860.06  975.57 9861.69  975.56 9871.68  975.44
 9878.54  975.31 9883.31  975.28 9888.83  975.35 9894.94  975.44 9896.13  975.46
 9898.15  975.44 9906.56  975.36 9917.76  975.41 9918.19  975.41 9925.33  975.43
 9929.81  975.48 9937.36  975.54 9939.92  975.57 9941.44  975.64 9947.38     976
 9953.07  976.29 9954.52  976.36 9956.97  976.43 9964.69   976.8 9969.12     977
 9978.97  975.53 9979.42  975.49 9980.35   975.4 9983.12  974.18 9991.94   970.4
 9999.18  970.5910007.01   970.810015.25  973.0110019.46  974.2310021.18  974.33
10033.85  975.09 10034.8  975.1510035.39  975.1710046.07  975.48   10055  975.68
 10057.7  975.7510063.99  975.9610069.32  976.0810074.61  976.1110080.95  976.15
10090.19  976.1910092.58  976.2110094.21  976.21 10104.2  976.2710113.82  976.38
10115.08  976.3810115.83  976.3810122.38   976.310127.45  976.2610133.43  976.31
10139.08  976.3510147.31  976.2710150.71  976.2410153.03  976.2710162.33  976.46
10166.17  976.5410172.64  976.6710173.96  976.7210180.76  977.1510185.58  977.21
10192.25  977.3610197.21  977.4710202.66  977.7710208.83  977.9810211.85     978
10217.26  978.0310220.46  978.0610221.64  978.07

Manning's n Values          num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
************************************************
 9712.52     .05 9979.42    .03610021.18     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
```

```
      9979.4210021.18          393.36  394.14  393.81            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)          *  977.63  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    0.72  * Wt. n-Val.              *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)          *  976.90  * Reach Len. (ft)         *  393.36  *  394.14  *  393.81  *
* Crit W.S. (ft)          *  976.90  * Flow Area (sq ft)       *  191.07  *  202.46  *  137.22  *
* E.G. Slope (ft/ft)      *0.004810  * Area (sq ft)            *  191.07  *  202.46  *  137.22  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *  408.84  * 1621.23  *  259.93  *
* Top Width (ft)          *  378.84  * Top Width (ft)          *  181.39  *   41.76  *  155.69  *
* Vel Total (ft/s)        *    4.31  * Avg. Vel. (ft/s)        *    2.14  *    8.01  *    1.89  *
* Max Chl Dpth (ft)       *    6.50  * Hydr. Depth (ft)        *    1.05  *    4.85  *    0.88  *
* Conv. Total (cfs)       * 33020.4  * Conv. (cfs)             *  5895.3  * 23377.2  *  3748.0  *
* Length Wtd. (ft)        *  394.02  * Wetted Per. (ft)        *  181.55  *   43.27  *  155.74  *
* Min Ch El (ft)          *  970.40  * Shear (lb/sq ft)        *    0.32  *    1.40  *    0.26  *
* Alpha                   *    2.50  * Stream Power (lb/ft s) *10221.64  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.54  * Cum Volume (acre-ft)    *    2.92  *    5.44  *    3.04  *
* C & E Loss (ft)         *    0.04  * Cum SA (acres)          *    3.60  *    1.28  *    3.45  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The program used critical depth
         for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
         water surface came back below critical depth.  This indicates that there is not a valid subcritical answer.  The program
         defaulted to critical depth.

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************
* E.G. Elev (ft)          *  978.62  * Element                 *  Left OB *  Channel * Right OB *
* Vel Head (ft)           *    1.67  * Wt. n-Val.              *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)          *  976.95  * Reach Len. (ft)         *  393.36  *  394.14  *  393.81  *
* Crit W.S. (ft)          *  976.95  * Flow Area (sq ft)       *   46.52  *  204.30  *    0.89  *
* E.G. Slope (ft/ft)      *0.008391  * Area (sq ft)            *   46.52  *  204.30  *    0.89  *
* Q Total (cfs)           * 2290.00  * Flow (cfs)              *  114.96  * 2173.95  *    1.09  *
* Top Width (ft)          *   94.45  * Top Width (ft)          *   52.35  *   41.76  *    0.34  *
* Vel Total (ft/s)        *    9.10  * Avg. Vel. (ft/s)        *    2.47  *   10.64  *    1.22  *
* Max Chl Dpth (ft)       *    6.55  * Hydr. Depth (ft)        *    0.89  *    4.89  *    2.61  *
* Conv. Total (cfs)       * 24999.3  * Conv. (cfs)             *  1255.0  * 23732.4  *    11.8  *
* Length Wtd. (ft)        *  394.10  * Wetted Per. (ft)        *   54.01  *   43.27  *    2.94  *
* Min Ch El (ft)          *  970.40  * Shear (lb/sq ft)        *    0.45  *    2.47  *    0.16  *
* Alpha                   *    1.30  * Stream Power (lb/ft s) *10221.64  *    0.00  *    0.00  *
* Frctn Loss (ft)         *    1.40  * Cum Volume (acre-ft)    *    0.85  *    6.21  *    0.63  *
* C & E Loss (ft)         *    0.37  * Cum SA (acres)          *    0.58  *    1.28  *    0.27  *
*****************************************************************************************

Warning: The energy equation could not be balanced within the specified number of iterations.  The program used critical depth
         for the water surface and continued on with the calculations.
Warning: Divided flow computed for this cross-section.
Warning: The velocity head has changed by more than 0.5 ft (0.15 m).  This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4.
          This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section.  This may indicate the
         need for additional cross sections.
Warning: During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated
         water surface came back below critical depth.  This indicates that there is not a valid subcritical answer.  The program
         defaulted to critical depth.

CROSS SECTION


RIVER: 1S2WS31B
REACH: I70                RS: 0.130

INPUT
Description:
Station Elevation Data     num=     111
     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev     Sta    Elev
*****************************************************************************************
 9727.96  976.32 9732.74  976.24  9737.5  976.24 9744.23  976.26    9753  976.18
 9755.72  976.18  9757.8  976.14 9767.21  975.92 9771.15  975.84 9778.11  975.69
 9778.49  975.68  9778.7  975.68 9785.82  975.51 9790.19  975.41 9798.41  975.23
 9801.68  975.16 9805.93  975.08 9813.17  974.94 9818.72  974.94 9824.66  974.89
  9832.4  974.71 9836.15  974.59 9837.19  974.59 9839.02  974.54 9844.53  974.46
 9847.64  974.42 9851.86  974.36 9859.13  974.28 9859.33  974.28 9870.62  974.15
 9879.64   974.1 9881.21  974.08 9882.11  974.08 9885.33  973.98  9893.6  973.79
 9899.94  973.61 9903.23  973.54 9905.09  973.52 9910.57   973.4 9916.58   973.3
  9917.9  973.31 9920.25  973.26 9928.07  973.22 9938.26  973.11 9939.56   973.1
 9940.55  973.11 9947.26  973.22 9951.05  973.26 9960.86  973.23  9962.5  973.01
 9963.18  972.87 9966.96 972.446 9973.07  971.76 9978.19  970.55 9982.35  969.83
  9983.2  969.58  9988.5  968.05 9991.22  967.57 9993.13   966.8 9999.96  967.21
 10003.7  967.4310006.61   967.610018.97     97210020.63  972.4910021.77  972.54
10027.62  972.6510031.48  972.7310035.31  972.8210042.08  972.9710042.97  972.99
10044.12  973.0110054.46  973.1810062.39  973.5310065.95  973.6210070.59  973.66
10077.44  973.7110079.34   973.710082.69  973.8510088.93  973.9710097.06  974.01
10100.42  973.98   10103  974.0210111.91  974.04 10123.3  974.15 10123.4  974.15
 10130.7  974.1210134.89  974.2410143.61  974.4110145.38  974.4310146.38  974.44
10149.99  974.4110157.87  974.3610163.91  974.4610169.36  974.5610176.45  974.61
10180.85  974.6410184.22  974.6710192.34  974.7610196.74   974.810203.83  974.94
10204.52  974.9610211.42  975.2310215.32  975.3410224.83  975.7610226.81  975.82
10229.38  975.85 10238.3  975.8610245.14  975.7210249.79  975.5610255.85  975.26
10260.53  975.03

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
*************************************************
 9727.96     .05 9966.96    .03610020.63     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9966.9610020.63             683.9  686.79  693.59            .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
```

E.G. Elev (ft)	974.81	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.59	Wt. n-Val.	0.050	0.036	0.050
W.S. Elev (ft)	974.22	Reach Len. (ft)	683.90	686.79	693.59
Crit W.S. (ft)	972.78	Flow Area (sq ft)	74.59	261.47	73.47
E.G. Slope (ft/ft)	0.003110	Area (sq ft)	74.59	261.47	73.47
Q Total (cfs)	1888.00	Flow (cfs)	99.80	1697.20	91.00
Top Width (ft)	270.13	Top Width (ft)	102.76	53.67	113.70
Vel Total (ft/s)	4.61	Avg. Vel. (ft/s)	1.34	6.49	1.24
Max Chl Dpth (ft)	7.42	Hydr. Depth (ft)	0.73	4.87	0.65
Conv. Total (cfs)	33856.7	Conv. (cfs)	1789.7	30435.1	1631.9
Length Wtd. (ft)	687.54	Wetted Per. (ft)	102.82	55.21	113.72
Min Ch El (ft)	966.80	Shear (lb/sq ft)	0.14	0.92	0.13
Alpha	1.79	Stream Power (lb/ft s)	10260.53	0.00	0.00
Frctn Loss (ft)	2.98	Cum Volume (acre-ft)	1.72	3.35	2.09
C & E Loss (ft)	0.04	Cum SA (acres)	2.32	0.85	2.23

Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION OUTPUT Profile #FW

E.G. Elev (ft)	975.64	Element	Left OB	Channel	Right OB
Vel Head (ft)	0.43	Wt. n-Val.	0.050	0.036	0.050
W.S. Elev (ft)	975.21	Reach Len. (ft)	683.90	686.79	693.59
Crit W.S. (ft)		Flow Area (sq ft)	47.62	314.21	33.26
E.G. Slope (ft/ft)	0.001747	Area (sq ft)	47.62	314.21	33.26
Q Total (cfs)	1888.00	Flow (cfs)	91.04	1727.93	69.02
Top Width (ft)	89.48	Top Width (ft)	22.84	53.67	12.97
Vel Total (ft/s)	4.78	Avg. Vel. (ft/s)	1.91	5.50	2.08
Max Chl Dpth (ft)	8.41	Hydr. Depth (ft)	2.08	5.85	2.56
Conv. Total (cfs)	45172.2	Conv. (cfs)	2178.3	41342.4	1651.5
Length Wtd. (ft)	687.06	Wetted Per. (ft)	24.93	55.21	15.40
Min Ch El (ft)	966.80	Shear (lb/sq ft)	0.21	0.62	0.24
Alpha	1.23	Stream Power (lb/ft s)	10260.53	0.00	0.00
Frctn Loss (ft)	2.53	Cum Volume (acre-ft)	0.42	3.87	0.48
C & E Loss (ft)	0.10	Cum SA (acres)	0.24	0.85	0.21

Warning: The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning: The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning: The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

CROSS SECTION

RIVER: 1S2WS31B
REACH: I70 RS: 0.000

INPUT
Description: Cross-Section is Section 1.59 of T1SR2WS32A (I63)
Station Elevation Data num= 327

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
9122.65	978.11	9128.73	978.05	9131.03	978.04	9138.01	978.02	9138.79	978.03
9147.06	978	9148.85	978.03	9151.1	978	9158.91	978.09	9165.15	977.92
9168.98	977.9	9174.2	977.92	9179.04	977.97	9185.1	977.81	9189.1	977.81
9192.3	977.65	9199.16	977.42	9201.34	977.42	9209.23	977.17	9219.1	977.27
9219.29	977.27	9219.44	977.27	9220.79	977.26	9228.49	977.22	9229.35	977.22
9237.54	977.08	9239.41	977.02	9246.59	976.99	9249.48	977.03	9255.63	976.98
9259.54	976.95	9264.68	976.82	9269.6	976.77	9273.73	976.74	9279.67	976.64
9282.78	976.55	9289.73	976.47	9291.83	976.45	9299.79	976.44	9300.88	976.47
9309.85	976.6	9309.92	976.6	9310.55	976.57	9319.92	976.1	9328.02	975.79
9329.98	975.84	9337.07	975.81	9340.04	975.72	9346.12	975.71	9350.1	975.5
9355.1	975.48	9360.17	975.58	9366.43	975.56	9370.23	975.49	9377.76	975.29
9380.29	975.24	9389.1	974.81	9390.35	974.79	9391.36	974.77	9400.31	974.83
9400.41	974.83	9400.42	974.83	9400.43	974.83	9410.48	974.55	9412.04	974.48
9421	974.51	9427.46	974.61	9434.43	974.64	9440.67	974.58	9445.65	974.42
9450.73	974.43	9454.7	974.51	9460.79	974.41	9468.43	974.56	9470.86	974.56
9472.79	974.52	9480.92	974.35	9481.84	974.35	9490.07	974.31	9490.89	974.31
9490.98	974.31	9499.94	974.42	9501.04	974.43	9508.99	974.22	9511.11	974.21
9518.03	974.17	9521.17	974.12	9527.08	974.09	9531.23	974.02	9536.13	973.82
9541.29	973.8	9545.18	973.84	9551.36	973.88	9554.23	973.82	9561.42	973.73
9563.28	973.7	9571.48	973.72	9572.32	973.72	9579.83	973.62	9581.37	973.6
9581.54	973.6	9590.42	973.57	9591.61	973.56	9599.47	973.71	9601.67	973.68
9604.43	973.65	9611.73	973.53	9615.76	973.46	9621.8	973.27	9627.09	973.28
9631.86	973.19	9635.66	973.2	9641.92	973.19	9644.71	973.17	9651.98	972.92
9653.76	972.93	9662.05	972.81	9669.59	972.74	9671.85	972.73	9672.11	972.73
9672.43	972.72	9682.17	972.61	9689.95	972.37	9692.23	972.35	9699	972.4
9702.3	972.41	9706.43	972.22	9712.36	972	9717.1	971.98	9722.42	972.06
9726.14	972.05	9732.48	971.89	9740.43	971.73	9742.55	971.68	9744.24	971.65
9752.61	971.58	9753.29	971.57	9759.35	971.44	9762.34	971.38	9762.67	971.38
9771.39	971.43	9772.74	971.41	9780.43	971.28	9782.8	971.26	9789.48	971.13
9792.86	971.13	9798.53	971.1	9802.92	971	9807.58	970.98	9812.99	970.96
9816.63	970.83	9823.05	970.6	9825.67	970.54	9833.11	970.38	9834.72	970.41
9843.17	970.57	9843.77	970.55	9849.1	970.36	9852.82	970.22	9853.24	970.23
9853.76	970.2	9863.3	970.14	9865.09	970.18	9873.36	970.71	9876.42	970.68
9883.42	970.32	9889.01	970.26	9893.49	970.35	9898.06	970.4	9903.55	970.41
9907.11	970.53	9913.61	970.68	9921.76	970.59	9923.67	970.58	9933.09	970.33
9933.74	970.33	9938.86	970.2	9943.3	970.09	9943.8	970.1	9952.35	970.44
9953.86	970.5	9955.76	970.55	9963.93	970.74	9970.45	970.98	9973.99	970.92
9985.7	967.28	9986.04	967.19	9989.1	966.4	9998.12	966.4	10000	966.4
10002.75	966.4	10007.65	967.61	10014.2	969.36	10019.38	970.11	10024.24	970.54
10025.75	970.3	10031.63	969.39	10036.8	968.44	10048.35	969.74	10054.35	970.55
10062.92	970.17	10064.38	970.09	10068.36	969.66	10083.31	968.2	10085.67	968.65
10094.49	970.4	10102.61	970.76	10104.53	970.79	10111.85	970.7	10114.57	970.69
10121.1	970.6	10124.6	970.63	10128.76	970.63	10134.64	970.74	10139.73	970.71
10144.67	970.79	10150.7	970.63	10154.71	970.61	10158.09	970.56	10164.75	970.65
10167.33	970.69	10174.78	970.72	10176.58	970.73	10184.82	970.97	10194.59	971.6
10194.86	971.61	10197.65	971.55	10204.89	971.37	10205.57	971.38	10214.93	971.63
10216.54	971.64	10224.97	971.71	10227.51	971.72	10235	971.77	10238.49	971.79
10245.04	971.77	10249.46	971.81	10255.07	971.86	10260.43	971.91	10265.11	971.95

