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

         1      ID   PINE CREEK DRAINAGE BASIN - 24HR, FULL DEVELOPED CONDITION (TYPE IIa5 YEAR)
         2      ID   FILE:PCDBPSD5.DAT
         3      ID   FULLY DEVELOPED CONDITION MODEL
         4      ID   998 REVISION
         5      ID   NOTE: THE DIVERSION ROUTINES WERE REMOVED FROM THE MODEL FOR THE 5 YR STORM
         6      ID   NOTE: THE OUTFLOW CURVE FOR THE SUMMER FIELD DETENTION POND WAS MODIFIED
         7      ID   SLIGHTLY TO ALLOW THE 5 YR MODEL TO RUN.
         8      ID   CN VALUES HAVE BEEN ADJUSTED TO PRODUCE PEAK 100 YEAR FLOW RATES SIMILAR TO
         9      ID   100 YEAR FLOW RATES PRODUCED BY RATIONAL METHOD.
        10      ID   ********************************************************************************
        11      ID   BEGIN CALCULATIONS IN THE PINE CREEK NORTH FORK WATERSHED
        12      ID   ********************************************************************************
* FREE ***
                *DIAGRAM
        13      IT       3       0       0     300
        14      IO       5

        15      KK  SB-PN1
        16      KM   COMPUTE HYDROGRAPH FOR BASIN PN1
        17      BA    .164
        18      IN      15
        19      PB     2.6
        20      PC    0000   .0005   .0015   .0030   .0045   .0060   .0080   .0100   .0120   .0143
        21      PC   .0165   .0188   .0210   .0233   .0255   .0278   .0320   .0390   .0460   .0530
        22      PC   .0600   .0750   .1000   .4000   .7000   .7250   .7500   .7650   .7800   .7900
        23      PC   .8000   .8100   .8200   .8250   .8300   .8350   .8400   .8450   .8500   .8550
        24      PC   .8600   .8638   .8675   .8713   .8750   .8788   .8825   .8863   .8900   .8938
        25      PC   .8975   .9013   .9050   .9083   .9115   .9148   .9180   .9210   .9240   .9270
        26      PC   .9300   .9325   .9350   .9375   .9400   .9425   .9450   .9475   .9500   .9525
        27      PC   .9550   .9575   .9600   .9625   .9650   .9675   .9700   .9725   .9750   .9775
        28      PC   .9800   .9813   .9825   .9838   .9850   .9863   .9875   .9888   .9900   .9913
        29      PC   .9925   .9938   .9950   .9963   .9975   .9988  1.000
        30      LS       0    80.2
        31      UD    .188

        32      KK  SB-PN2
        33      KM   COMPUTE HYDROGRAPH FOR BASIN PN2
        34      BA    .149
        35      LS       0      79
        36      UD    .192

        37      KK  RT-PN2
        38      KM   ROUTE FLOW FROM PN2 TO AP1
        39      RD    1000     .03    .013           CIRC     4.5

        40      KK     AP1
        41      KM   COMBINE THE FLOW FROM BASIN PN1 TO THE ROUTED FLOW FROM BASIN PN2 AT AP1
        42      HC       2

        43      KK  RT-AP1
        44      KM   ROUTE AP1 TO AP2
        45      RD    2600    .033    .013           CIRC       6
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 46       KK  SB-PN3
 47       KM   COMPUTE HYDROGRAPH FOR BASIN PN3
 48       BA    .083
 49       LS      0    85.8
 50       UD    .196

 51       KK     AP2
 52       KM   COMBINE ROUTED FLOW FROM AP1 WITH FLOW FROM BASIN PN3
 53       HC      2

 54       KK  RT-AP2
 55       KM   ROUTE FLOW FROM AP2 TO AP3
 56       RD    800    .025    .013           CIRC       7

 57       KK  SB-PN4
 58       KM   COMPUTE HYDROGRAPH FOR BASIN PN4
 59       BA    .114
 60       LS      0    78.5
 61       UD    .185

 62       KK  RT-PN4
 63       KM   ROUTE FLOW FROM BASIN PN4 TO AP3
 64       RD   1000    .040    .013           CIRC       4

 65       KK  SB-PN5
 66       KM   COMPUTE HYDROGRAPH FOR BASIN PN5
 67       BA    .074
 68       LS      0    86.2
 69       UD    .175

 70       KK     AP3
 71       KM   COMBINE ROUTED FLOW RT-PN4 WITH ROUTED FLOW RT-AP2 AND FLOW FROM BASIN PN5
 72       HC      3

 73       KK  RT-AP3
 74       KM   ROUTE FLOW FROM AP3 TO DETENTION FACILITY "G"
 75       RD   1100    .025   0.013           CIRC     8.5

 76       KK  SB-PN6
 77       KM   COMPUTE HYDROGRAPH FOR BASIN PN6
 78       BA    .146
 79       LS      0    95.0
 80       UD    .127

 81       KK   APDFG
 82       KM   COMBINE ROUTED FLOW FROM AP3 WITH FLOW FROM BASIN PN6 AT REGIONAL DETENTION
 83       KM   FACILITY "G"
 84       HC      2
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  85      KK RR-DFFG
  86      KM   ROUTE FLOW THROUGH A REGIONAL DETENTION FACILITY. ASSUME A 48" DIA OUTLET
  87      KM   WITH INVERT AT EL. 59. OUTLET Q ESTIMATED WITH BUREAU OF PUBLIC ROADS
  88      KM   NOMOGRAPH FOR INLET CONTROL OF CULVERTS. VOLUME BASED ON CONCEPTUAL
  89      KM   GRADING PLAN.
  90      KO       3       1     100
  91      RS       1    STOR       0
  92      SV       0      .1     2.8     8.0    14.1    20.9    28.4    36.6    45.5    55.1
  93      SV    65.3    76.3    88.2
  94      SE      59      60      62      64      66      68      70      72      74      76
  95      SE      78      80      82
  96      SQ       0      10      47      93     130     160     180     203     222     240
  97      SQ     262     280     295

  98      KK  RT-DFG
  99      KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM POWERS BLVD.
 100      KM   1800 FEET WEST TO DETENTION FACILITY "F"
 101      RD    1800    .023    .045            TRAP      15       3

 102      KK  SB-PN7
 103      KM   COMPUTE HYDROGRAPH FOR BASIN PN7
 104      BA    .078
 105      LS       0    74.6
 106      UD    .165

 107      KK  SB-PN8
 108      KM   COMPUTE HYDROGRAPH FOR BASIN PN8
 109      BA    .113
 110      LS       0    80.9
 111      UD    .176

 112      KK   APDFF
 113      KM   COMBINE ROUTED FLOW RT-DFG AND FLOW FROM BASINS PN7 AND PN8 AT REGIONAL
 114      KM   DETENTION FACILITY "F"
 115      HC       3

 116      KK  RR-DFF
 117      KM   ROUTE FLOW THRU A REGIONAL DETENTION FACILITY. ASSUME A 48 DIA OUTLET WITH
 118      KM   THE INVERT DEPRESSED 2' BELOW POND INVERT. OUTLET Q ESTIMATED WITH  BUREAU
 119      KM   OF PUBLIC ROADS NOMOGRAPH FOR INLET CONTROL OF CULVERTS
 120      KO       3       1     100
 121      RS       1    STOR       0
 122      SV       0       0     0.1     0.7     1.5     4.4     7.8    11.7    16.1    21.0
 123      SV    26.4
 124      SE      90      92      94      96      98     100     102     104     106     108
 125      SE     110
 126      SQ       0      22      70     112     143     170     190     210     230     250
 127      SQ     265
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  128     KK  RT-DFF
  129     KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM DETENTION
  130     KM   FACILITY "F" AT THE COLLECTOR STREET CROSSING TO AP-4 AT THE WEST SIDE OF
  131     KM   BASINS PN9 AND PN10
  132     RD    1600     .02    .045           TRAP      20       3

  133     KK  SB-PN9
  134     KM   COMPUTE HYDROGRAPH FOR BASIN PN9
  135     BA    .036
  136     LS       0    72.8
  137     UD    .170

  138     KK SB-PN10
  139     KM   COMPUTE HYDROGRAPH FOR BASIN PN10
  140     BA    .043
  141     LS       0    72.7
  142     UD    .141

  143     KK     AP4
  144     KM   COMBINE ROUTED FLOW RT-DFF WITH FLOW FROM BASINS PN9 AND PN10
  145     HC       3

  146     KK  RT-AP4
  147     KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM AP4
  148     KM   TO DETENTION FACILITY "E" AT THE COLLECTOR STREET CROSSING
  149     RD    1400    .032    .045           TRAP      20       3

  150     KK SB-PN11
  151     KM   COMPUTE HYDROGRAPH FOR BASIN PN11
  152     BA   0.079
  153     LS       0    76.7
  154     UD    .189

  155     KK SB-PN12
  156     KM   COMPUTE HYDROGRAPH FOR BASIN PN12
  157     BA   0.039
  158     LS       0    68.2
  159     UD    .129

  160     KK SB-PN13
  161     KM   COMPUTE HYDROGRAPH FOR BASIN PN13
  162     BA   0.127
  163     LS       0      74
  164     UD    .195

  165     KK   APDFE
  166     KM   COMBINE ROUTED FLOW RT-AP4 WITH FLOW FROM BASINS PN11, PN12, AND PN13
  167     KM   AT REGIONAL DETENTION FACILITY "E"
  168     HC       4
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  169     KK  RR-DFE
  170     KM   NOTE: THE INPUT POND VOLUME REFLECTS THE DESIGN POND VOLUME ON 7-23-98
  171     KM   ROUTE FLOW THRU A DETENTION FACILITY. ASSUME A 54" DIA OUTLET WITH
  172     KM   THE INVERT DEPRESSED 2' BELOW POND INVERT (INV EL=84. OUTLET Q ESTIMATED
  173     KM   WITH BUREAU OF PUBLIC ROADS NOMOGRAPH FOR INLET CONTROL OF CULVERTS
  174     KM   DISCHARGE ABOVE EL 100.3 INCLUDES FLOW OVER EMERGENCY SPILLWAY
  175     KM   SCALE 1
  176     KO       3       1
  177     RS       1    STOR       0
  178     SV       0       0    1.25    3.91    6.93   10.31   14.07   18.24   22.83   27.87
  179     SE     784     786     788     790     792     794     796     798     800     802
  180     SQ       0      25      80     136     173     210     240     263     280    1431

  181     KK  RT-DFE
  182     KM   ROUTE THE OUTFLOW FROM DETENTION FACILITY "G" IN A STORM DRAIN TO AP-5
  183     RD    1800    .025    .013            CIRC     4.5

  184     KK SB-PN14
  185     KM   COMPUTE HYDROGRAPH FOR BASIN PN14
  186     BA    .027
  187     LS       0    74.3
  188     UD    .157