```
10271.41  971.9110275.15  971.8810282.38  971.9910285.18  972.0310293.35  972.01
10295.22  972.0210304.33     97210305.26     97210315.23  972.2410315.29  972.24
 10315.3  972.2410325.33  972.3210333.78  972.4210335.37  972.4610337.24  972.51
 10345.4  972.6810348.22  972.7210355.44  972.9210361.52  973.0510365.47  973.16
10370.16  973.2410375.51  973.4110381.14  973.6110385.55  973.5610389.26  973.68
10395.58  973.8210403.08  973.6910405.62  973.6510414.06  973.4610415.66  973.44
   10417  973.4210425.69  973.43 10432.8  973.34 10435.5  973.3110435.73  973.31
   10436  973.3110445.77  973.4910446.98  973.49 10455.8  973.2910457.95   973.3
10465.84  973.3710472.49  973.6410475.87  973.6210481.73  973.4810485.91   973.5
10490.98  973.6410495.95  973.7310501.84  973.6910505.98  973.6510512.81  973.67
10516.02  973.6810523.79  973.8210526.06  973.8710527.97  973.9710536.09  974.06
10537.22  974.0410546.13  974.2210546.46  974.2210550.38  974.2110556.17   974.2
10556.71   974.2 10566.2   974.110567.68  974.0910576.24  974.1810578.65   974.2
10586.27  974.1710589.62  974.1710596.31  974.18 10600.6  974.1910606.35  974.24
10611.57  974.2110616.38  974.1810622.54  974.2110626.42  974.2310633.52  974.33
10636.46  974.3610644.49  974.2810646.49  974.2910655.46  974.4710656.53  974.49
10666.44  974.8410666.57  974.8410667.95  974.8310675.92  974.78 10676.6   974.8
10677.41   974.810682.55  974.88

Manning's n Values         num=       3
     Sta   n Val     Sta   n Val     Sta   n Val
***********************************************
 9122.65     .05 9970.45    .03610024.24     .05

Bank Sta: Left   Right    Lengths: Left Channel   Right     Coeff Contr.   Expan.
       9970.4510024.24                0       0       0             .1       .3

CROSS SECTION OUTPUT  Profile #100-Year
*****************************************************************************************
* E.G. Elev (ft)         *  971.79  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    0.46  * Wt. n-Val.             *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)         *  971.33  * Reach Len. (ft)        *          *          *          *
* Crit W.S. (ft)         *  971.24  * Flow Area (sq ft)      *  144.13  *  163.00  *  189.22  *
* E.G. Slope (ft/ft)     *0.006434  * Area (sq ft)           *  144.13  *  163.00  *  189.22  *
* Q Total (cfs)          * 1888.00  * Flow (cfs)             *  282.76  * 1114.67  *  490.57  *
* Top Width (ft)         *  412.93  * Top Width (ft)         *  192.98  *   53.79  *  166.16  *
* Vel Total (ft/s)       *    3.80  * Avg. Vel. (ft/s)       *    1.96  *    6.84  *    2.59  *
* Max Chl Dpth (ft)      *    4.93  * Hydr. Depth (ft)       *    0.75  *    3.03  *    1.14  *
* Conv. Total (cfs)      * 23538.1  * Conv. (cfs)            *  3525.2  * 13896.9  *  6116.1  *
* Length Wtd. (ft)       *          * Wetted Per. (ft)       *  193.05  *   54.91  *  166.82  *
* Min Ch El (ft)         *  966.40  * Shear (lb/sq ft)       *    0.30  *    1.19  *    0.46  *
* Alpha                  *    2.07  * Stream Power (lb/ft s) *10682.55  *    0.00  *    0.00  *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)   *          *          *          *
* C & E Loss (ft)        *          * Cum SA (acres)         *          *          *          *
*****************************************************************************************

CROSS SECTION OUTPUT  Profile #FW
*****************************************************************************************
* E.G. Elev (ft)         *  973.01  * Element                *  Left OB *  Channel * Right OB *
* Vel Head (ft)          *    1.44  * Wt. n-Val.             *   0.050  *   0.036  *   0.050  *
* W.S. Elev (ft)         *  971.58  * Reach Len. (ft)        *          *          *          *
* Crit W.S. (ft)         *  971.58  * Flow Area (sq ft)      *    5.90  *  176.23  *   27.08  *
* E.G. Slope (ft/ft)     *0.012202  * Area (sq ft)           *    5.90  *  176.23  *   27.08  *
* Q Total (cfs)          * 1888.00  * Flow (cfs)             *   14.78  * 1748.37  *  124.85  *
* Top Width (ft)         *   74.76  * Top Width (ft)         *    7.96  *   53.79  *   13.01  *
* Vel Total (ft/s)       *    9.02  * Avg. Vel. (ft/s)       *    2.51  *    9.92  *    4.61  *
* Max Chl Dpth (ft)      *    5.18  * Hydr. Depth (ft)       *    0.74  *    3.28  *    2.08  *
* Conv. Total (cfs)      * 17091.9  * Conv. (cfs)            *   133.8  * 15827.8  *  1130.2  *
* Length Wtd. (ft)       *          * Wetted Per. (ft)       *    8.83  *   54.91  *   16.27  *
* Min Ch El (ft)         *  966.40  * Shear (lb/sq ft)       *    0.51  *    2.45  *    1.27  *
* Alpha                  *    1.14  * Stream Power (lb/ft s) *10682.55  *    0.00  *    0.00  *
* Frctn Loss (ft)        *          * Cum Volume (acre-ft)   *          *          *          *
* C & E Loss (ft)        *          * Cum SA (acres)         *          *          *          *
*****************************************************************************************

Warning: User specified water surface is not possible for the specified flow regime. The program used critical depth as the
         starting water surface.
Warning: The cross section had to be extended vertically during the critical depth calculations.
Warning: The parabolic search method failed to converge on critical depth.  The program will try the cross section slice/secant
         method to find critical depth.

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

SUMMARY OF MANNING'S N VALUES

River:1S2WS31B
*******************************************************************************************
*     Reach       *   River Sta.   *   n1    *   n2    *   n3    *   n4    *   n5    *
*******************************************************************************************
*I70               *    1.218       *     .05*     .036*     .05*     .015*     .05*
*I70               *    1.136       *     .05*     .036*     .05*         *         *
*I70               *    1.012       *     .05*     .036*     .05*         *         *
*I70               *    0.936       *     .05*     .036*     .05*     .036*     .05*
*I70               *    0.804       *     .05*     .036*     .05*         *         *
*I70               *    0.663       *     .05*     .036*     .05*         *         *
*I70               *    0.568       *     .05*     .036*     .05*         *         *
*I70               *    0.455       *     .05*     .036*     .05*         *         *
*I70               *    0.379       *     .05*     .036*     .05*         *         *
*I70               *    0.284       *     .05*     .036*     .05*         *         *
*I70               *    0.205       *     .05*     .036*     .05*         *         *
*I70               *    0.130       *     .05*     .036*     .05*         *         *
*I70               *    0.000       *     .05*     .036*     .05*         *         *
*******************************************************************************************

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

SUMMARY OF REACH LENGTHS

River: 1S2WS31B
*****************************************************************
*     Reach       *   River Sta.   *  Left   * Channel *  Right  *
*****************************************************************
*I70               *    1.218       *  431.85*  429.81*   421.37*
*I70               *    1.136       *  656.47*  658.41*    659.2*
*I70               *    1.012       *  402.13*  400.23*   398.24*
*I70               *    0.936       *  694.69*  698.99*   701.06*
```

*I70	* 0.804	*	742.11*	742.51*	735.97*
*I70	* 0.663	*	501.5*	500*	496.26*
*I70	* 0.568	*	598.76*	599.15*	602.69*
*I70	* 0.455	*	400.61*	400.85*	399.55*
*I70	* 0.379	*	501.87*	499.7*	494.07*
*I70	* 0.284	*	418.93*	419.37*	417.79*
*I70	* 0.205	*	393.36*	394.14*	393.81*
*I70	* 0.130	*	683.9*	686.79*	693.59*
*I70	* 0.000	*	0*	0*	0*

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: 1S2WS31B

Reach	River Sta.	Contr.	Expan.
*I70	* 1.218	.1	.3
*I70	* 1.136	.1	.3
*I70	* 1.012	.1	.3
*I70	* 0.936	.1	.3
*I70	* 0.804	.1	.3
*I70	* 0.663	.1	.3
*I70	* 0.568	.1	.3
*I70	* 0.455	.1	.3
*I70	* 0.379	.1	.3
*I70	* 0.284	.1	.3
*I70	* 0.205	.1	.3
*I70	* 0.130	.1	.3
*I70	* 0.000	.1	.3

Flood Control District
of Maricopa County

INTEROFFICE MEMORANDUM

Date: November 27, 2012

To: Timothy S. Phillips, P.E., Chief Engineer and General Manager

From: Cathy Regester, P.E., CFM

Subject: Rainbow Valley ADMP Areas 1-4 Floodplain Delineation Study
Contract FCD 2011C003 – WA #3

The detailed floodplain and floodway delineation for Rainbow Valley ADMP Areas 1 - 4 is ready for use as the best available technical information. The study documentation will be sent to FEMA for review and incorporation into the County's FIRM panels.

The background for the study includes the following:

> The study is a detailed delineation of approximately 7.4 linear miles of limited Zone AE floodplain (no floodway) and 2.2 linear miles of Zone AE floodplain with floodway. The topographic basis for the detailed study is 2-foot contour interval mapping in the NAVD88 vertical datum flown March 30, 2005. The study will replace an approximate Zone A study delineated by EEC in 2006 on 4-ft and 10-ft contour interval mapping. The study also includes revised hydrologic calculations based on the District's Rainbow Valley ADMP and current methodology. RBF Consulting was the Consultant for the study. The project manager for the Consultant was Nathan Ford, P.E. The project manager for the District was Cathy Regester, P.E., CFM.

Please concur and authorize below the use of this new study.

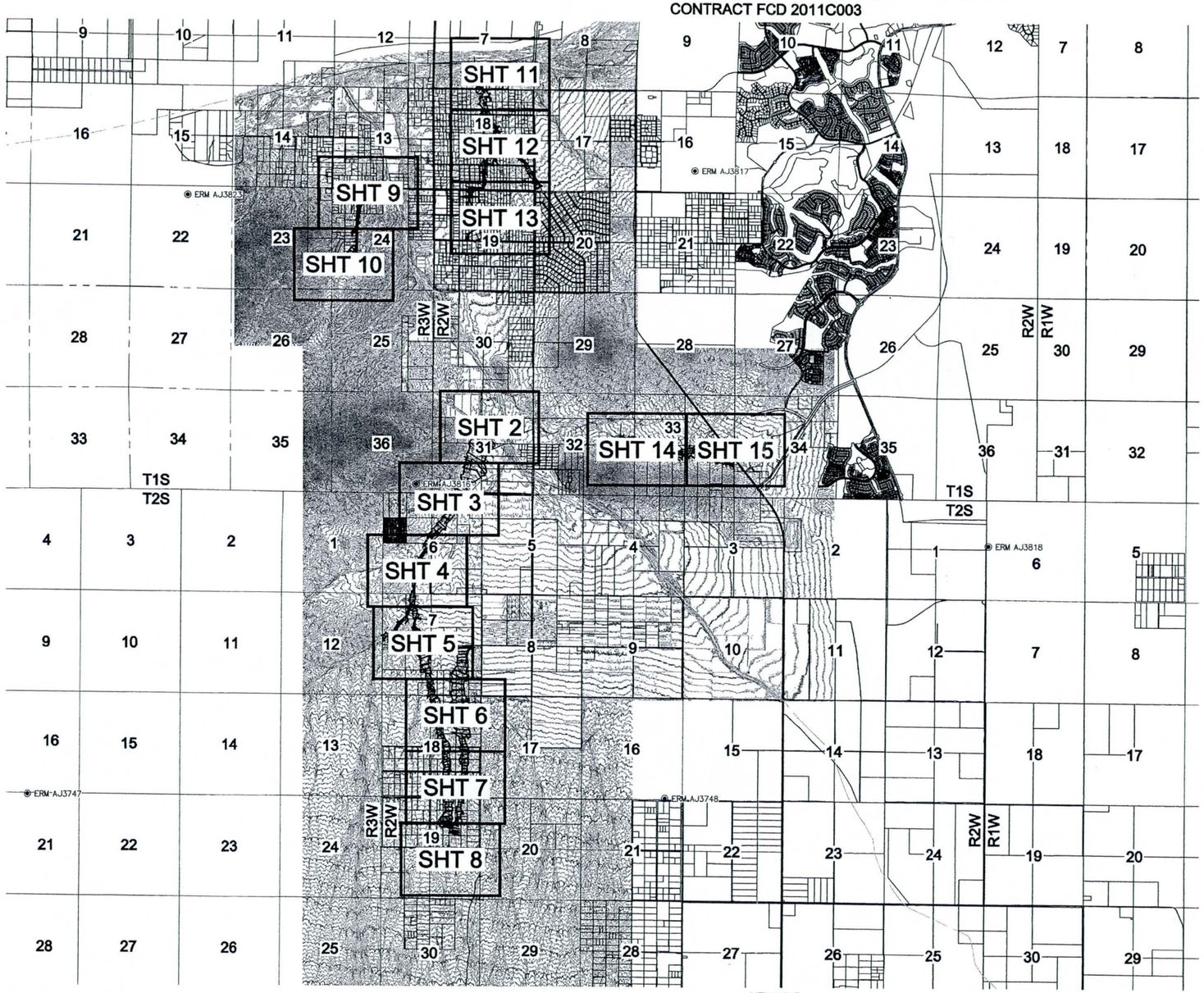
Date 12/6/12	
Timothy S. Phillips, P.E., Chief Engineer and General Manager	
Date 12/4/2012	Kelli A Sertich Date 12/3/12