  189     KK RT-PN14
  190     KM   ROUTE FLOW FROM BASIN PN14 IN A STORM DRAIN TO AP5
  191     RD    1400    .055    .013            CIRC       2

  192     KK SB-PN15
  193     KM   COMPUTE HYDROGRAPH FOR BASIN PN15
  194     BA    .074
  195     LS       0    72.7
  196     UD    .186

  197     KK     AP5
  198     KM   COMBINE ROUTED FLOW RT-PN14 TO FLOW FROM BASIN PN15
  199     HC       3

  200     KK  RT-AP5
  201     KM   ROUTE THE FLOW AT AP5 TO AP5A AT THE CONFLUENCE OF THE FLOWS FROM THE
  202     KM   NORTH AND SOUTH FORKS OF PINE CREEK
  203     RD     400    .025    .013            CIRC       5
  204     KM   **************************************************************************
  205     KM   ***** BEGIN CALCULATIONS FOR THE SOUTH FORK OF PINE CREEK WATERSHED ****
  206     KM   **************************************************************************

  207     KK  SB-PS1
  208     KM   COMPUTE HYDROGRAPH FOR BASIN PS1
  209     BA    .150
  210     LS       0    78.4
  211     UD    .205
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 212      KK  RT-PS1
 213      KM   ROUTE FLOW FROM BASIN PS1 TO REGIONAL DETENTION FACILITY "G"
 214      RD    2100     .03    .013           CIRC     4.5

 215      KK  SB-PS2
 216      KM   COMPUTE HYDROGRAPH FOR BASIN PS2
 217      BA    .154
 218      LS       0    85.2
 219      UD    .188

 220      KK  SB-PS3
 221      KM   COMPUTE HYDROGRAPH FOR BASIN PS3
 222      BA    .162
 223      LS       0    84.8
 224      UD    .205

 225      KK   APDFD
 226      KM   COMBINE ROUTED FLOW RT-PS1 TO FLOW FROM BASINS PS2 AND PS3
 227      HC       3

 228      KK  RR-DFD
 229      KM   ROUTE FLOW THRU A DETENTION FACILITY
 230      KM   ASSUME BOTTOM TO BE 240'WIDE X 590' LONG W 4:1 SIDE SLOPES
 231      KM   ASSUME A 36 DIA OUTLET WITH INVERT AT POND INVERT.
 232      KM   OUTLET Q ESTIMATED WITH ORIFICE EQUATION ASSUMING c=0.60
 233      KM   AND DOWNSTEAM STORM DRAIN IN NON PRESSURE FLOW
 234      KM   2,2,100
 235      RS       1   STOR       0
 236      KO       3       1     100
 237      SV       0     6.8    14.3    22.4    31.1    40.6    50.8    61.8
 238      SE     100     102     104     106     108     110     112     114
 239      SQ       0      18      54      72      87      99     110     120

 240      KK  RT-DFD
 241      KM   ROUTE FLOW FROM DFD TO AP-6 AT POWERS BLVD.
 242      RD    1000    .025    .013           CIRC       3

 243      KK  SB-PS4
 244      KM   COMPUTE HYDROGRAPH FOR BASIN PS4
 245      BA    .054
 246      LS       0    93.2
 247      UD    .134

 248      KK  SB-PS5
 249      KM   COMPUTE HYDROGRAPH FOR BASIN PS5
 250      BA    .066
 251      LS       0    98.0
 252      UD    .135
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  253     KK     AP6
  254     KM   COMBINE ROUTED FLOW RT-DFD WITH FLOW FROM BASINS PS4 AND PS5
  255     HC       3

  256     KK  RT-AP6
  257     KM   ROUTE FLOW FROM AP6 TO AP7 AT THE BRIARGATE BLVD./ AUSTIN BLUFFS PKWY.
  258     KM   INTERSECTION
  259     RD    2800    .025    .013           CIRC     5.5

  260     KK  SB-PS6
  261     KM   COMPUTE HYDROGRAPH FOR BASIN PS6
  262     BA    .075
  263     LS       0    86.5
  264     UD    .123

  265     KK    AP-7
  266     KM   COMBINE ROUTED FLOW RT-AP6 TO FLOW FROM BASIN PS6
  267     HC       2

  268     KK  SB-PS7
  269     KM   COMPUTE HYDROGRAPH FOR BASIN PS7
  270     BA    .089
  271     LS       0    98.0
  272     UD    .119

  273     KK    AP7A
  274     KM   COMBINE FLOW AT AP-7 TO FLOW FROM BASIN PS7
  275     HC       2

  276     KK RT-AP7A
  277     KM   ROUTE FLOW FROM AP7A TO AP8 AT THE BRIARGATE PARKWAY AND UNION BLVD.
  278     KM   INTERSECTION
  279     RD    2100    .017    .013           CIRC     7.5

  280     KK  SB-PS8
  281     KM   COMPUTE HYDROGRAPH FOR BASIN PS8
  282     BA    .122
  283     LS       0    86.0
  284     UD    .127

  285     KK     AP8
  286     KM   COMBINE ROUTED FLOW RT-AP7 TO FLOW FROM BASIN PS8 AT AP8
  287     HC       2

  288     KK  SB-PS9
  289     KM   COMPUTE HYDROGRAPH FOR BASIN PS9
  290     BA    .128
  291     LS       0    95.3
  292     UD    .130
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

293       KK     AP9
294       KM   COMBINE FLOW AT AP-8 TO FLOW FROM BASIN PS9 AT AP9
295       HC       2

296       KK SB-PS10
297       KM   COMPUTE HYDROGRAPH FOR BASIN PS10
298       BA    .038
299       LS       0    72.9
300       UD    .160

301       KK   APDFC
302       KM   COMBINE FLOW AT AP-9 TO FLOW FROM SB-PS10 IN REGIONAL DETENTION FACILITY "C"
303       KM   THIS IS THE TOTAL INFLOW TO DETENTION FACILITY "C"
304       HC       2

305       KK  RR-DFC
306       KM   ROUTE FLOW THRU A DETENTION FACILITY.  ASSUME A 48 DIA OUTLET WITH THE
307       KM   INVERT AT EL 62.  OUTLET Q ESTIMATED WITH BUREAU OF PUBLIC ROADS NOMOGRAPH
308       KM   FOR INLET CONTROL OF CULVERTS, SCALE 1.
309       KO       3       1     100
310       RS       1    STOR       0
311       SV       0    2.73    9.72   18.56   28.03   38.15   48.95   60.45   72.75   85.85
312       SV   99.66
313       SE      62      64      66      68      70      72      74      76      78      80
314       SE      82
315       SQ       0      23      70     110     140     168     190     215     232     245
316       SQ     258

317       KK  RT-DFC
318       KM   ROUTE OUTFLOW FROM POND "C" WEST DOWN A STORM DRAIN IN BRIARGATE PKWY.
319       KM   TO AP10 AT DETENTION FACILITY "B"
320       RD    2400    .035    .013            CIRC       4

321       KK SB-PS11
322       KM   COMPUTE HYDROGRAPH FOR BASIN PS11
323       BA    .056
324       LS       0    80.3
325       UD    .172

326       KK    AP10
327       KM   COMBINE ROUTED FLOW RT-DFC TO FLOW FROM SB-PS11
328       HC       2

329       KK SB-PS12
330       KM   COMPUTE HYDROGRAPH FOR BASIN PS12
331       BA    .153
332       LS       0    69.0
333       UD    .233
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

334       KK   APDFB
335       KM   COMBINE FLOW AT AP10 TO FLOW FROM BASIN PS12
336       HC      2

337       KK  RR-DFB
338       KM   ROUTE FLOW THROUGH REGIONAL DETENTION POND "B"
339       KM   THIS VOLUME REFLECTS THE DESIGN VOLUME PER PRELIMINARY PLANS ON 7-23-98
340       KM   WITH 54" DIA OUTLET SET AT INVERT ELEV. 70.2. OUTLET Q ESTIMATED WITH
341       KM   BUREAU OF PUBLIC ROADS NOMO GRAPH FOR INLET CONTROL OF CONCRETE PIPE
342       KM   DISCHARGE ABOVE 87.6 INCLUDES FLOW OVER 80' LONG EMERGENCY SPILLWAY
343       KM   SCALE 1
344       KO      3      1
345       RS      1   STOR      0
346       SV      0   0.06   1.17   3.30   5.82   8.73  12.07  15.85  20.07  23.60
347       SV  24.76  29.96
348       SE   71.2   72.0     74     76     78     80     82     84     86   87.6
349       SE     88     90
350       SQ      0     22     73    130    169    202    236    260    285    301
351       SQ    371   1222

352       KK  RT-DFB
353       KM   ROUTE FLOW 1000 LF NORTHWEST IN A STORM DRAIN FROM DETENTION FACILITY "B"
354       KM   TO AP-11
355       RD   1000   .021   .013          CIRC    4.5

356       KK SB-PS13
357       KM   COMPUTE HYDROGRAPH FOR BASIN PS13
358       BA   .065
359       LS      0   74.1
360       UD   .149

361       KK   AP11
362       KM   COMBINE ROUTED FLOW RT-DFB TO FLOW FROM BASIN PS13 AT AP11
363       HC      2

364       KK RT-AP11
365       KM   ROUTE FLOW 600 LF NORTHWEST IN A STORM DRAIN FROM AP11 TO AP5A (THE
366       KM   CONFLUENCE OF FLOWS FROM THE NORTH AND SOUTH FORKS OF PINE CREEK)
367       RD    600   .021   .013          CIRC      5

368       KK   AP5A
369       KM   COMBINE ROUTED FLOW AP5 (FLOW FROM THE NORTH FORK OF PINE CREEK) TO ROUTED
370       KM   FLOW RT-AP11 (FLOW FROM THE SOUTH FORK OF PINE CREEK)
371       HC      2

372       KK RT-AP5A
373       KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL 1300 FEET DOWN THE CHANNEL FROM
374       KM   AP5A NEAR THE HISTORIC CONFLUENCE OF PINE CREEK TO AP12 AT THE CONFLUENCE
375       KM   OF THE MAIN CHANNEL AND THE LEXINGTON DRIVE STORM DRAIN OUTFALL. USE AN
376       KM   APPROXIMATE AVERAGE CHANNEL SECTION AND SLOPE FOR ROUTING.
377       RD   1300   .023   .045          TRAP     50      2
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  378     KK  SB-PM1
  379     KM   COMPUTE HYDROGRAPH FOR BASIN PM1
  380     BA    .054
  381     LS       0    78.5
  382     UD    .203

  383     KK  RT-PM1
  384     KM   ROUTE THE FLOW FROM BASIN PM1 1200 LF NORTH IN THE LEXINGTON DR. S.D. TO
  385     KM   PINE CREEK MAIN CHANNEL.
  386     RD    1200     .08    .013             CIR     3.5