Ed Raleigh, P.E. Engineering Division Manager	Kelli Sertich, AICP Floodplain Management & Services Division Manager
Date 11,30,12	
Amir Motamedi, P.E. Hydrology/Hydraulics Branch Manager	
Catherine W. Regester Date 11/27/12	
Catherine Regester, P.E., CFM Project Manager	
File Copies: 1. _____ 2. _____	☐ GIS Posted (Pending Floodplain Only) Date:_____

2801 West Durango Street Phoenix, Arizona 85009 Phone: 602-506-1501 Fax: 602-506-4601

FLOODPLAIN WORK MAP
FOR

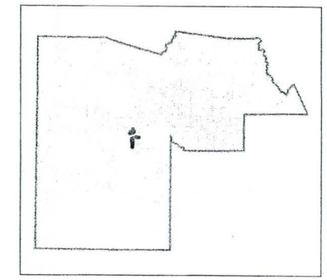
RAINBOW VALLEY ADMP AREAS 1-4
FLOODPLAIN DELINEATION STUDY

CONTRACT FCD 2011C003



KEY MAP

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4
FLOODPLAIN DELINEATION STUDY

SCALE 1"=2800'

2800 1400 0 2800 5600 8400
SCALE: 1"=2800'

NOTE: RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY INCLUDES 1S2WS31(A56), 2S2WS7A(A52), 2S2WS7B(A51), 1S3WS24A(A60), 1S2WS18B(J37), 1S2WS18A(J27), AND 1S2WS31B(I70).

SHEET INDEX

1	COVER SHEET
2-15	FLOODPLAIN WORK MAP

ENGINEER

RBF CONSULTING
NATHAN E. FORD, P.E.
2929 N. CENTRAL AVENUE, STE 800
PHOENIX, ARIZONA 85012
PHONE (602) 279-1234
FAX (602) 279-1411

DATUM

HORIZONTAL: NORTH AMERICAN DATUM 1983

VERTICAL: NORTH AMERICAN VERTICAL DATUM 1988 (NAVD88)

ELEVATION REFERENCE MARKS

- ERM AJ3817 (989.5 FT)
- ERM AJ3823 (935.9 FT)
- ERM AJ3818 (1102.1 FT)
- ERM AJ3816 (1002.8 FT)
- ERM AJ3748 (1059.6 FT)
- ERM AJ3747 (1030.3 FT)

NOTE: DATA FOR ELEVATION REFERENCE MARKS (ERM) OBTAINED FROM THE NATIONAL GEODETIC SURVEY DATA SHEETS AVAILABLE AT WWW.NGS.NOAA.GOV

NOTE:
THIS MAP WAS PREPARED USING 2 FT CONTOUR DATA PROVIDED BY THE FLOOD CONTROL DISTRICT OF MARICOPA COUNTY FROM AERIAL PHOTOGRAPHS FLOWN IN 2005 BY GENERAL DYNAMICS ADVANCED INFORMATION SYSTEMS.

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
2929 NORTH CENTRAL AVENUE, SUITE 800
PHOENIX, ARIZONA 85012-2744
602.279.1234 • FAX 602.279.1411 • www.RBF.com
DESIGNED NEF DRAWN DLP CHECKED NEF
WORKING ENGINEER NATHAN E. FORD, P.E.
PROJECT COORDINATOR NATHAN E. FORD, P.E.

DRAWING SCALE 1" = 2800'

NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

OWNER: FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
PROJECT TITLE: RAINBOW VALLEY ADMP AREAS 1-4 FDS
PLAN TYPE: FLOODPLAIN WORK MAP

SEALED: Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD
Date Signed 11/19/12
Expires 12/31/12

ORIGINAL PLAN DATE: NOV/2012
LATEST PLAN REVISION: –
SHEET NUMBER: 1 OF 15
PROJECT NUMBER: 45104771

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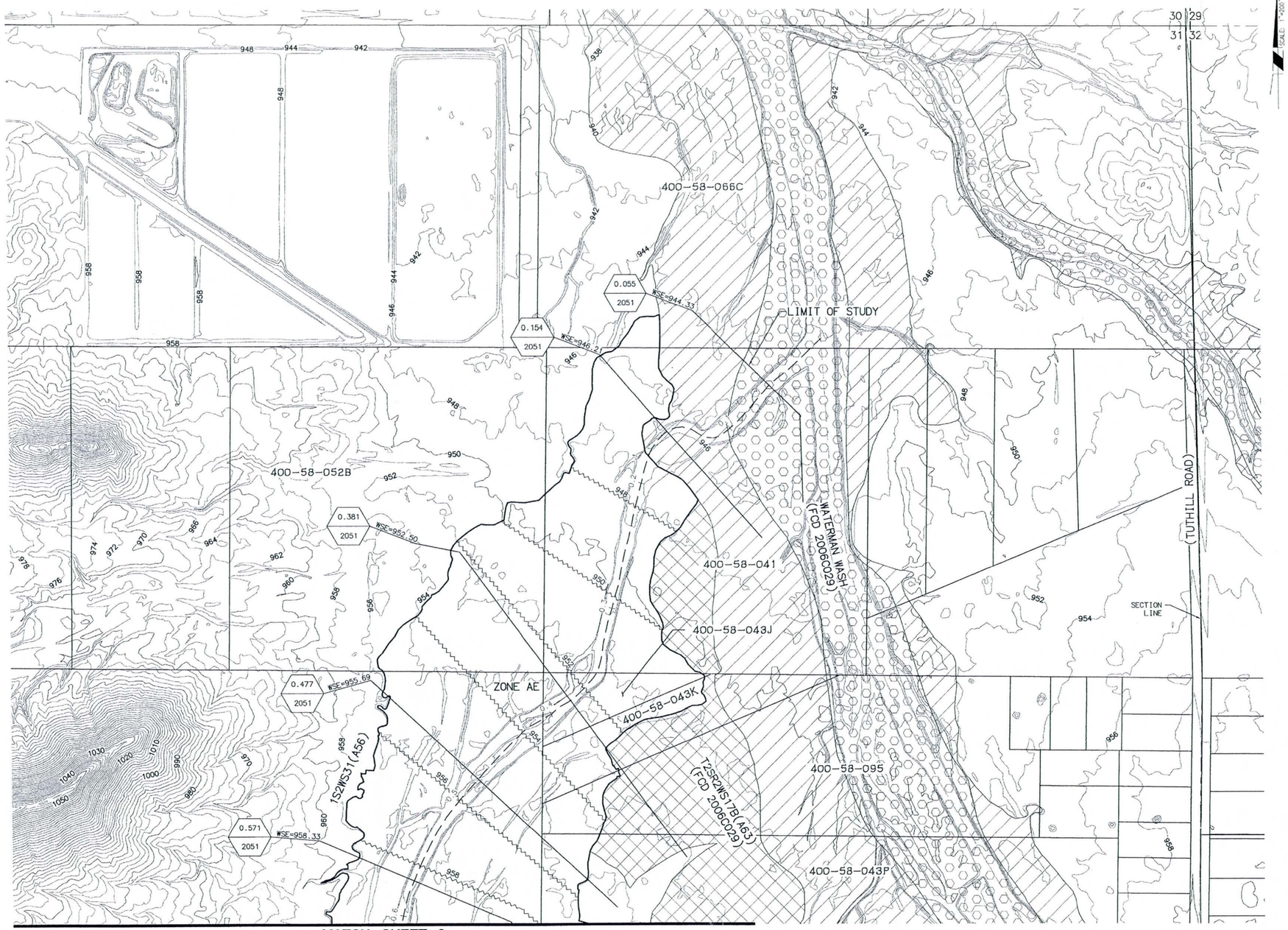
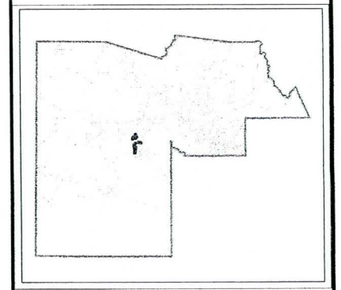


MATCH SHEET 3

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600

SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE; CROSS SECTION; Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION

NOTE:
THE PARCEL BOUNDARIES AND APN'S ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE EXACT RELATIONSHIPS OF PARCELS AND APN'S SHOULD BE INDEPENDENTLY RESEARCHED AND VERIFIED.

NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS FLOODPLAIN WORK MAP

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
2929 NORTH CENTRAL AVENUE, SUITE 800
PHOENIX, ARIZONA 85012-2794
602.279.1234 • FAX 602.279.1418 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/12/2012 ARIZONA, U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'

PLAN DATE: NOV/2012

PROJECT NUMBER: 45104771

SHEET NO. 2 OF 15 SHEETS

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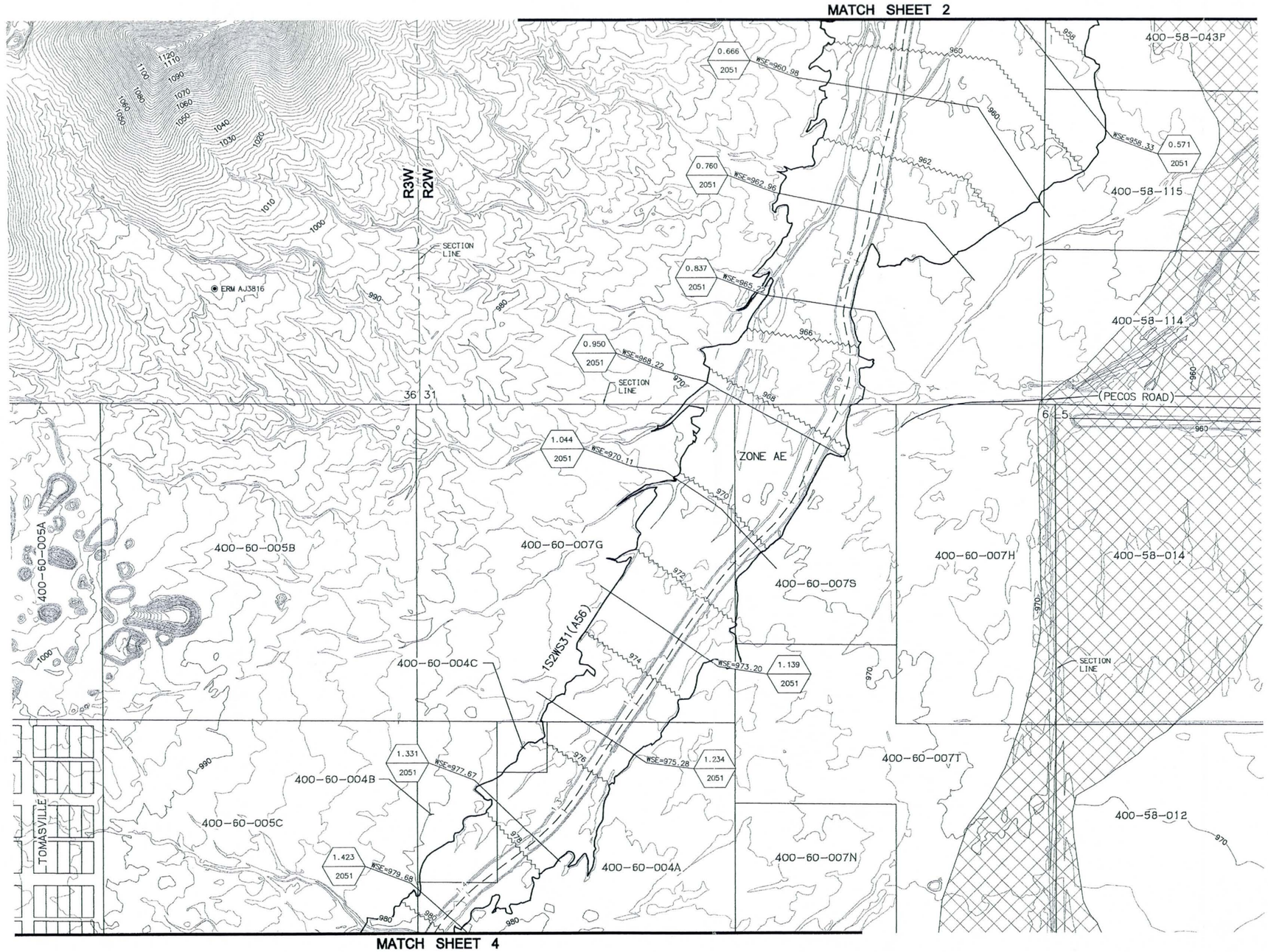
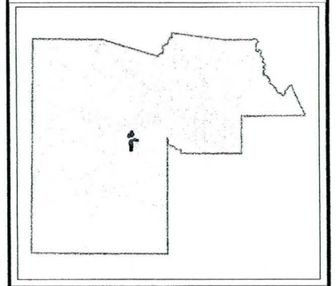


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600

SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION

NOTE:
THE PARCEL BOUNDARIES AND APN'S ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE EXACT RELATIONSHIPS OF PARCELS AND APN'S SHOULD BE INDEPENDENTLY RESEARCHED AND VERIFIED.

NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS FLOODPLAIN WORK MAP

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2929 NORTH CENTRAL AVENUE SUITE 800
PHOENIX, ARIZONA 85012-2794
602.279.1234 • FAX 602.279.1411 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/19/12 ARIZONA, U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'

PLAN DATE: NOV/2012

PROJECT NUMBER: 45104771

SHEET NO. 3 OF 15 SHEETS

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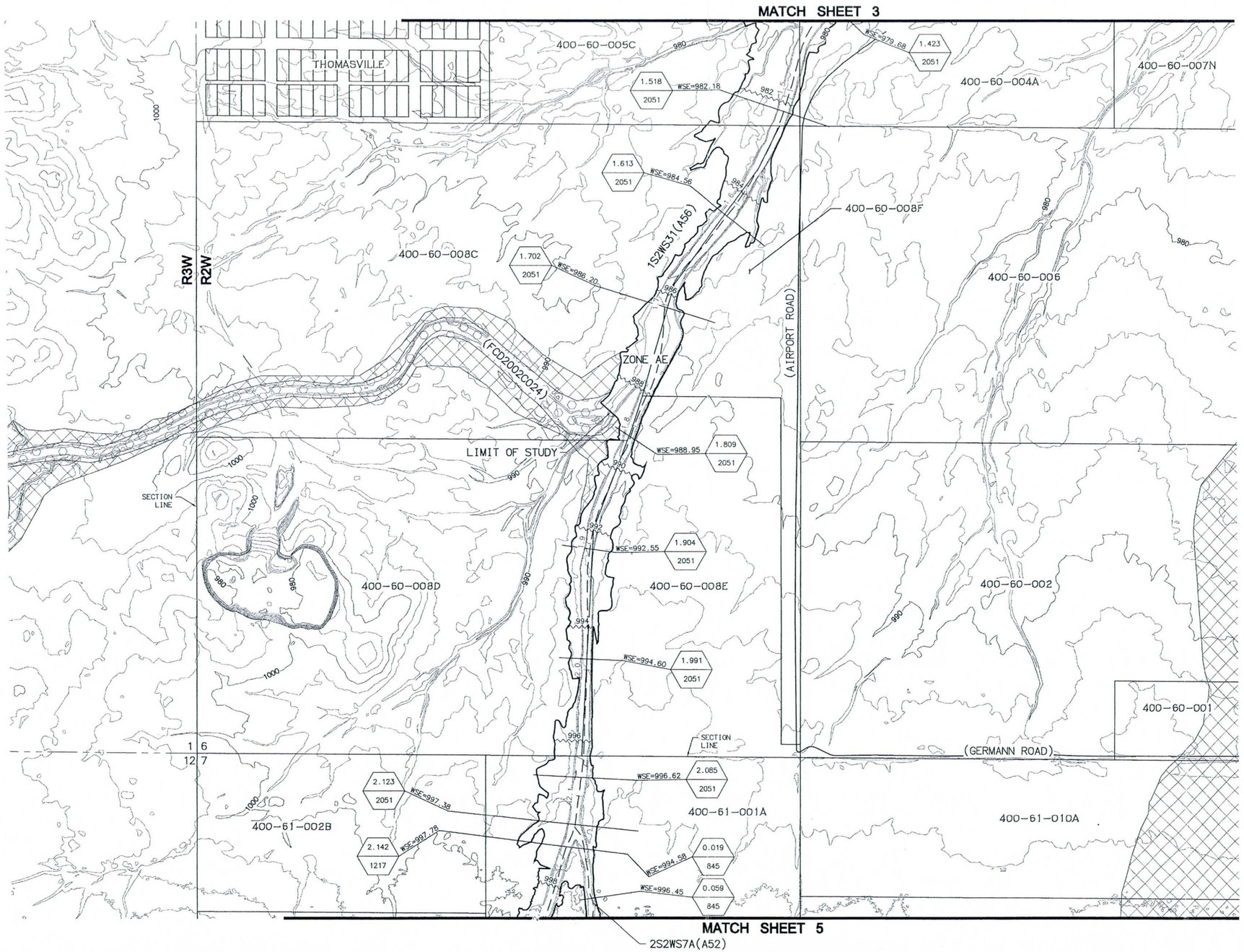
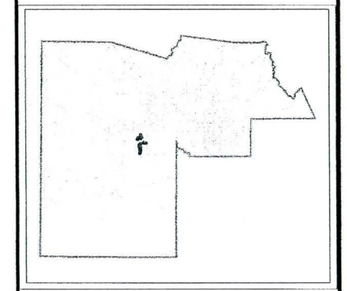


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4
FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600
SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) — WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 — EXISTING CONTOUR
- 1700 — BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS
FLOODPLAIN WORK MAP

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PHOENIX, ARIZONA 85012-2794
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Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/13/12 ARIZONA, U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'
PLAN DATE: NOV/2012
PROJECT NUMBER: 45104771
SHEET NO. 4 OF 15 SHEETS

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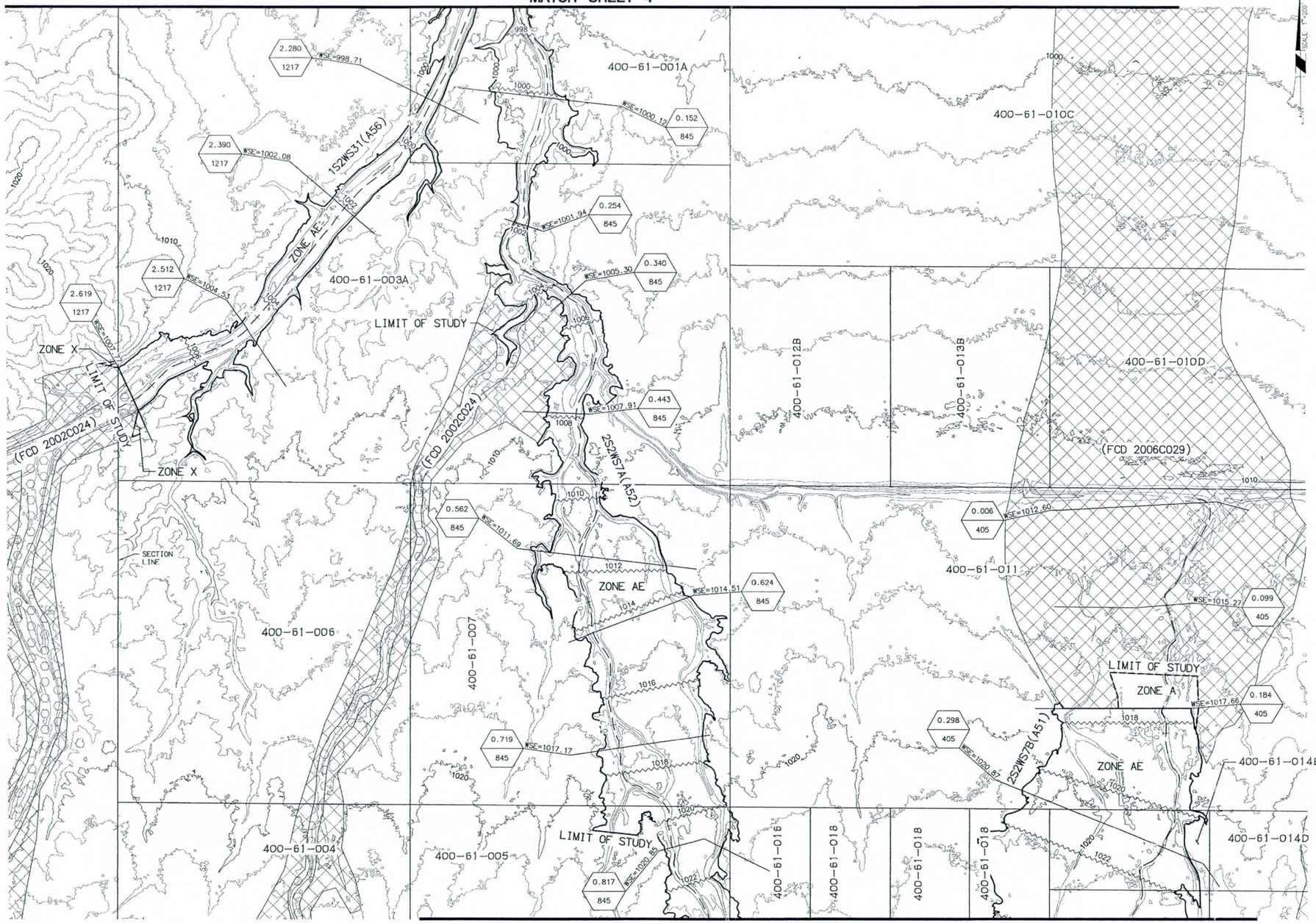
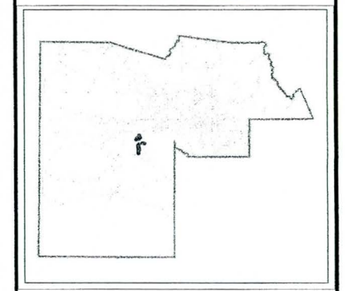
MATCH SHEET 4



MATCH SHEET 6

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600
SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 / 1156 STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS
FLOODPLAIN WORK MAP

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PHOENIX, ARIZONA 85012-2794
602.2791234 • FAX 602.279.1411 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/14/12 ARIZONA, U.S.A. Nathan Ford Expires 6/30/13