  387     KK  SB-PM2
  388     KM   COMPUTE HYDROGRAPH FOR BASIN PM2, AN AREA OF THE GOLF COURSE
  389     BA    .154
  390     LS       0    66.0
  391     UD    .310

  392     KK  SB-PM3
  393     KM   COMPUTE HYDROGRAPH FOR BASIN PM3
  394     BA    .067
  395     LS       0    73.5
  396     UD    .248

  397     KK    AP12
  398     KM   COMBINE ROUTED FLOW RT-PM1 WITH THE ROUTED FLOW IN PINE CREEK MAIN CHANNEL
  399     KM   AND THE FLOW FROM BASINS PM2 AND PM3
  400     HC       4

  401     KK RT-AP12
  402     KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM AP12 NEAR THE
  403     KM   OUTFALL OF LEXINGTON DRIVE STORM DRAIN TO THE CROSSING AT CHAPEL HILLS DRIVE
  404     KM   USE AN APPROXIMATE AVERAGE CHANNEL SECTION AND SLOPE FOR ROUTING.
  405     RD    1600    .018    .045            TRAP      30       2

  406     KK  SB-PM4
  407     KM   COMPUTE HYDROGRAPH FOR BASIN PM4
  408     BA    .111
  409     LS       0    71.9
  410     UD    .170

  411     KK    AP13
  412     KM   COMBINE FLOW FROM BASIN PM4 TO THE ROUTED FLOW RT-AP12 IN PINE CREEK MAIN
  413     KM   CHANNEL ON THE EAST SIDE OF THE CHAPEL HILLS DRIVE CROSSING
  414     HC       2
  415     KM   ********************************************************************************
  416     KM   ********BEGIN SOUTH CHAPEL HILLS DRIVE STORM DRAIN WATERSHED*******************
  417     KM   ********************************************************************************

  418     KK  SB-CS1
  419     KM   COMPUTE HYDROGRAPH FOR BASIN CS1
  420     BA    .053
  421     LS       0    73.6
  422     UD    .181
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  423     KK  RT-CS1
  424     KM   ROUTE FLOW 1300 LF WEST IN DYNAMIC DR.  ASSUME BULK OF FLOW IS ON THE SURFACE
  425     RD    1300    .021    .013            TRAP      32     .01

  426     KK  SB-CS2
  427     KM   COMPUTE HYDROGRAPH FOR BASIN CS1
  428     BA    .070
  429     LS       0    98.0
  430     UD    .101

  431     KKRR-DFCS2
  432     KM   ROUTE FLOW THRU AN ASSUMED DETENTION FACILITY TO REFLECT DETENTION OF 1.6cfs
  433     KM   /ACRE FROM THE LI/O PROPERTY AS ASSUMED IN THE MDDP FOR BRIARGATE BUSINESS
  434     KM   CAMPUS. BECAUSE THE DISCHARGE CONFIGURATION IS UNKNOWN AT THIS TIME ASSUME
  435     KM   THAT THE PEAK DISCHARGE RATE MAY BE DISCHARGED AS SOON AS IT IS AVAILABLE AT
  436     KM   THE POND TO REFLECT POTENTIAL FREE DISCHARGE FROM A PORTION OF THE SUBBASIN
  437     KM   DISCHARGE REDUCTION ASSUMED AT 1.6 cfS x 37ac=60 cfs
  438     RS       1    STOR       0
  439     SV       0    .001       6      10
  440     SE     100     102     104     106
  441     SQ       0     194     194     194

  442     KK    AP14
  443     KM   COMBINE ROUTED FLOW RT-CS1 TO CONTROLED FLOW FROM BASIN CS2 AT THE
  444     KM   INTERSECTION OF CHAPEL HILLS DR. AND DYNAMIC DR.
  445     HC       2

  446     KK RT-AP14
  447     KM   ROUTE FLOW 1100 LF NORTH IN THE CHAPEL HILLS DR. S.D. TO BRIARGATE PKWY.
  448     KM   NOTE: THE CALCULATED 100 YEAR FLOW IS IN EXCESS OF THE FULL PIPE CAPACITY
  449     KM   OF THE STORM DRAIN BETWEEN DYNAMIC DRIVE AND BRIARGATE PARKWAY. SOME OF
  450     KM   THE FLOW MAY BE ON THE SURFACE IN CHAPEL HILLS DRIVE.
  451     RD    1100     .02    .013             CIR       4

  452     KK  SB-CS3
  453     KM   COMPUTE HYDROGRAPH FOR BASIN CH3
  454     BA    .053
  455     LS       0    84.8
  456     UD    .177

  457     KKRR-DFCS3
  458     KM   ROUTE FLOW THRU AN ASSUMED DETENTION FACILITY TO REFLECT DETENTION REDUCING
  459     KM   THE PEAK 100YR FLOW RATE FROM THE 9 ACRES OF THE BASIN THAT ARE DESIGNATED
  460     KM   AS LI/O USE AS ASSUMED IN MDDP FOR BRIARGATE BUSINESS CAMPUS.
  461     KM   BECAUSE THE DISCHARGE CONFIGURATION IS UNKNOWN AT THIS TIME ASSUME
  462     KM   THAT THE PEAK DISCHARGE RATE MAY BE DISCHARGED AS SOON AS IT IS AVAILABLE
  463     KM   AT THE POND TO REFLECT FREE DISCHARGE FROM A PORTION OF THE SUB BASIN.
  464     KM   DISCHARGE REDUCTION ASSUMED AT 1.6 cfS x 9=14 cfs
  465     RS       1    STOR       0
  466     SV       0    .001       6      10
  467     SE     100     102     104     106
  468     SQ       0     123     123     123
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

469       KK    AP15
470       KM   COMBINE ROUTED FLOW RT-AP14 WITH CONTROLLED FLOW FROM BASIN CS3 AT THE
471       KM   INTERSECTION OF CHAPEL HILLS DR. AND BRIARGATE PARKWAY. NOTE A SMALL PORTION
472       KM   OF BASIN CS3 IS LOCATED DOWNSTEAM OF THIS POINT. FOR THIS MODELING PURPOSE
473       KM   THIS IS CONSIDERED INSIGNIFICANT.
474       HC       2

475       KK RT-AP15
476       KM   ROUTE FLOW 1400 LF NORTH IN THE CHAPEL HILLS DR. S.D.
477       KM   NOTE: THE CALCULATED 100 YEAR FLOW IS IN EXCESS OF THE FULL PIPE CAPACITY
478       KM   OF THE STORM DRAIN BETWEEN BRIARGATE PARKWAY AND PINE CREEK. SOME OF
479       KM   THE FLOW MAY BE ON THE SURFACE IN CHAPEL HILLS DRIVE. A SMALL PORTION OF
480       KM   THE SURFACE FLOW MAY BE DIVERTED DOWN BRIARGATE PARKWAY, BUT FOR THE PURPOSE
481       KM   OF THIS ANALYSIS ALL OF THE FLOW FROM THE CHAPEL HILLS DRIVE/BRIARGATE PKY.
482       KM   INTERSECTION IS ASSUMED TO REACH PINE CREEK AT CHAPEL HILLS DRIVE.
483       RD    1400    .045    .013            CIR     4.5

484       KK  SB-CS4
485       KM   COMPUTE HYDROGRAPH FOR BASIN CS4
486       BA    .053
487       LS       0    95.5
488       UD    .101

489       KK RR-DFVC
490       KM   ROUTE FLOW THRU THE PROPOSED VILLAGE CENTER DETENTION FACILITY
491       KM   POND GRADING PER THE PRELIMINARY GRADING SHOWN IN THE MDDP FOR VILLAGE
492       KM   CENTER. DISCHARGE ASSUMES USE OF THE EXISTING 18" DIAMETER STUB.
493       KM   WITH THE INVERT SET AT ELEVATION 73. BUREAU OF PUBLIC ROADS NOMOGRAPH
494       KM   USED TO ESTIMATE OUTFLOW RATES ASSUMING INLET CONTROL.
495       RS       1    STOR       0
496       SV     000    .032    1.67    3.23    5.00    7.00
497       SE      73      74      76      78      80      82
498       SQ       0       3      13      17      20      22

499       KK    AP16
500       KM   COMBINE ROUTED FLOW RT-AP15 WITH THE DISCHARGE FROM THE VILLAGE CENTER POND
501       HC       2

502       KK RT-AP16
503       KM   ROUTE THE FLOW IN THE CHAPEL HILLS DRIVE STORM DRAIN FROM AP16 TO AP19 IN
504       KM   PINE CREEK MAIN CHANNEL ON THE DOWNSTREAM SIDE OF THE CHAPEL HILLS DRIVE
505       KM   CROSSING
506       RD     300     .03    .013            CIR     4.5
507       KM   ********************************************************************************
508       KM   ****BEGIN CALCULATION OF THE NORTH CHAPEL HILLS DR. STORM DRAIN WATERSHED***
509       KM   ********************************************************************************

510       KK  SB-CN1
511       KM   COMPUTE RUNOFF FROM BASIN CN1 THE WATERSHED CONTRIBUTING TO THE PARK SITE AT
512       KM   CHAPEL HILLS DRIVE POND (REGIONAL DETENTION FACILITY "A").
513       BA    .145
514       LS       0    76.8
515       UD    .190
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

516       KK  RR-DFA
517       KM   ROUTE THE FLOW FROM CN1 THROUGH THE PROPOSED DETENTION POND AT THE PARK
518       KM   SITE AT CHAPEL HILLS DRIVE. STAGE STORAGE CURVE PER THE 12/22/97 GRADING PLAN
519       KM   DISCHARGE CURVE REFLECTS 12" DIAMETER OUTLET PIPE CONTROL FOR NORMAL DISCHARG
520       KM   AND A 100' LONG EMERGENGY SPILLWAY SET AT ELEVATION 6805.5
521       KO       3       1     100
522       RS       1    STOR       0
523       SV       0     .01     .22     .99    1.95    2.80    4.25    5.31    6.51   11.64
524       SV   15.36
525       SQ    2.35    2.54    3.00    3.73    4.35    4.75    5.36    5.50    8.39    9.01
526       SQ     279
527       SE  6796.6  6797.0  6798.0  6800.0  6802.0  6803.5 6803.51    6804  6804.1  6805.5
528       SE  6806.5

529       KK  RT-DFA
530       KM   ROUTE OUTFLOW FROM  REGIONAL DETENTION POND "A" DOWN THE CHAPEL HILLS STORM
531       KM   DRAIN FROM LEXINGTON DRIVE TO TREELAKE DRIVE
532       RD     930     .04    .013            CIRC     1.5

533       KK  SB-CN2
534       KM   COMPUTE RUNOFF FROM BASIN CN2
535       BA    .078
536       LS       0    75.5
537       UD    .214

538       KK    AP17
539       KM   COMBINE ROUTED FLOW RT-DFA AND FLOW FROM BASIN CN2 AT THE INTERSECTION OF
540       KM   CHAPEL HILLS DRIVE AND TREELAKE DRIVE
541       HC       2