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'
PLAN DATE: NOV/2012
PROJECT NUMBER: 45104771
SHEET NO. 5 OF 15 SHEETS

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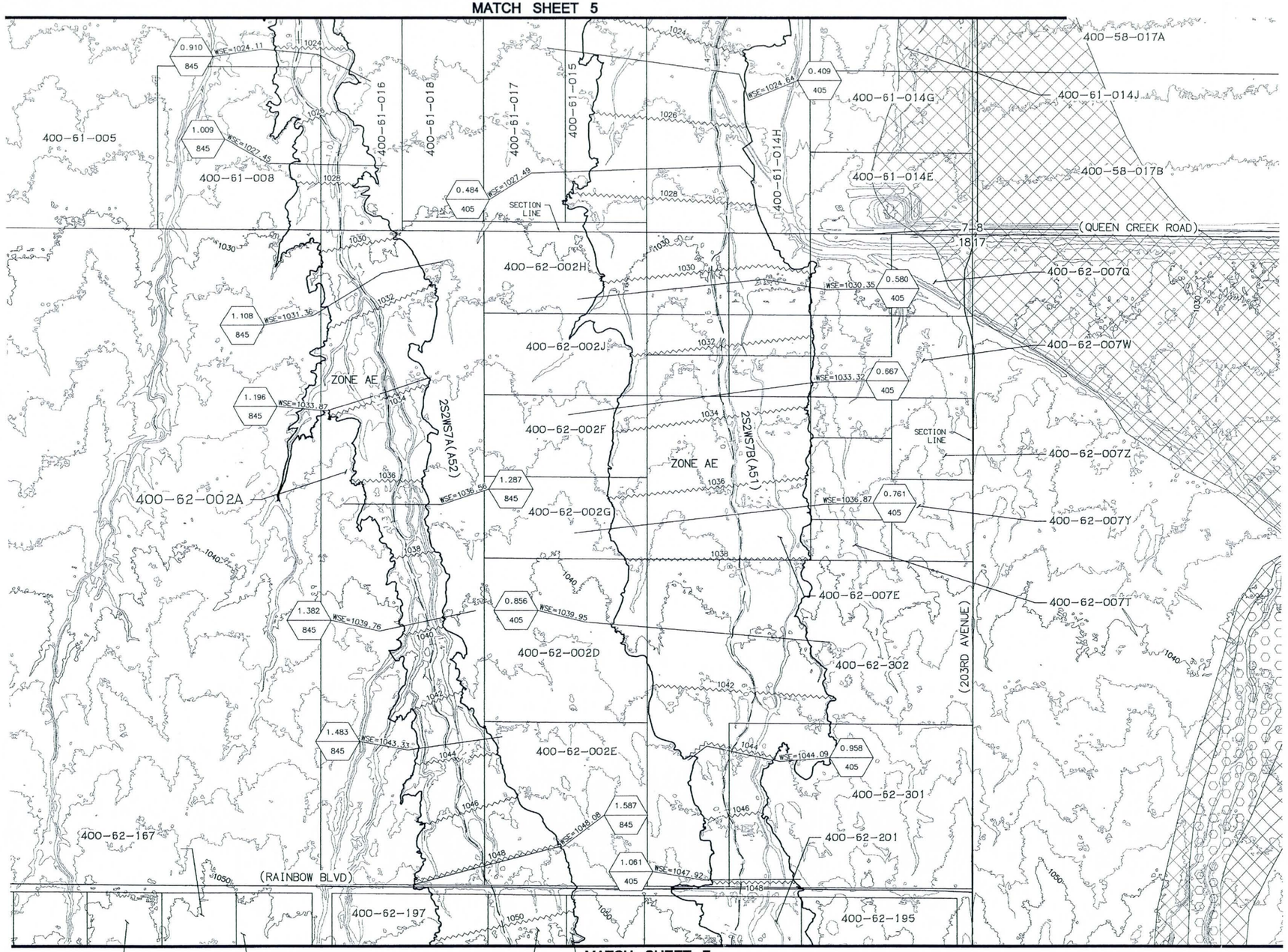
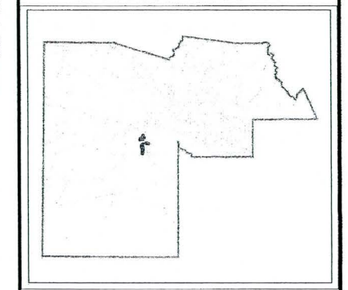


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600

SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS FLOODPLAIN WORK MAP

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REGISTERED PROFESSIONAL ENGINEER CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/12/12 ARIZONA U.S.A. Nathan E. Ford Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'

PLAN DATE: NOV/2012

PROJECT NUMBER: 45104771

SHEET NO. 6 OF 15 SHEETS

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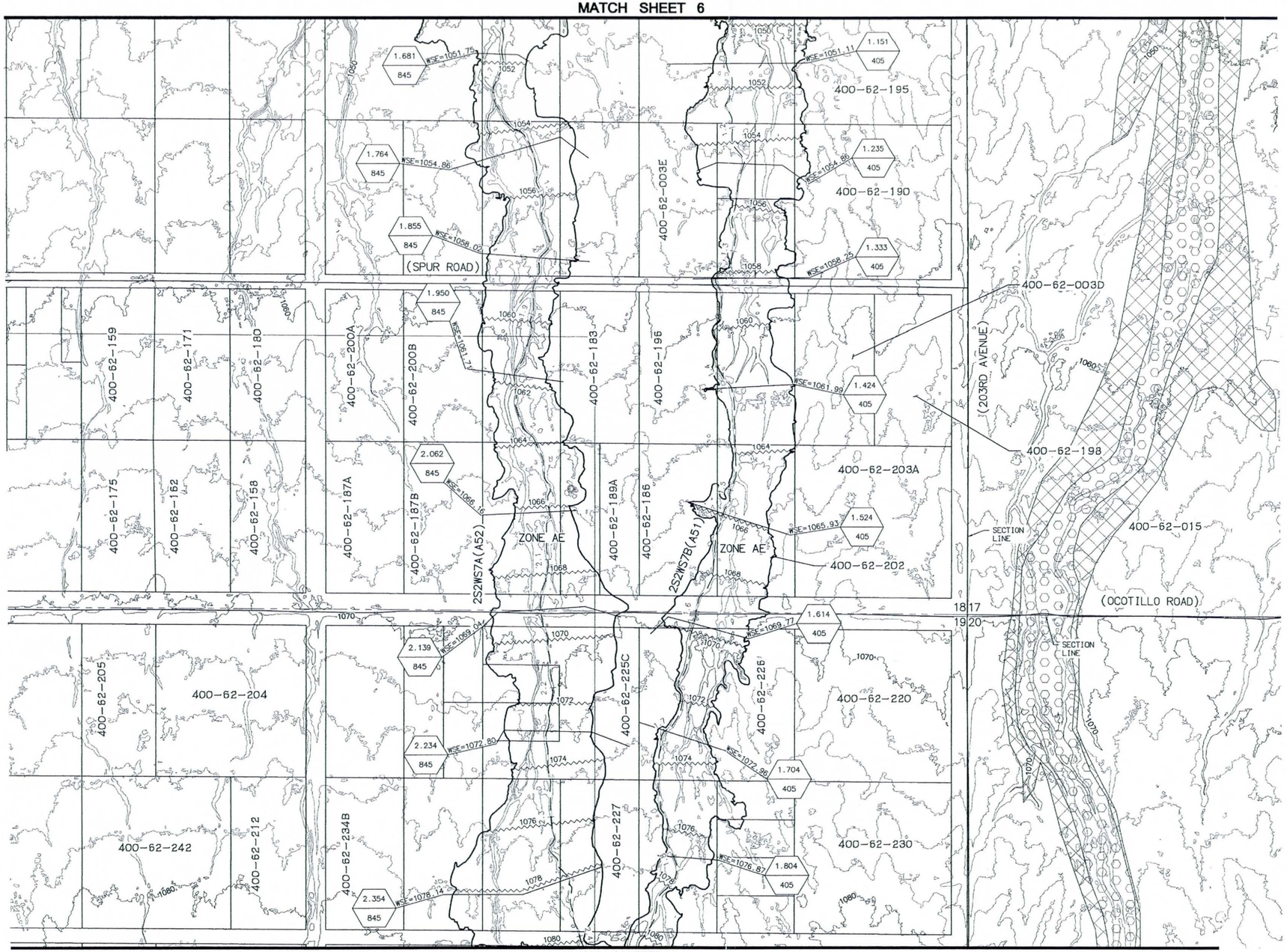
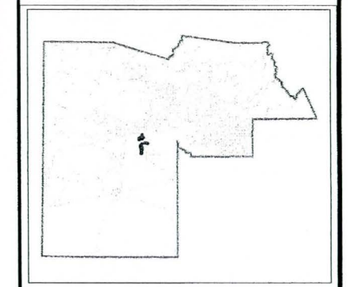
MATCH SHEET 6



MATCH SHEET 8

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4
FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600
SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 STATION RIVER MILE; 1156 CROSS SECTION Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS
FLOODPLAIN WORK MAP

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
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PHOENIX, ARIZONA 85012-2794
602.279.1234 • FAX 602.279.1411 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/30/12 ARIZONA, U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'
PLAN DATE: NOV/2012
PROJECT NUMBER: 45104771
SHEET NO. 7 OF 15 SHEETS

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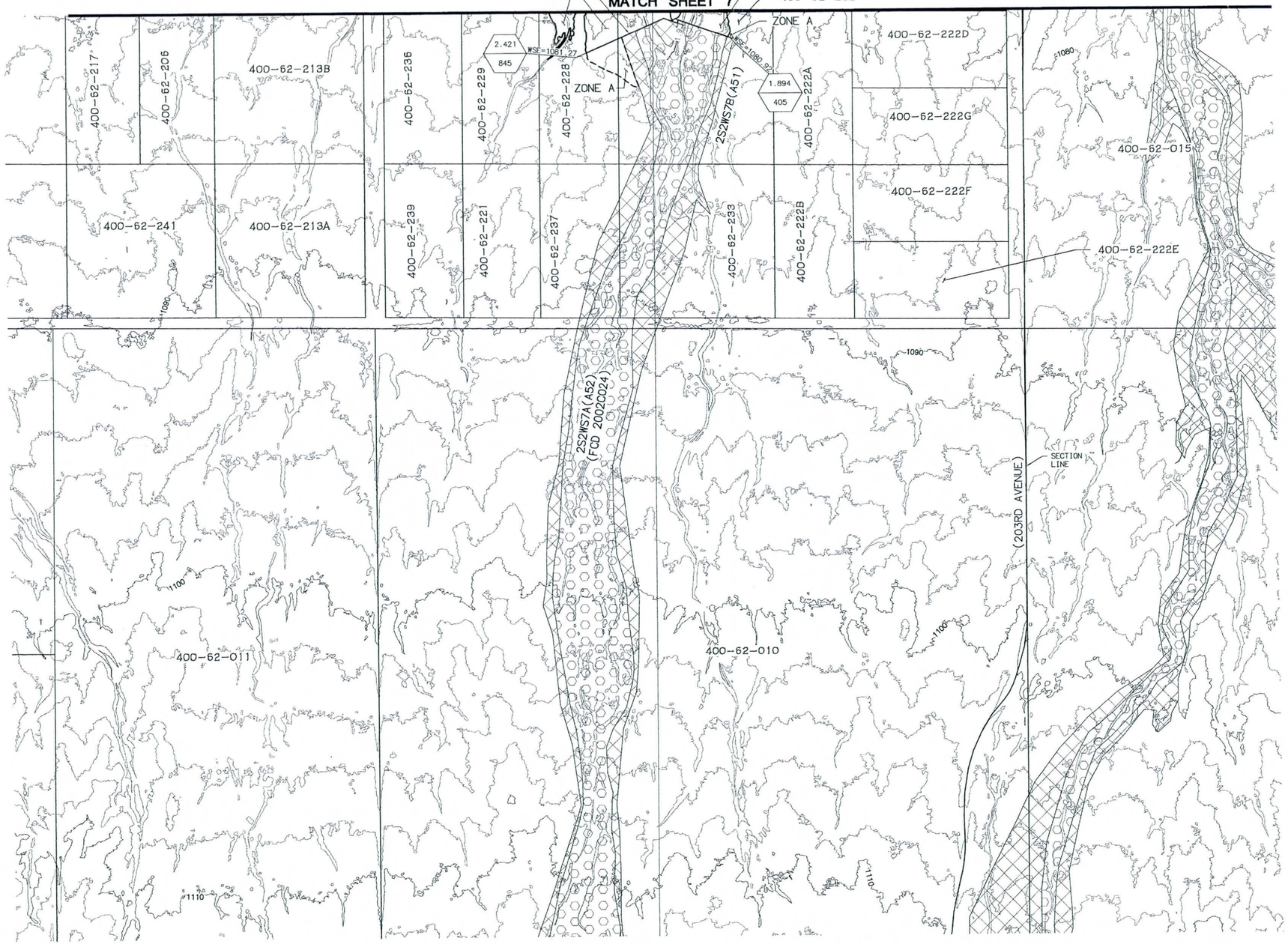
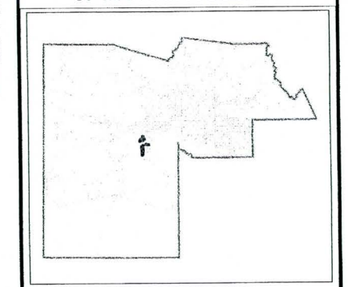


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4
FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600
SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION

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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS FLOODPLAIN WORK MAP

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PHOENIX, ARIZONA 85012-2794
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Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/30/12 ARIZONA, U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'

PLAN DATE: NOV/2012

PROJECT NUMBER: 45104771

SHEET NO. 8 OF 15 SHEETS

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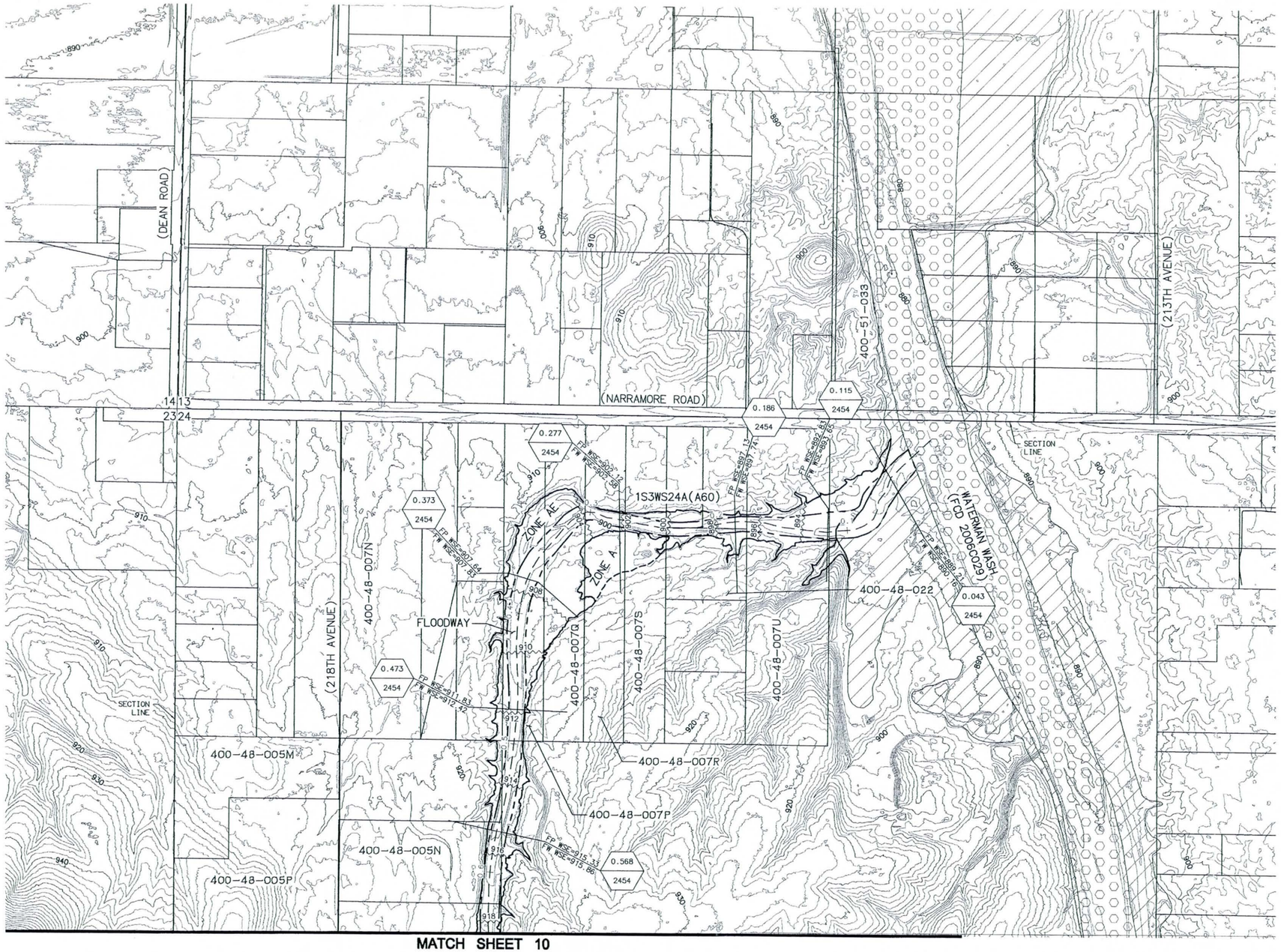
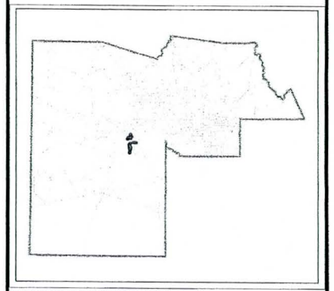


MATCH SHEET 10

SCALE 1"=200'

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600

SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) — WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 — EXISTING CONTOUR
- 1700 — BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS
FLOODPLAIN WORK MAP

RBF CONSULTING