542       KK RT-AP17
543       KM   ROUTE FLOW AT AP17 DOWN THE CHAPEL HILLS DRIVE STORM DRAIN TO MULLIGAN DR.
544       RD    1400     .05    .013            CIRC     3.5

545       KK  SB-CN3
546       KM   COMPUTE RUNOFF FROM BASIN CN3
547       BA    .043
548       LS       0    80.0
549       UD    .157

550       KK    AP18
551       KM   COMBINE ROUTED FLOW RT-AP17 TO FLOW FROM BASIN CN3 AT INTERSECTION OF CHAPEL
552       KM   HILLS DR. AND MULLIGAN DR.
553       HC       2

554       KK RT-AP18
555       KM   ROUTE FLOW AT AP18 DOWN THE CHAPEL HILLS DRIVE STORM DRAIN TO AP19 IN THE
556       KM   PINE CREEK MAIN CHANNEL ON THE DOWNSTREAM SIDE OF THE CHAPEL HILLS DRIVE
557       KM   CROSSING. NOTE A SMALL PORTION OF BASIN CHN3 IS LOCATED SOUTH OF AP18. THIS
558       KM   IS CONSIDERED INSIGNIFICANT FOR THE PURPOSE OF THIS ANALYSIS.
559       RD     600     .04    .013            CIRC     3.5
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

560       KK   AP19
561       KM   COMBINE ROUTED FLOW RT-AP18 FROM THE NORTH CHAPEL HILLS DR. STORM DRAIN
562       KM   WITH THE ROUTED FLOW RT-AP16 FROM THE SOUTH CHAPEL HILLS DRIVE STORM DRAIN
563       KM   AND THE FLOW IN PINE CREEK MAIN CHANNEL (AP13) AT THE WEST SIDE OF THE CHAPEL
564       KM   HILLS DRIVE CROSSING. FLOW THAT IS TAKEN INTO THE PINE CREEK CHANNEL FORM THE
565       KM   STREET AT THIS POINT HAS BEEN ACCOUNTED FOR IN BASINS CN3 AND CS3. THIS WAS
566       KM   DONE TO REDUCE THE COMPLEXITY OF THE MODEL.
567       HC     3

568       KK RT-AP19
569       KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL FROM AP19 AT THE CHAPEL HILLS DRIVE
570       KM   CROSSING TO AP20 AT REGIONAL DETENTION FACILITY 1 AT BRIARGATE PARKWAY AND
571       KM   HIGHWAY 83. USE AVERAGE SLOPES AND APPROXIMATE CROSS SECTIONS FOR ROUTING.
572       RD    750   .035   .045          TRAP    30      2
573       RD   1000   .025   .045          TRAP   120      2
574       RD   1400   .026   .045          TRAP    60      2

575       KK  SB-PM5
576       KM   COMPUTE HYDROGRAPH FOR BASIN PM5
577       BA    .183
578       LS      0   70.0
579       UD    .185

580       KK   AP20
581       KM   COMBINE FLOW FROM BASIN PM6 WITH THE ROUTED FLOW IN PINE CREEK
582       HC     2

583       KK  SB-PM6
584       KM   COMPUTE HYDROGRAPH FOR PM6 THE AREA BETWEEN CHAPEL HILLS DR. AND DETENTION
585       KM   FACILITY 1 BOUNDED BY THE GOLF COURSE AND BRIARGATE PARKWAY. NOTE:THE MDDP
586       KM   FOR BRIARGATE BUSINESS CAMPUS REQUIRES DETENTION IN THIS SUBBASIN. FOR THE
587       KM   PURPOSE OF THIS ANALYSIS NO DETENTION IS ASSUMED TO ALLOW THE DEVELOPER THE
588       KM   OPTION OF CONSTRUCTING LARGER CONVEYANCE FACILITIES TO DETENTION FACILITY
589       KM   No. 1 AND ALLOWING FREE DISCHARGE FROM THE BASIN.
590       BA    .088
591       LS      0     98
592       UD    .110

593       KK   AP21
594       KM   COMBINE FLOW FROM PM6 WITH THE FLOW IN PINE CREEK AT AP21 FOR THE TOTAL FLOW
595       KM   IN PINE CREEK CHANNEL AS IT ENTERS DETENTION FACILITY No 1
596       HC     2

597       KK  SB-PM7
598       KM   COMPUTE HYDROGRAPH FOR BASIN PM7 THE AREA NORTH OF DETENTION FACILITY 1
599       KM   NOTE: THE MDDP FOR THE BRIARGATE BUSINESS CAMPUS REQUIRES DETENTION IN
600       KM   THE NON RESIDENTIAL PORTIONS OF THIS AREA. FOR THE PURPOSE OF THIS ANALYSIS
601       KM   FREE DISCHARGE FROM THE BASIN IS ASSUMED. THE RESIDENTIAL PORTION OF THE
602       KM   BASIN LOCATED IN OUTSIDE THE CITY LIMITS IS ASSUMED TO BE FULLY DEVELOPED
603       KM   AS 1 DU PER ACRE RESIDENTIAL.
604       BA    .138
605       LS      0   76.3
606       UD    .353
607       KM   ********************************************************************************
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

608       KM   ****BEGIN CALCULATIONS FOR THE FOCUS ON THE FAMILY STORM DRAIN WATERSHED****
609       KM   ********************************************************************************

610       KK   SB-F1
611       KM   COMPUTE HYDROGRAPH FOR BASIN F1
612       BA    .119
613       LS       0    78.3
614       UD    .208

615       KK  RT-F1P
616       KM   ROUTE FLOW IN THE STORM DRAIN 1300 LF WEST FROM THE SAG PT. IN LEXINGTON
617       KM   DRIVE TO SUMMER FIELD POND
618       RD    1300    .036    .013            CIRC       3

619       KK   SB-F2
620       KM   COMPUTE HYDROGRAPH FOR BASIN F2
621       BA    .039
622       LS       0      74
623       UD    .171

624       KK AP-DFSF
625       KM   COMBINE ROUTED FLOW RT-F1P WITH FLOW FROM F2 AT THE SUMMER
626       KM   FIELD POND. THIS IS THE TOTAL FLOW TO THE POND
627       HC       2

628       KK RR-DFSF
629       KM   ROUTE THE FLOW AT AP-DFSF THROUGH THE SUMMER FIELD DETENTION BASIN.
630       KM   THE INFLOW/OUTFLOW S.D. FOR THIS FACILITY IS BURIED BELOW THE POND BOTTOM.
631       KM   THE POND FILLS WHEN THE CAPACITY OF THE DOWNSTREAM REACH OF S.D. IS
632       KM   EXCEEDED. THIS CONFIGURATION PRESENTS A COMPLEX HYDRAULIC PROBLEM. IT IS
633       KM   ASSUMED THAT UNTIL INFLOW >120cfs FLOW WILL PASS THROUGH THE STORM DRAIN.
634       KM   WHEN INFLOW > 120cfs BACKWATER WILL FORM AT THE OUTLET AND THE LID ON THE
635       KM   UPSTREAM MANHOLE WILL LIKELY BE LIFTED OFF AND SOME FLOW WILL ENTER THE POND
636       KM   FROM THAT POINT. WHEN INFLOW>120cfs IT IS ASSUMED THAT THE HEAD LOSS AT
637       KM   THE OUTLET WILL BE APPOXIMATELY 1*VELOCITY HEAD FOR THE PURPOSE OF
638       KM   CALCULATING THE DISCHARGE CURVE.
639       KM   NOTE: THE OUTFLOW CURVE WAS MODIFIED IN THIS MODEL TO ALLOW THE 5 YEAR
640       KM   STORM TO RUN. AT ELEV. 92 SQ OF 80 WAS SUBSTITUTED FOR 120. THIS CHANGE
641       KM   IS CONSIDERED INSIGNIFICANT AT THE 5 YEAR Q
642       KO       3       1     100
643       RS       1    STOR       0
644       SV       0    0.57    4.63    6.87   10.32
645       SE      92      94      96      98     100
646       SQ      80     126     131     137     144

647       KK RT-DFSF
648       KM   ROUTE OUTFLOW FROM THE DETENTION BASIN IN A 48" S.D. TO RESEARCH PKWY.
649       RD     800    .018    .013            CIRC       4

650       KK   SB-F3
651       KM   COMPUTE HYDROGRAPH FOR BASIN F3
652       BA    .114
653       LS       0    77.0
654       UD    .215
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

655       KK    AP22
656       KM    COMBINE ROUTED FLOW RT-DTSF TO FLOW FROM BASIN F3 AT THE INTERSECTION OF
657       KM    RESEARCH PARKWAY AND SUMMERSET DRIVE.
658       HC       2

659       KKRT-AP22P
660       KM    ROUTE THE S.D.FLOW FROM THE BRIARGATE PKWY/ SUMMERSET INTERSECTION TO THE
661       KM    INTERSECTION OF RESEARCH PKWY. AND CHAPEL HILLS DR.
662       RD    2100     .02    .013           CIRC       5

663       KK    SB-F4
664       KM    COMPUTE HYDROGRAPH FOR BASIN F4
665       BA     .038
666       LS        0    83.0
667       UD     .197

668       KK RR-DFF4
669       KM    ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
670       KM    RATE OF 1.6 CFS/ACRE FROM THE 11.5 AC THAT WILL BE DEVELOPED AS LI/O
671       KM    DISCHARGE REDUCTION PER ACRE IS DETERMINED PER THE RATE AND AREA INCLUDED
672       KM    IN THE MDDP FOR BRIARGATE BUSINESS CAMPUS
673       KM    THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
674       KM    THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE SITE WILL LIKELY
675       KM    FREE DISCHARGE TO THE ADJACENT STREET
676       KM    DISCHARGE REDUCTION = LI/O AREA (acres)11.5 x 1.6 cfs = 18.4 cfs
677       RS        1    STOR       0
678       SV        0    .001       6      10
679       SE      100     102     104     106
680       SQ        0    70.6    70.6    70.6

681       KK    AP23
682       KM    COMBINE ROUTED FLOW RT-AP22P TO FLOW FROM BASIN F4 AT THE INTERSECTION OF
683       KM    RESEARCH PARKWAY AND CHAPEL HILLS DR.
684       HC       2

685       KKRT-AP23P
686       KM    ROUTE THE FLOW IN THE STORM DRAIN FROM THE RESEARCH PKWY/CHAPEL HILLS DR.
687       KM    INTERSECTION TO THE INTERSECTION OF EXPLORER DRIVE AND THE FOCUS ON THE
688       KM    FAMILY S.D.
689       RD    2100    .044    .013           CIRC       4

690       KK    SB-F5
691       KM    COMPUTE HYDROGRAPH FOR BASIN F5
692       BA     .064
693       LS        0    95.5
694       UD     .121

695       KK RR-DFF5
696       KM    ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
697       KM    RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
698       KM    AND HISTORIC PEAK 100 YR FLOW RATE PER THE ORIGINAL DBPS CRITERIA FOR LI/O
699       KM    LAND USE. HISTORIC 100 YR PEAK ESTIMATED AT 1.5 CFS/AC. FULLY DEVELOPED 100
700       KM     YR PEAK ESTIMATED AT 5.6 CFS/AC. ESTIMATED REQUIRED DETENTION =
701       KM    (5.6-1.5)*.35*35AC=50cfs   TOTAL Qin=225cfs
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 702      KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
 703      KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
 704      KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
 705      RS       1    STOR       0
 706      SV       0    .001       6      10
 707      SE     100     102     104     106
 708      SQ       0     175     175     175

 709      KK    AP24
 710      KM   COMBINE THE ROUTED FLOW IN THE S.D.(RTAP102) TO FLOW FROM FF1
 711      HC       2

 712      KKRT-AP24P
 713      KM   ROUTE THE FLOW IN THE FOCUS STORM DRAIN FROM AP24 AT THE INTERSECTION OF
 714      KM   EXPLORER DRIVE AND THE FOCUS S.D. TO AP25 AT THE INTERSECTION OF EXPLORER
 715      KM   DRIVE & BRIARGATE PKWY
 716      RD     800    .011    .013            CIRC     5.5

 717      KK   SB-F6
 718      KM   COMPUTE HYDROGRAPH FOR BASIN F6
 719      BA    .038
 720      LS       0    98.0
 721      UD    .106

 722      KK RR-DFF6
 723      KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
 724      KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
 725      KM   AND HISTORIC PEAK 100 YR FLOW RATE. HISTORIC ESTIMATED AT 1.5 CFS/AC.
 726      KM   FULLY DEVELOPED ESTIMATED AT 6.0 CFS/AC. ESTIMATED REQUIRED DETENTION =
 727      KM   (6.0-1.5)*.35*21.5AC=34cfs   TOTAL Qin=138cfs
 728      KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
 729      KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
 730      KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
 731      RS       1    STOR       0
 732      SV       0    .001       6      10
 733      SE     100     102     104     106
 734      SQ       0     104     104     104

 735      KK   SB-F7
 736      KM   COMPUTE HYDROGRAPH FOR BASIN F7
 737      BA    .052
 738      LS       0    93.0
 739      UD    .137

 740      KK RR-DFF7
 741      KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
 742      KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
 743      KM   AND HISTORIC PEAK 100 YR FLOW RATE. HISTORIC ESTIMATED AT 1.5 CFS/AC.
 744      KM   FULLY DEVELOPED ESTIMATED AT 5.2 CFS/AC. ESTIMATED REQUIRED DETENTION =
 745      KM   (5.2-1.5)*.35*29AC=38cfs   TOTAL Qin=170cfs
 746      KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
 747      KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
 748      KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
 749      RS       1    STOR       0
 750      SV       0    .001       6      10
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 751      SE     100     102     104     106
 752      SQ       0     132     132     132

 753      KK    AP25
 754      KM   COMBINE ROUTED FLOW RT-AP25P TO CONTROLLED FLOW FROM BASINS F6 AND F7
 755      KM   AT THE INTERSECTION OF EXPLORER DR AND BRIARGATE PKWY.
 756      HC       3

 757      KKRT-AP25P
 758      KM   ROUTE THE FLOW IN THE S.D.FROM THE INTERSECTION OF EXPLORE DR. & BRIARGATE
 759      KM   PARKWAY TO DETENTION FACILITY 1 AT BRIARGATE PKWY & HIGHWAY 83
 760      RD    1250    .011    .013            CIRC     5.5

 761      KK  SB-PM8
 762      KM   COMPUTE HYDROGRAPH FOR BASIN PM8 THE PORTION OF BRIARGATE PARKWAY BETWEEN
 763      KM   EXPLORER DR. AND HIGHWAY 83
 764      BA    .014
 765      LS       0      98
 766      UD    .100

 767      KK AP-DF#1
 768      KM   ADD THE FLOW FROM THE FOCUS ON THE FAMILY STORM DRAIN, BASINS PM7 AND PM8,
 769      KM   AND FLOW IN PINE CREEK FOR THE TOTAL INFLOW TO DETENTION FACILITY 1
 770      HC       4

 771      KK RR-DF#1
 772      KM   ROUTE FLOW THRU DETENTION FACILITY NO.1. VOLUME MODIFIED TO REFLECT PROPOSED
 773      KM   ENLARGEMENT. PROPOSED ENLARGEMENT IS TO ADD A MINIMUM OF 0.7 ACRES OF SURFACE
 774      KM   AREA TO EACH OF THE CONTOURS AT OR ABOVE ELEVATION 58. OUTLET MODELED
 775      KM   ASSUMING THE TOP 7.5' OF THE ENTRANCE TO THE 10'R X 12'S HIGH BOX CULVERT IS
 776      KM   BLOCKED AND A NEW 12' WIDE OPENING IS CREATED W/ INVERT AT 67.2
 777      KM   OUTFLOW CURVE CALCULATED WITH A SPREADSHEET TREATING THE LOWER OPENING AS
 778      KM   A SUBMERGED ORIFICE WITH C=.60, h=POND DEPTH - NORMAL DEPTH IN THE OUTFALL
 779      KM   AND THE UPPER OPENING TO ELEVATION 73.0 TREATED AS A SHARP CRESTED WEIR WITH
 780      KM   A FULL LENGTH OF 12.77' (THE SKEW LENGTH) ADJUSTED 0.2h FOR END CONTRACTIONS
 781      KM   AND C=3.22+0.40(h/P) WHERE P=14.2. ABOVE ELEVATION 73.0 THE TOP OUTLET
 782      KM   STRUCTURE IS ASSUMED TO TERMINATE WITHOUT A TOP AND THUS ADDITIONAL FLOW CAN
 783      KM   OVER TOP THE SIDES AND BACK OF THE ASSUMED 3 SIDED  STRUCTURE 12.77 x 10
 784      KO       3       1
 785      RS       1    STOR       0
 786      SA       0    0.18    0.48    4.83    5.23    5.52    5.83    6.13    6.44    6.78
 787      SA    7.14    7.34    7.53    7.73    7.95
 788      SE    54.0    55.0    56.0    58.0    60.0    62.0    64.0    66.0    68.0    70.0
 789      SE    72.0    73.0    74.0    75.0    76.0
 790      SQ       0     105     194     275     344     401     451     496     560     747
 791      SQ     998    1142    1247    1750    2100

 792      KK RT-AP26
 793      KM   ROUTE THE COMBINED FLOW FROM AP26 AT BRIARGATE PARKWAY DOWN PINE CREEK TO
 794      KM   THE INTERSECTION OF PINE CREEK AND HIGHWAY 83. USE AVERAGE
 795      KM   APPROXIMATE SECTION AND SLOPE FOR ROUTING
 796      RD    1450    .019    .045            TRAP      40       2
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

797       KK  SB-PM9
798       KM   COMPUTE HYDROGRAPH FOR BASIN PM9
799       BA    .068
800       LS       0      93
801       UD    .120

802       KK    AP27
803       KM   COMBINE THE FLOW FROM BASIN PM9 AND THE ROUTED FLOW IN PINE CREEK (RT-AP26) A
804       KM   AT THE UPSTREAM SIDE  OF HIGHWAY 83.
805       HC       2

806       KK SB-PM10
807       KM   COMPUTE HYDROGRAPH FOR BASIN PM10
808       BA    .048
809       LS       0      98
810       UD    .092

811       KKRRDFPM10
812       KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
813       KM   RATE TO THE APPROXIMATE PEAK FLOW RATE DISCHARGE GOAL FROM THE BASIN
814       KM   AS SHOWN IN THE FINAL DRAINAGE REPORT FOR BRIARGATE BUSINESS CAMPUS
815       KM   FILING 13 AS APPROVED OCT 31, 1996
816       KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
817       KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN MAY DISCHARGE
818       KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN.
819       KM   DISCHARGE FROM THE BASIN PER THE FINAL DRAINAGE REPORT=140 cfs
820       RS       1    STOR       0
821       SV       0     001      .6     1.5
822       SE     100     102     104     106
823       SQ       0     140     140     140

824       KK RT-PM10
825       KM   ROUTE THE FLOW IN THE S.D.FROM THE LOW POINT IN TELESTAR DR. TO THE EXISTING
826       KM   OUTFALL TO PINE CREEK JUST UPSTREAM OF HIGHWAY 83.
827       RD    1000    .025    .013           CIRC     4.0

828       KK SB-PM11
829       KM   COMPUTE HYDROGRAPH FOR BASIN PM11
830       BA    .041
831       LS       0      98
832       UD    .096