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Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/13/12 ARIZONA U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'

PLAN DATE: NOV/2012

PROJECT NUMBER: 45104771

SHEET NO. 9 OF 15 SHEETS

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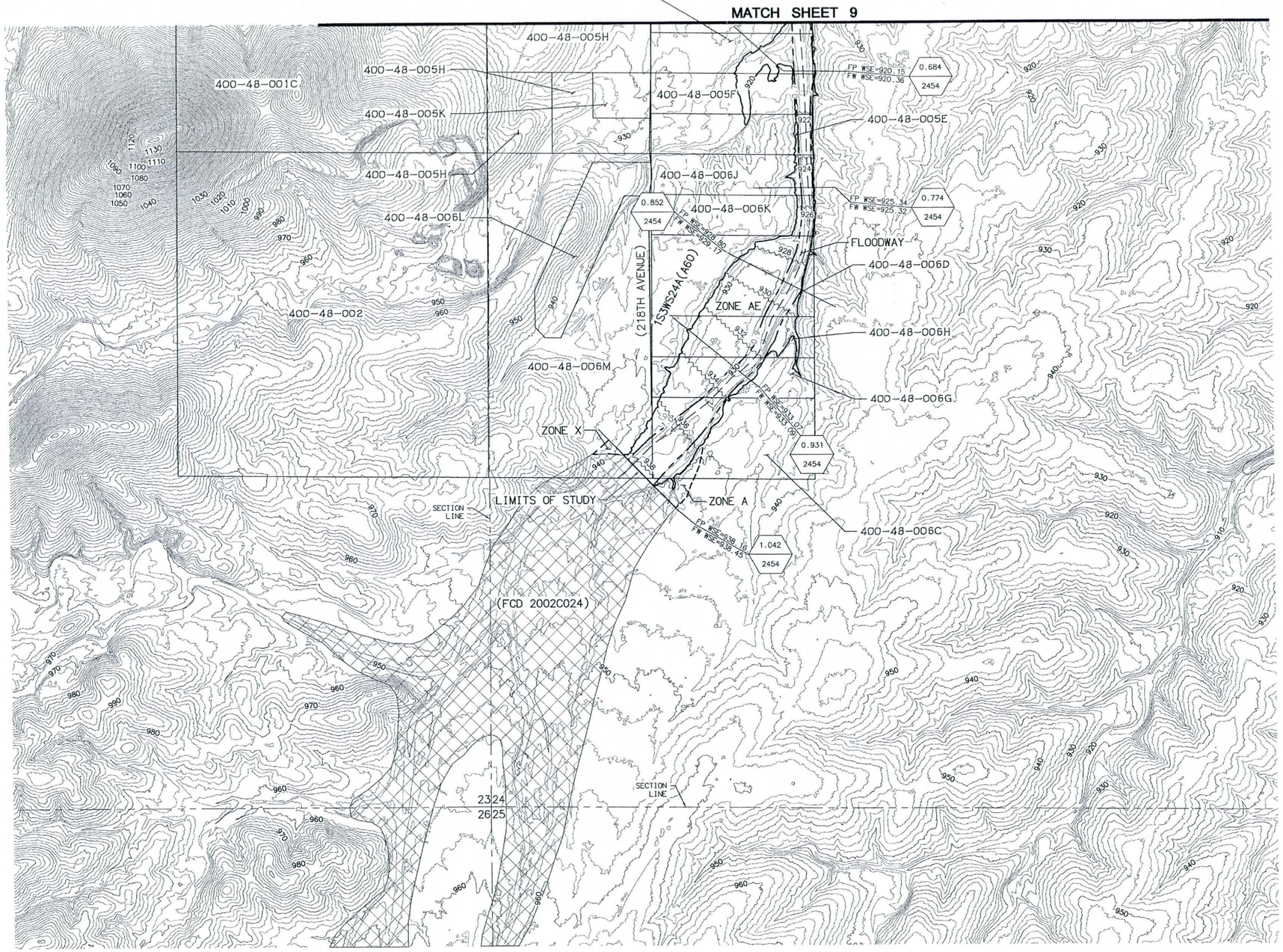
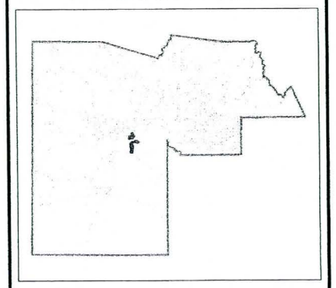


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4
FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600
SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) — WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 — EXISTING CONTOUR
- 1700 — BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS
FLOODPLAIN WORK MAP

RBF CONSULTING
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2929 NORTH CENTRAL AVENUE, SUITE 800
PHOENIX, ARIZONA 85012-2794
602.279.1234 ■ FAX 602.279.1411 ■ www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/28/12 ARIZONA, U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'
PLAN DATE: NOV/2012
PROJECT NUMBER: 45104771
SHEET NO. 10 OF 15 SHEETS

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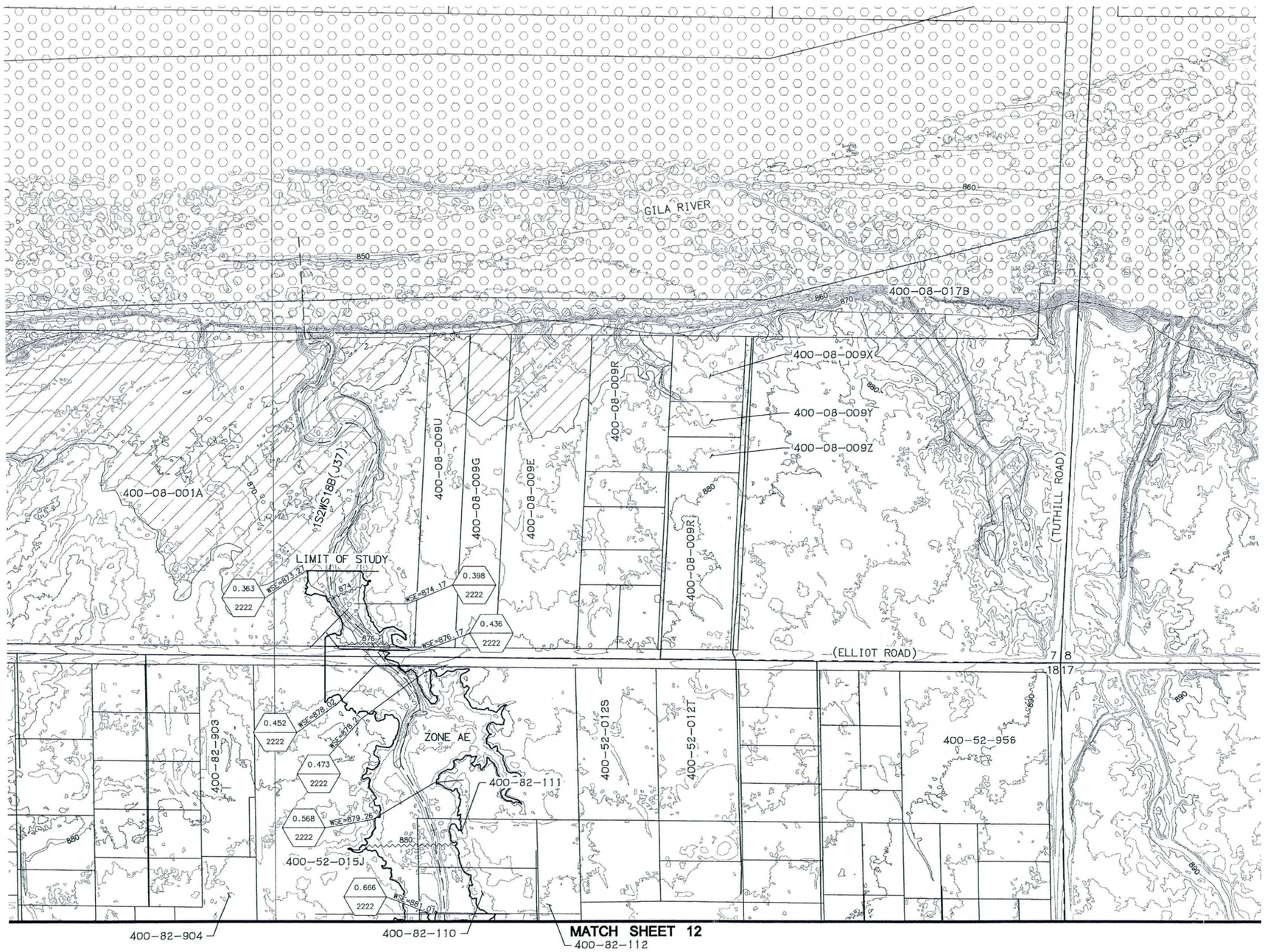
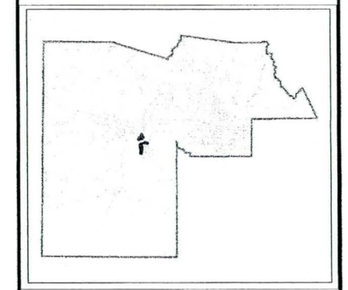


SCALE: 1"=200'

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600

SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) — WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 — EXISTING CONTOUR
- 1700 — BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS FLOODPLAIN WORK MAP

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2929 NORTH CENTRAL AVENUE, SUITE 800
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Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/14/12 ARIZONA, U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'

PLAN DATE: NOV/2012

PROJECT NUMBER: 45104771

SHEET NO. 11 OF 15 SHEETS

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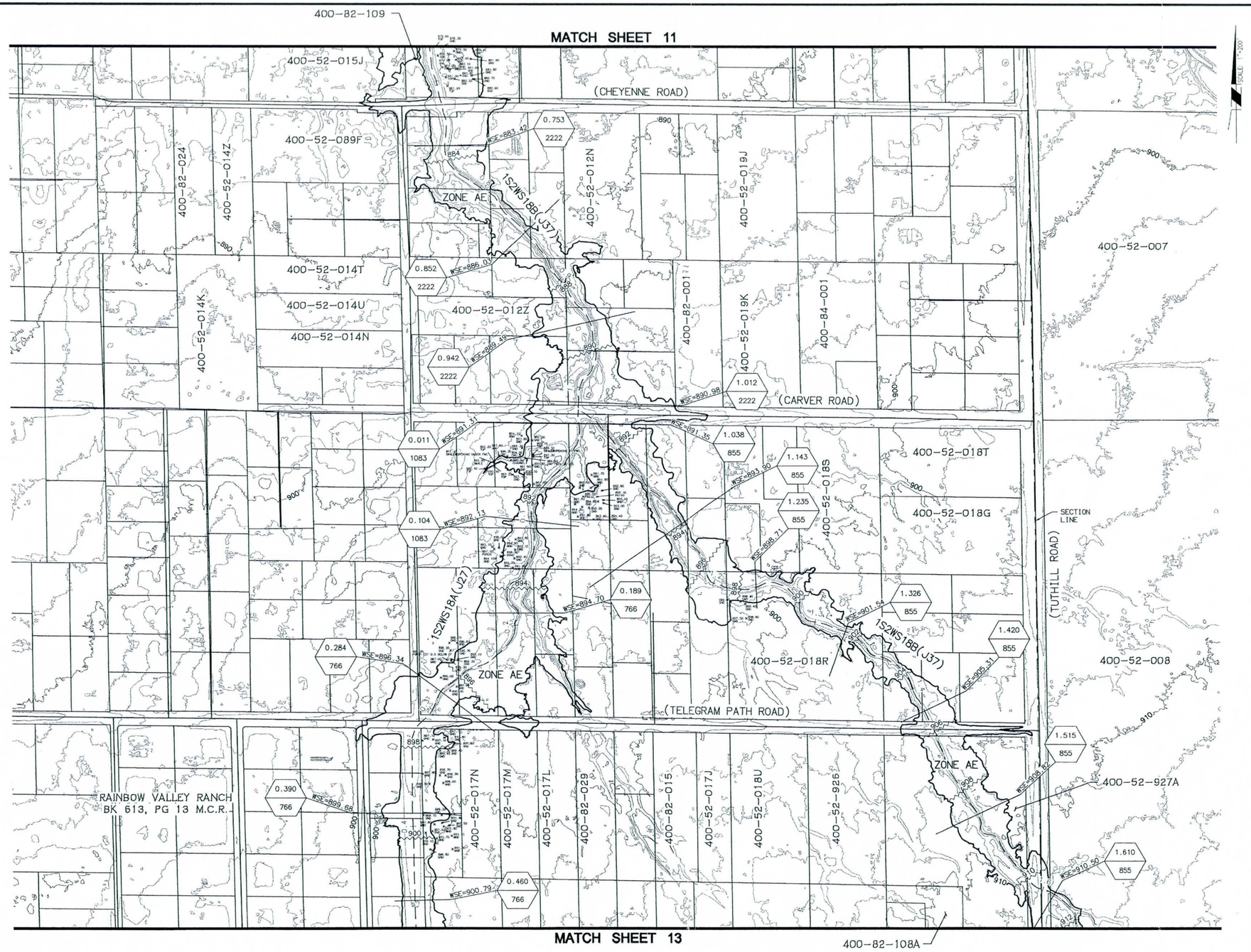
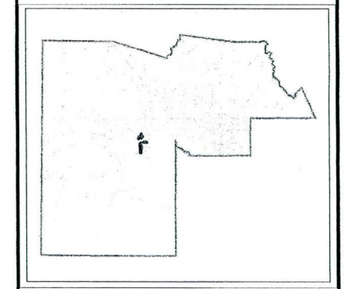


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600
SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE, CROSS SECTION, Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION
- WSE=90 SURVEY POINT

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS FLOODPLAIN WORK MAP

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
2929 NORTH CENTRAL AVENUE, SUITE 800
PHOENIX, ARIZONA 85012-2794
602.279.1234 • FAX 602.279.1413 • www.RBF.com

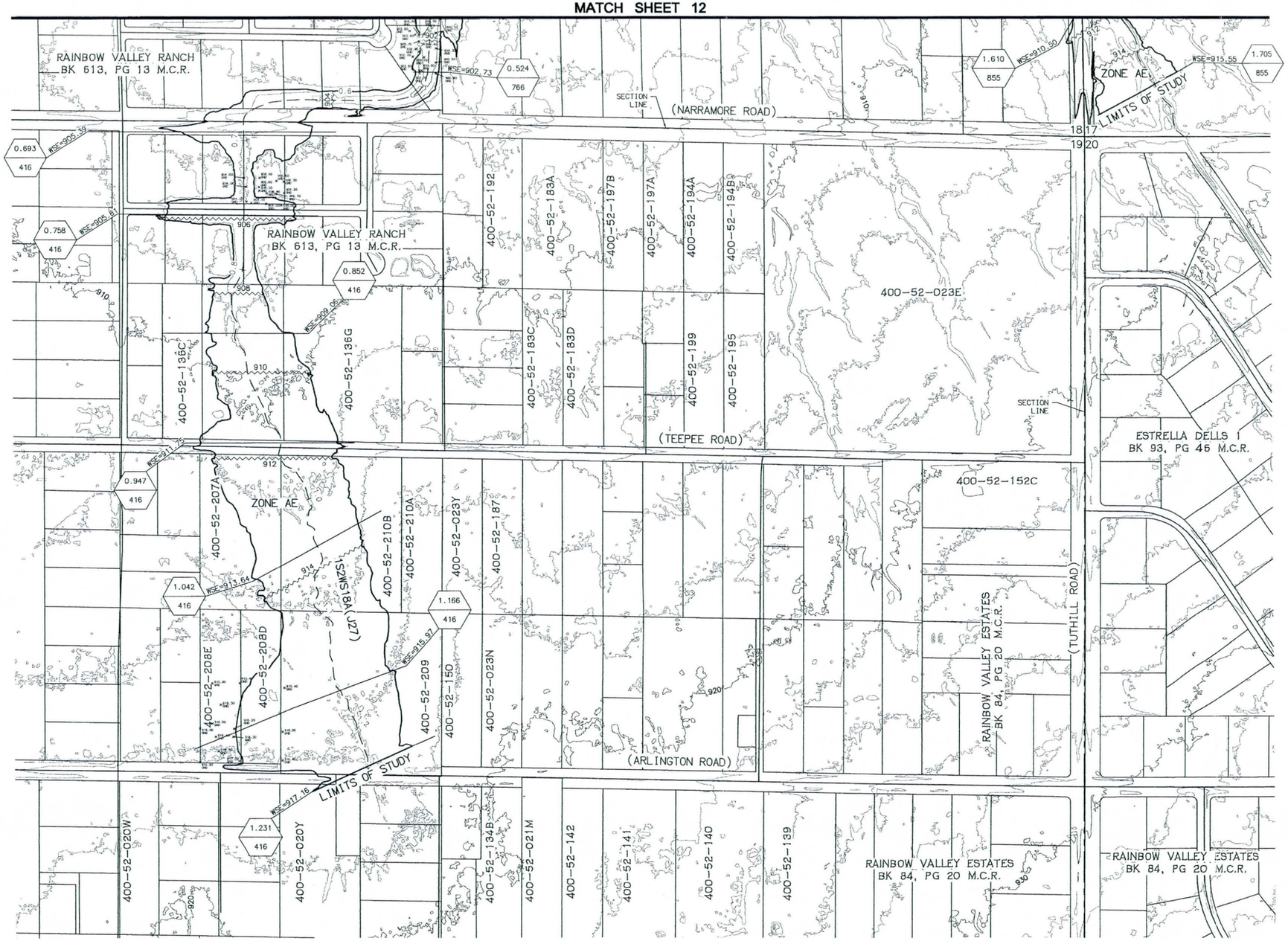
Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/16/12 ARIZONA, U.S.A. Nathan Ford Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

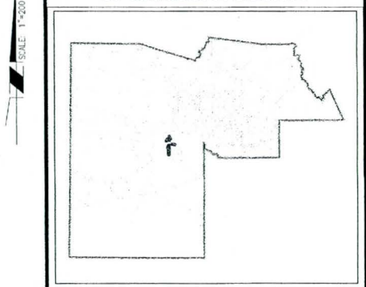
DRAWING SCALE(S): 1" = 200'
PLAN DATE: NOV/2012
PROJECT NUMBER: 45104771
SHEET NO. 12 OF 15 SHEETS

H:\PDATA\45104771\CADD\STRMWATER\DLV\RAINBOW VALLEY\4771-SW-012.DWG DPEARCE 11/20/12 11:30 am