833       KK    AP28
834       KM   COMBINE THE FLOW FROM BASIN PM11 WITH THE FLOW IN  PINE CREEK AT AP27,
835       KM   AND THE ROUTED FLOW FROM BASIN PM10. FLOW IS COMBINED IN PINE CREEK AT
836       KM   THE UPSTREAM SIDE OF THE BOX CULVERT UNDER HIGHWAY 83. THIS REPRESENTS THE
837       KM   TOTAL FLOW TO PINE CREEK FROM THE BRIARGATE AREA
838       KO       3       1
839       HC       3
840       ZZ
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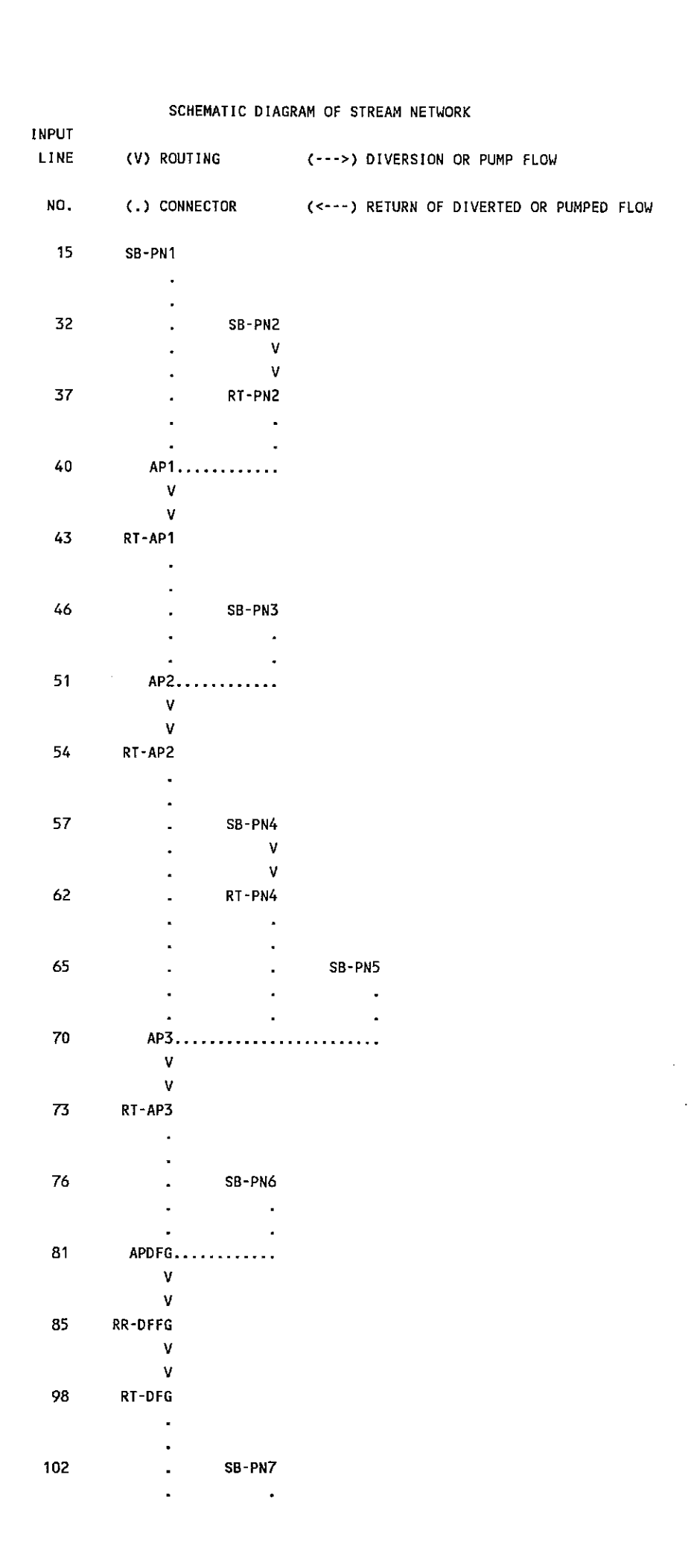
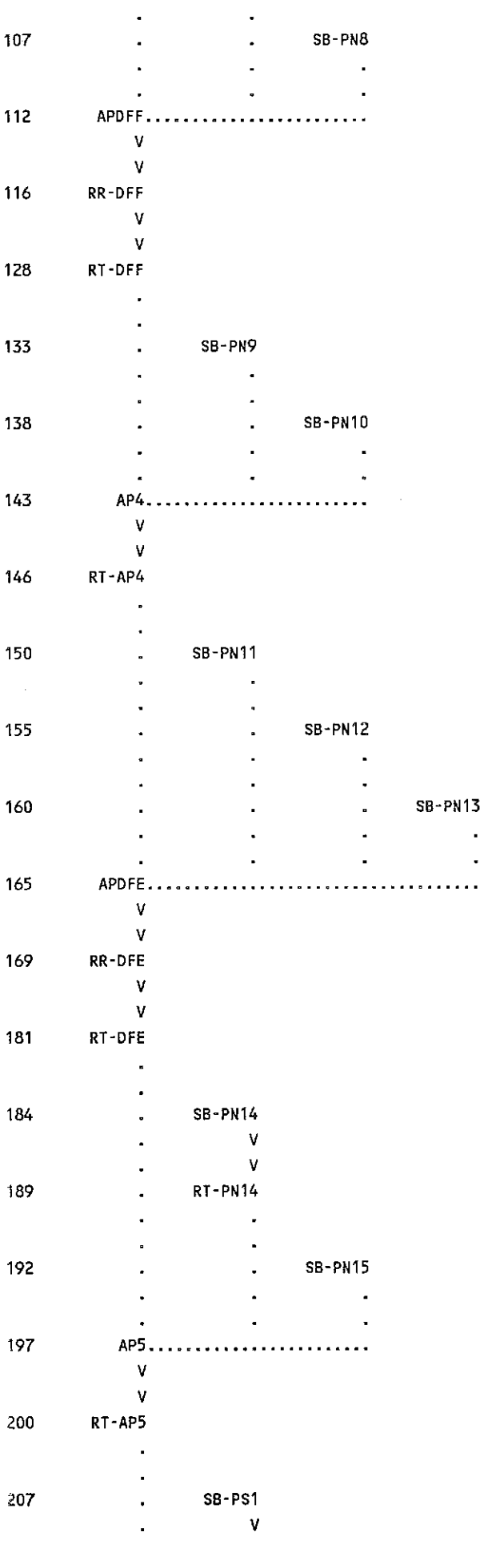
SCHEMATIC DIAGRAM OF STREAM NETWORK

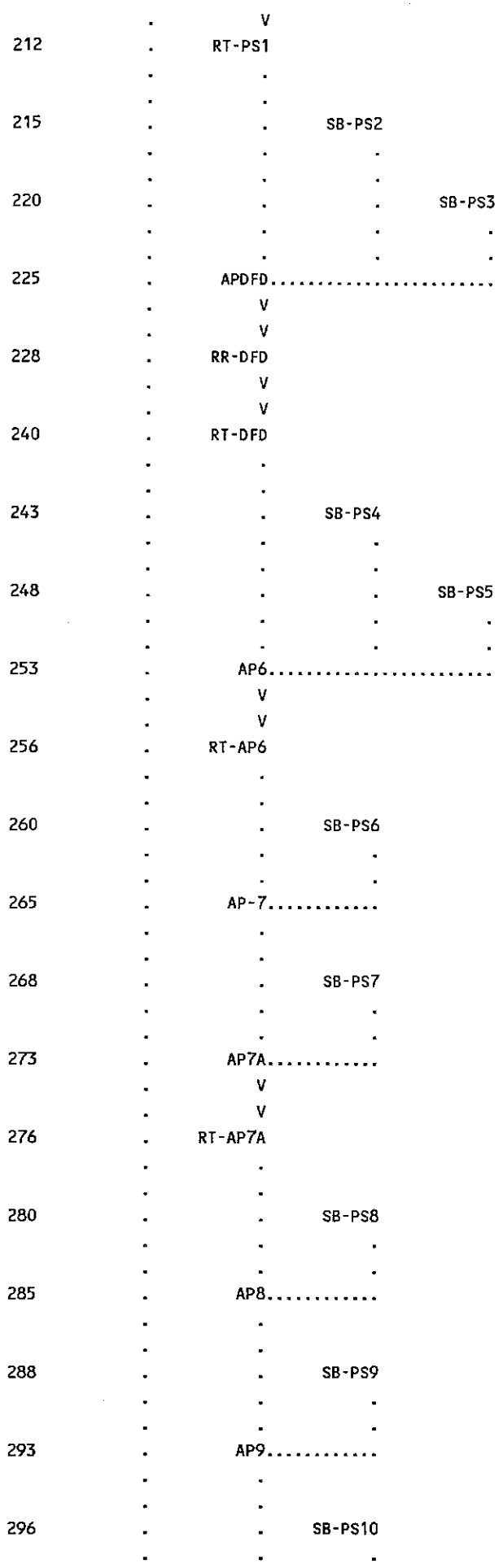
INPUT LINE NO.

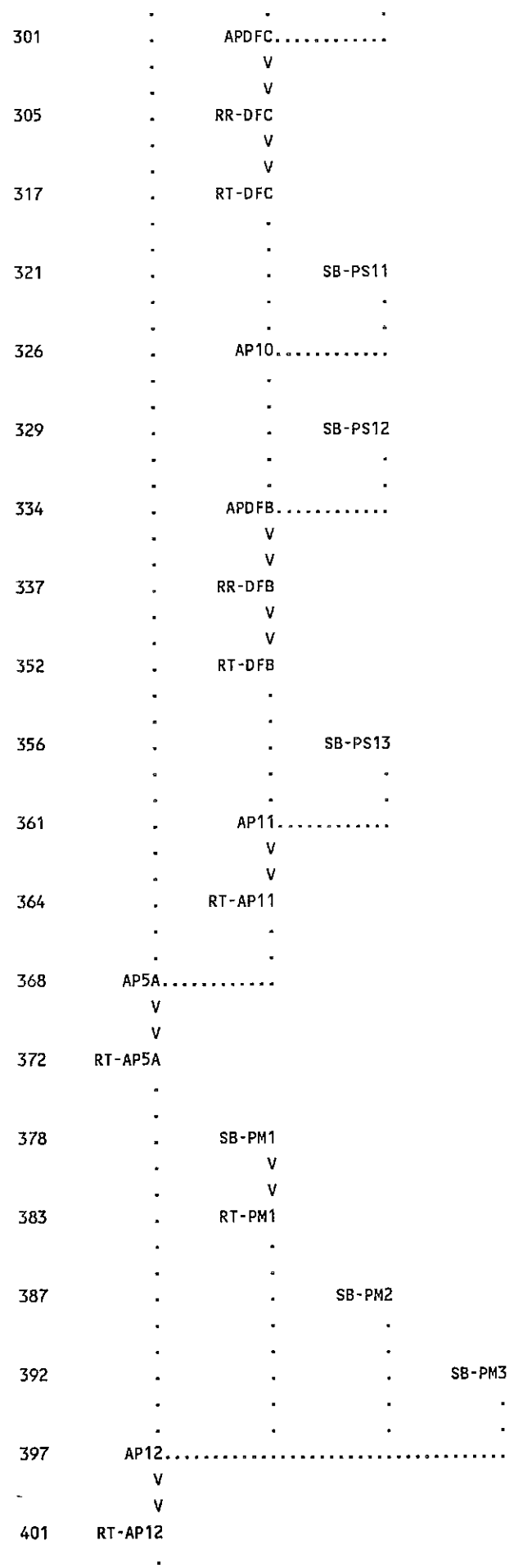
(V) ROUTING (---->) DIVERSION OR PUMP FLOW

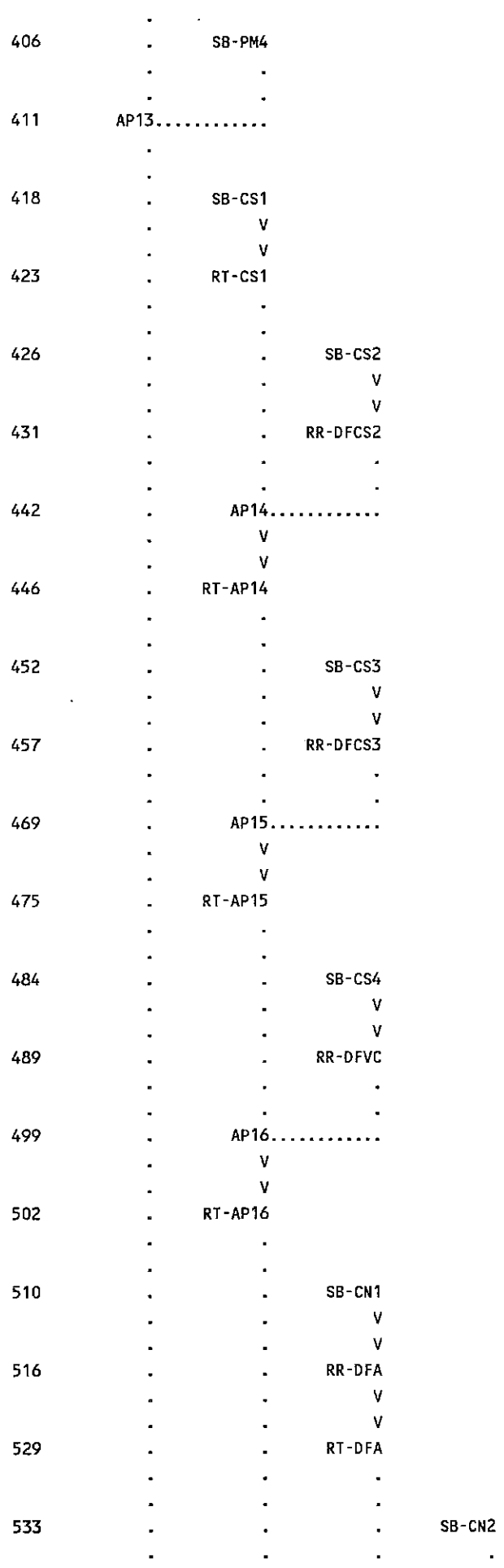
(.) CONNECTOR (<----) RETURN OF DIVERTED OR PUMPED FLOW

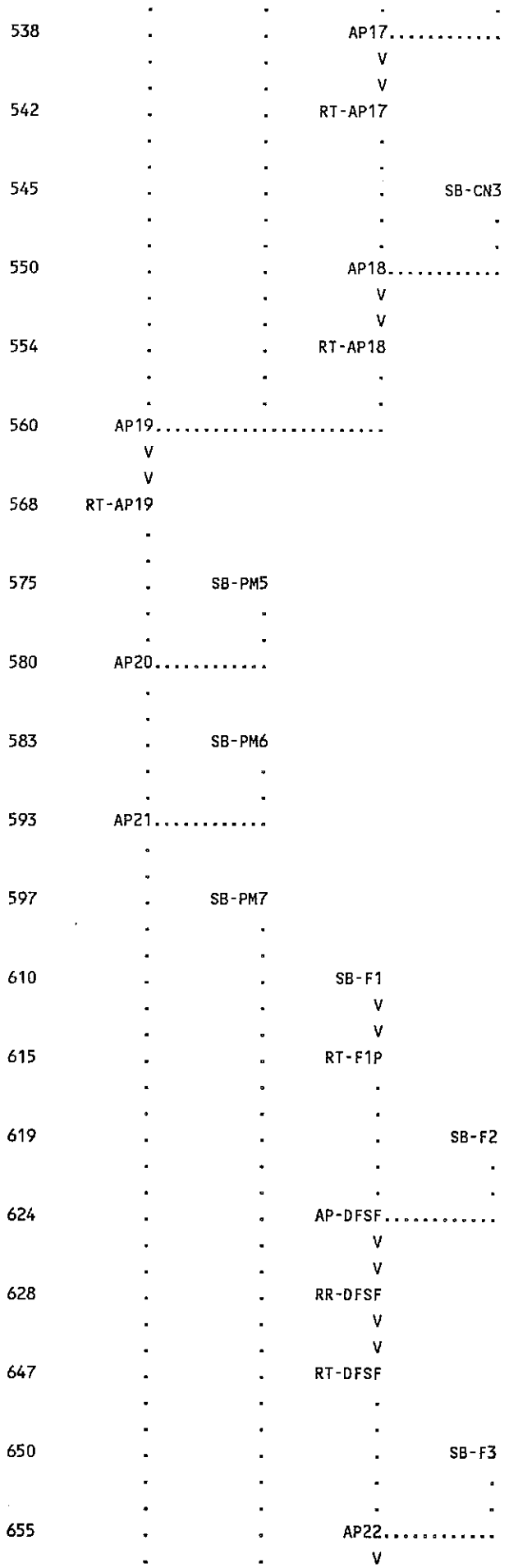


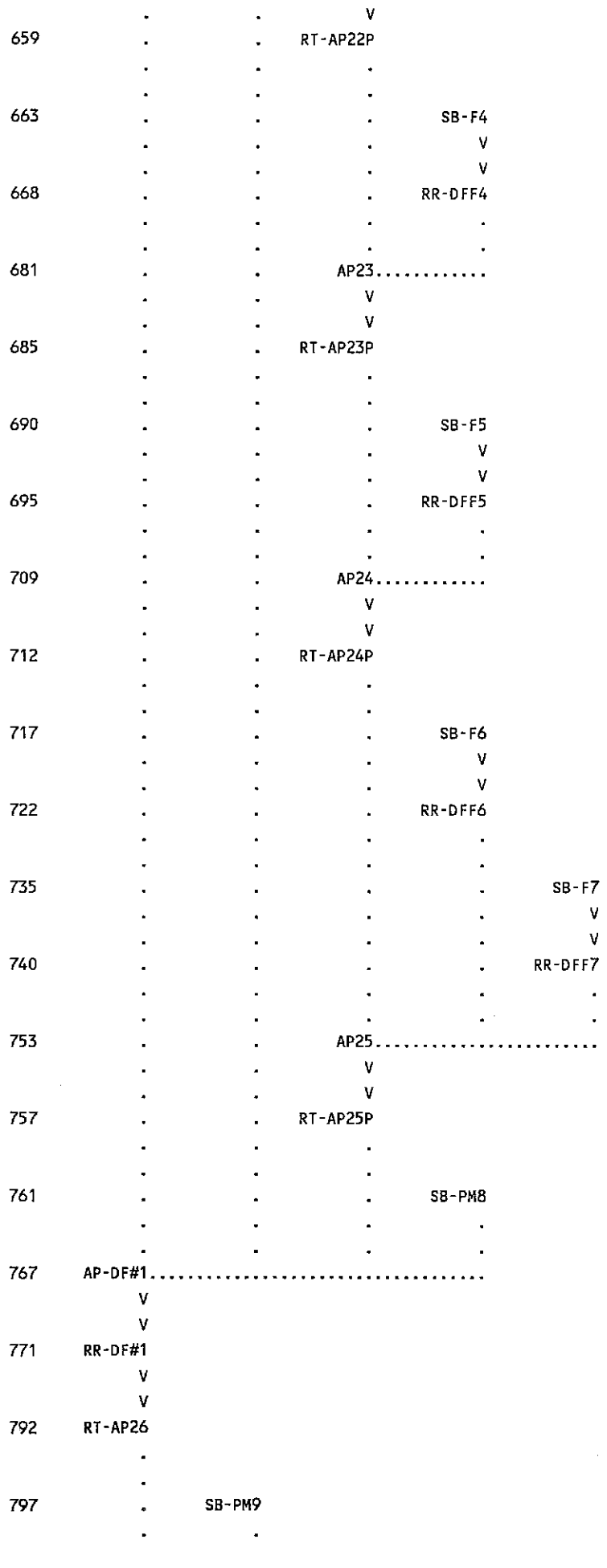

107
SB-PN8
112
APDFF
116
RR-DFF
128
RT-DFF
133
SB-PN9
138
SB-PN10
143
AP4
146
RT-AP4
150
SB-PN11
155
SB-PN12
160
SB-PN13
165
APDFE
169
RR-DFE
181
RT-DFE
184
SB-PN14
189
RT-PN14
192
SB-PN15
197
AP5
200
RT-AP5
207
SB-PS1

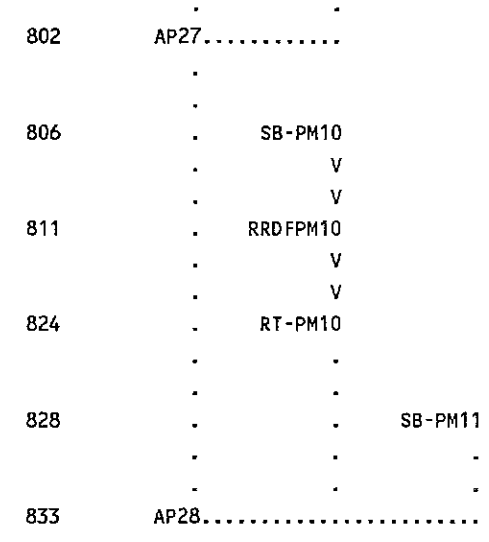

V
212 RT-PS1
215 SB-PS2
220 SB-PS3
225 APDFD
V
V
228 RR-DFD
V
V
240 RT-DFD
243 SB-PS4
248 SB-PS5
253 AP6
V
V
256 RT-AP6
260 SB-PS6
265 AP-7
268 SB-PS7
273 AP7A
V
V
276 RT-AP7A
280 SB-PS8
285 AP8
288 SB-PS9
293 AP9
296 SB-PS10


301 APDFC
305 RR-DFC
317 RT-DFC
321 SB-PS11
326 AP10
329 SB-PS12
334 APDFB
337 RR-DFB
352 RT-DFB
356 SB-PS13
361 AP11
364 RT-AP11
368 AP5A
372 RT-AP5A
378 SB-PM1
383 RT-PM1
387 SB-PM2
392 SB-PM3
397 AP12
401 RT-AP12


406
SB-PM4
411
AP13
418
SB-CS1
423
RT-CS1
426
SB-CS2
431
RR-DFCS2
442
AP14
446
RT-AP14
452
SB-CS3
457
RR-DFCS3
469
AP15
475
RT-AP15
484
SB-CS4
489
RR-DFVC
499
AP16
502
RT-AP16
510
SB-CN1
516
RR-DFA
529
RT-DFA
533
SB-CN2


538
AP17
542
RT-AP17
545
SB-CN3
550
AP18
554
RT-AP18
560
AP19
568
RT-AP19
575
SB-PM5
580
AP20
583
SB-PM6
593
AP21
597
SB-PM7
610
SB-F1
615
RT-F1P
619
SB-F2
624
AP-DFSF
628
RR-DFSF
647
RT-DFSF
650
SB-F3
655
AP22


659 RT-AP22P
663 SB-F4
668 RR-DFF4
681 AP23
685 RT-AP23P
690 SB-F5
695 RR-DFF5
709 AP24
712 RT-AP24P
717 SB-F6
722 RR-DFF6
735 SB-F7
740 RR-DFF7
753 AP25
757 RT-AP25P
761 SB-PM8
767 AP-DF#1
771 RR-DF#1
792 RT-AP26
797 SB-PM9