MATCH SHEET 12



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4
FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600
SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION
- SURVEY POINT

NOTE:
THE PARCEL BOUNDARIES AND APN'S ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY. THE EXACT RELATIONSHIPS OF PARCELS AND APN'S SHOULD BE INDEPENDENTLY RESEARCHED AND VERIFIED.

NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS
FLOODPLAIN WORK MAP

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2929 NORTH CENTRAL AVENUE, SUITE 800
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Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/20/12 ARIZONA U.S.A. Nathan Ford Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'
PLAN DATE: NOV/2012
PROJECT NUMBER: 45104771
SHEET NO. 13 OF 15 SHEETS

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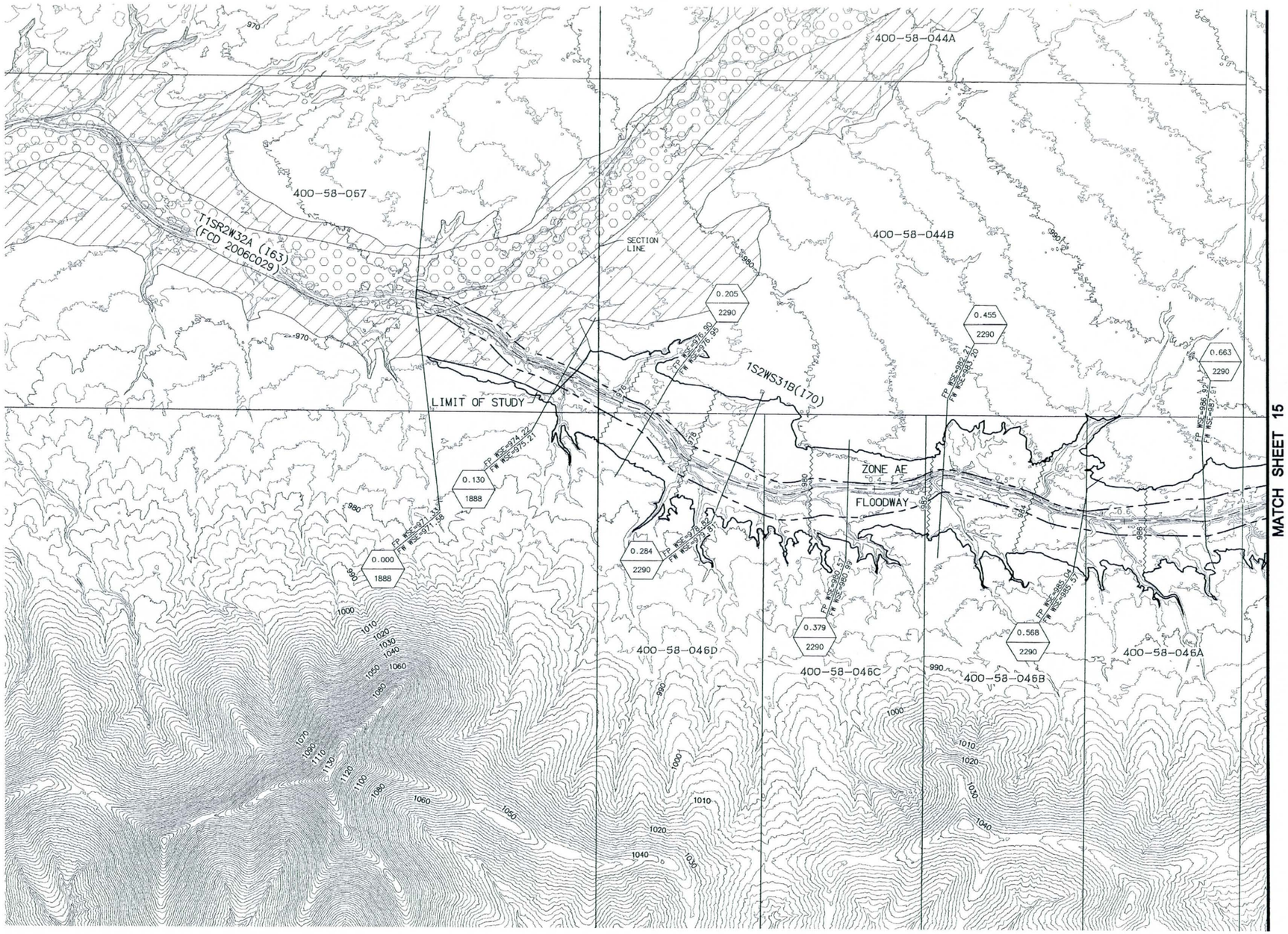
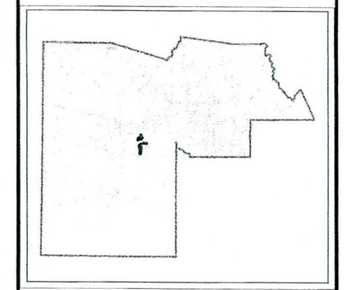


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600

SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) — WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 — EXISTING CONTOUR
- 1700 — BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS FLOODPLAIN WORK MAP

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Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/30/12 ARIZONA, U.S.A. Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'

PLAN DATE: NOV/2012

PROJECT NUMBER: 45104771

SHEET NO. 14 OF 15 SHEETS

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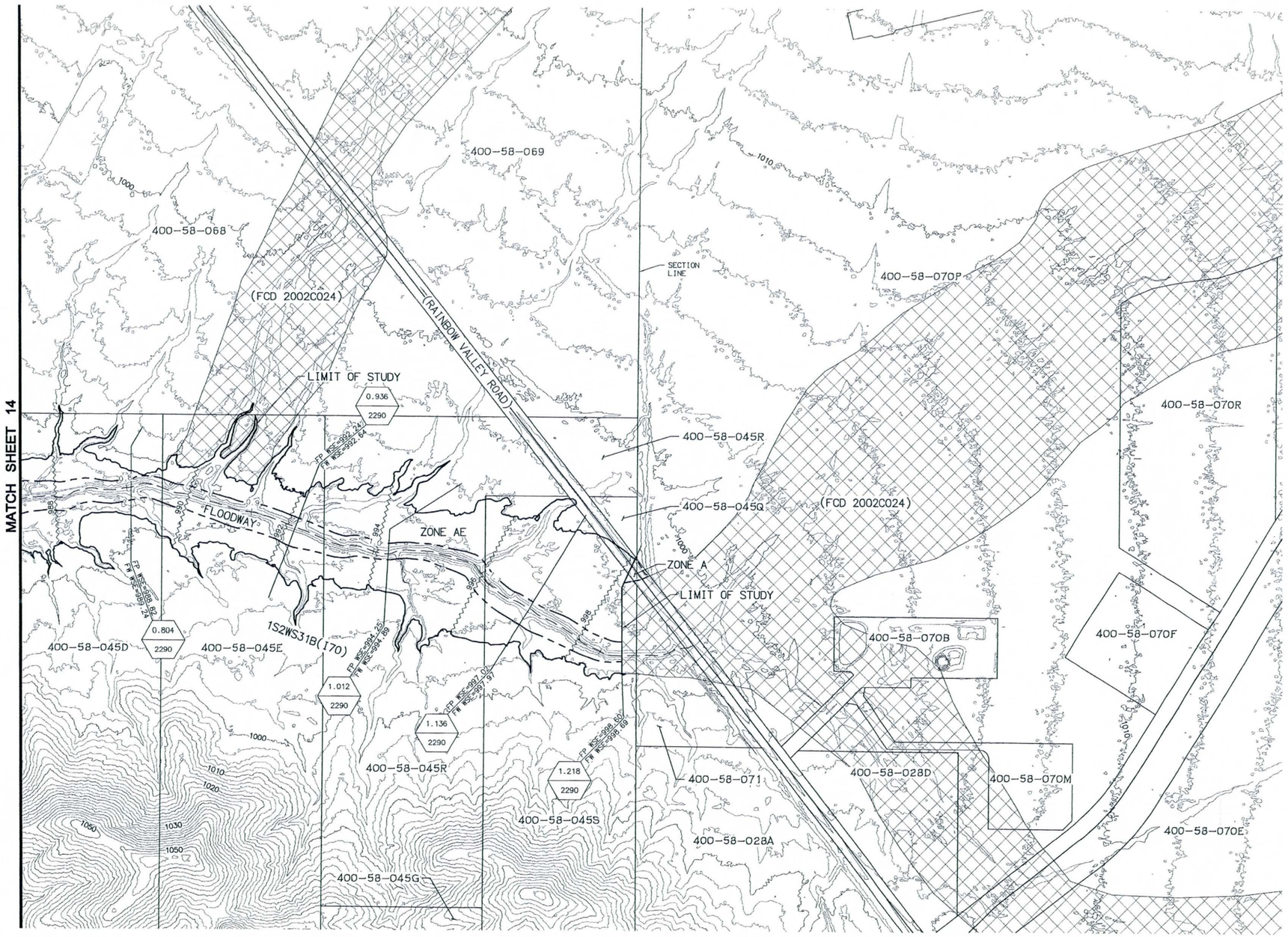
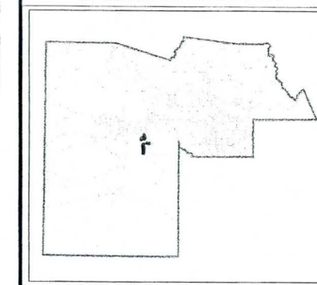


FLOOD CONTROL DISTRICT OF MARICOPA COUNTY



RAINBOW VALLEY ADMP AREAS 1-4 FLOODPLAIN DELINEATION STUDY

200 100 0 200 400 600

SCALE: 1"=200'

LEGEND

- EXISTING ZONE A
- EXISTING ZONE AE
- EXISTING FLOODWAY
- HYDRAULIC BASE LINE
- 1S2WS18B(J37) WASH I.D.
- 0.189 / 1156 — STATION RIVER MILE / CROSS SECTION / Q100 (CFS)
- CROSS SECTIONS
- ZONE A FLOODPLAIN
- ZONE AE FLOODPLAIN
- ZONE X FLOODPLAIN
- FLOODWAY
- 1700 EXISTING CONTOUR
- 1700 BASE FLOOD ELEVATION

NOTE:
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NO.	BY	DESCRIPTION	APP'D	DATE

REVISIONS

RAINBOW VALLEY ADMP AREAS 1-4 FDS FLOODPLAIN WORK MAP

RBF CONSULTING
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2929 NORTH CENTRAL AVENUE, SUITE 600
PHOENIX, ARIZONA 85012-2794
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Registered Professional Engineer (Civil) CERTIFICATE NO. 40054 NATHAN E. FORD Date Signed 11/30/12 ARIZONA, U.S.A. Nathan Ford Expires 12/31/12

LAYOUT	DRAFTED	CHECKED
NEF	DLP	NEF

DRAWING SCALE(S): 1" = 200'

PLAN DATE: NOV/2012

PROJECT NUMBER: 45104771

SHEET NO. 15 OF 15 SHEETS

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