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
****************************************                                    ****************************************
*                                      *                                    *                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *                                    *   U.S. ARMY CORPS OF ENGINEERS       *
*              MAY  1991               *                                    *   HYDROLOGIC ENGINEERING CENTER      *
*           VERSION 4.0.1E             *                                    *         609 SECOND STREET            *
*                                      *                                    *      DAVIS, CALIFORNIA 95616         *
*  RUN DATE  08/05/1998  TIME  17:41:14 *                                   *          (916) 756-1104              *
*                                      *                                    *                                      *
****************************************                                    ****************************************
```

```
                    PINE CREEK DRAINAGE BASIN - 24HR, FULL DEVELOPED CONDITION (TYPE IIa5 YEAR)
                    FILE:PCDBPSD5.DAT
                    FULLY DEVELOPED CONDITION MODEL
                    998 REVISION
                    NOTE: THE DIVERSION ROUTINES WERE REMOVED FROM THE MODEL FOR THE 5 YR STORM
                    NOTE: THE OUTFLOW CURVE FOR THE SUMMER FIELD DETENTION POND WAS MODIFIED
                    SLIGHTLY TO ALLOW THE 5 YR MODEL TO RUN.
                    CN VALUES HAVE BEEN ADJUSTED TO PRODUCE PEAK 100 YEAR FLOW RATES SIMILAR TO
                    100 YEAR FLOW RATES PRODUCED BY RATIONAL METHOD.
                    ***************************************************************************
                    BEGIN CALCULATIONS IN THE PINE CREEK NORTH FORK WATERSHED
                    ***************************************************************************

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

     IT         HYDROGRAPH TIME DATA
                       NMIN           3  MINUTES IN COMPUTATION INTERVAL
                      IDATE      1    0  STARTING DATE
                      ITIME        0000  STARTING TIME
                         NQ         300  NUMBER OF HYDROGRAPH ORDINATES
                     NDDATE      1    0  ENDING DATE
                     NDTIME        1457  ENDING TIME
                      ICENT          19  CENTURY MARK

                   COMPUTATION INTERVAL    0.05 HOURS
                        TOTAL TIME BASE   14.95 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

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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          **************
          *            *
 85 KK    *   RR-DFFG  *
          *            *
          **************

 90 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          1  PLOT CONTROL
                     QSCAL        100.  HYDROGRAPH PLOT SCALE

              HYDROGRAPH ROUTING DATA

 91 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       STOR  TYPE OF INITIAL CONDITION
                    RSVRIC       0.00  INITIAL CONDITION
                         X       0.00 WORKING R AND D COEFFICIENT

 92 SV            STORAGE        0.0       0.1       2.8       8.0      14.1      20.9      28.4      36.6      45.5      55.1
                                65.3      76.3      88.2

 94 SE            ELEVATION     59.00     60.00     62.00     64.00     66.00     68.00     70.00     72.00     74.00     76.00
                                78.00     80.00     82.00

 96 SQ            DISCHARGE      0.        10.       47.       93.      130.      160.      180.      203.      222.      240.
                               262.      280.      295.

                                                          ***

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

                        HYDROGRAPH AT STATION  RR-DFFG

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                  6-HR        24-HR       72-HR     14.95-HR
    165.       6.45          (CFS)    87.          38.         38.         38.
                           (INCHES)  1.104        1.222       1.222       1.222
                           (AC-FT)    43.          48.         48.         48.

PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
   (AC-FT)     (HR)                  6-HR        24-HR       72-HR     14.95-HR
     23.       6.45                   9.          4.          4.          4.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
   (FEET)      (HR)                  6-HR        24-HR       72-HR     14.95-HR
    68.53      6.45                 63.96       61.30       61.30       61.30

                        CUMULATIVE AREA =    0.73 SQ MI

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


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          *            *
 16 KK    *    RR-DFF  *
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          *           *
          **************

 120 KO          OUTPUT CONTROL VARIABLES
                      IPRNT          3  PRINT CONTROL
                      IPLOT          1  PLOT CONTROL
                      QSCAL        100.  HYDROGRAPH PLOT SCALE

                HYDROGRAPH ROUTING DATA

 121 RS          STORAGE ROUTING
                      NSTPS          1  NUMBER OF SUBREACHES
                       ITYP       STOR  TYPE OF INITIAL CONDITION
                     RSVRIC       0.00  INITIAL CONDITION
                          X       0.00 WORKING R AND D COEFFICIENT

 122 SV            STORAGE        0.0        0.0        0.1        0.7        1.5        4.4        7.8       11.7       16.1       21.0
                                 26.4

 124 SE            ELEVATION     90.00      92.00      94.00      96.00      98.00     100.00     102.00     104.00     106.00     108.00
                                110.00

 126 SQ            DISCHARGE      0.         22.        70.       112.       143.       170.       190.       210.       230.       250.
                                 265.

                                                                    ***

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

                          HYDROGRAPH AT STATION   RR-DFF

 PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                  6-HR          24-HR          72-HR       14.95-HR
    170.       7.00          (CFS)    103.           46.            46.           46.
                             (INCHES) 1.037          1.147          1.147         1.147
                             (AC-FT)   51.           56.            56.           56.

 PEAK STORAGE  TIME                                MAXIMUM AVERAGE STORAGE
   (AC-FT)     (HR)                  6-HR          24-HR          72-HR       14.95-HR
      4.       7.00                   2.            1.             1.            1.

 PEAK STAGE    TIME                                MAXIMUM AVERAGE STAGE
   (FEET)      (HR)                  6-HR          24-HR          72-HR       14.95-HR
   100.03      7.00                 96.07         92.83          92.83         92.83

                          CUMULATIVE AREA =    0.92 SQ MI


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


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          *           *
 169 KK   *    RR-DFE  *
          *           *
          **************

 176 KO          OUTPUT CONTROL VARIABLES
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                    IPRNT          3  PRINT CONTROL
                    IPLOT          1  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE

          HYDROGRAPH ROUTING DATA

 77 RS      STORAGE ROUTING
                 NSTPS          1  NUMBER OF SUBREACHES
                  ITYP       STOR  TYPE OF INITIAL CONDITION
                RSVRIC       0.00  INITIAL CONDITION
                     X       0.00 WORKING R AND D COEFFICIENT

 78 SV        STORAGE        0.0       0.0       1.3       3.9       6.9      10.3      14.1      18.2      22.8      27.9

 79 SE        ELEVATION    784.00    786.00    788.00    790.00    792.00    794.00    796.00    798.00    800.00    802.00

180 SQ        DISCHARGE      0.        25.       80.       136.      173.      210.      240.      263.      280.      1431.

                                                  ***

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

                    HYDROGRAPH AT STATION   RR-DFE

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                6-HR       24-HR       72-HR     14.95-HR
   177.       7.70       (CFS)     122.         55.         55.         55.
                         (INCHES) 0.913       1.019       1.019       1.019
                         (AC-FT)    61.         68.         68.         68.

 AK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
 (AC-FT)      (HR)                6-HR       24-HR       72-HR     14.95-HR
      7.      7.70                  4.          2.          2.          2.

PEAK STAGE    TIME                        MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                6-HR       24-HR       72-HR     14.95-HR
  792.24      7.70              789.81      786.77      786.77      786.77

                    CUMULATIVE AREA =    1.25 SQ MI

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

          **************
          *            *
228 KK    *    RR-DFD  *
          *            *
          **************

236 KO      OUTPUT CONTROL VARIABLES
                    IPRNT          3  PRINT CONTROL
                    IPLOT          1  PLOT CONTROL
                    QSCAL        100.  HYDROGRAPH PLOT SCALE
```

HYDROGRAPH ROUTING DATA

235 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	STOR	TYPE OF INITIAL CONDITION
RSVRIC	0.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

237 SV	STORAGE	0.0	6.8	14.3	22.4	31.1	40.6	50.8	61.8
238 SE	ELEVATION	100.00	102.00	104.00	106.00	108.00	110.00	112.00	114.00
239 SQ	DISCHARGE	0.	18.	54.	72.	87.	99.	110.	120.

***

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

HYDROGRAPH AT STATION RR-DFD

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
(CFS)	(HR)		6-HR	24-HR	72-HR	14.95-HR
57.	6.70	(CFS)	38.	18.	18.	18.
		(INCHES)	0.758	0.919	0.919	0.919
		(AC-FT)	19.	23.	23.	23.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
(AC-FT)	(HR)	6-HR	24-HR	72-HR	14.95-HR
16.	6.70	11.	6.	6.	6.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
(FEET)	(HR)	6-HR	24-HR	72-HR	14.95-HR
104.36	6.70	103.13	101.62	101.62	101.62

CUMULATIVE AREA = 0.47 SQ MI

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*            *
305 KK       *   RR-DFC   *
*            *
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```

309 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	1	PLOT CONTROL
QSCAL	100.	HYDROGRAPH PLOT SCALE

HYDROGRAPH ROUTING DATA

310 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	STOR	TYPE OF INITIAL CONDITION
RSVRIC	0.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

```
 11 SV          STORAGE        0.0       2.7       9.7      18.6      28.0      38.2      49.0      60.5      72.8      85.8
                              99.7

313 SE          ELEVATION     62.00     64.00     66.00     68.00     70.00     72.00     74.00     76.00     78.00     80.00
                              82.00

315 SQ          DISCHARGE      0.       23.       70.      110.      140.      168.      190.      215.      232.      245.
                             258.

                                                        ***

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

                        HYDROGRAPH AT STATION   RR-DFC

 PEAK FLOW     TIME                              MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                    6-HR        24-HR        72-HR      14.95-HR
    153.       6.55          (CFS)      119.          59.          59.          59.
                             (INCHES)  1.061        1.310        1.310        1.310
                             (AC-FT)    59.          73.          73.          73.

 PEAK STORAGE  TIME                              MAXIMUM AVERAGE STORAGE
   (AC-FT)     (HR)                    6-HR        24-HR        72-HR      14.95-HR
     33.       6.55                     22.          10.          10.          10.

 PEAK STAGE    TIME                              MAXIMUM AVERAGE STAGE
   (FEET)      (HR)                    6-HR        24-HR        72-HR      14.95-HR
    70.96      6.55                   68.71        65.40        65.40        65.40

                        CUMULATIVE AREA =    1.04 SQ MI


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


          **************
          *            *
337 KK    *    RR-DFB  *
          *            *
          **************

344 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          1  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

               HYDROGRAPH ROUTING DATA

345 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       STOR  TYPE OF INITIAL CONDITION
                     RSVRIC       0.00  INITIAL CONDITION
                         X        0.00 WORKING R AND D COEFFICIENT

346 SV          STORAGE        0.0       0.1       1.2       3.3       5.8       8.7      12.1      15.9      20.1      23.6
                              24.8      30.0
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348 SE        ELEVATION      71.20      72.00      74.00      76.00      78.00      80.00      82.00      84.00      86.00      87.60
                             88.00      90.00

350 SQ        DISCHARGE         0.        22.        73.       130.       169.       202.       236.       260.       285.       301.
                              371.      1222.

                                                               ***

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

                    HYDROGRAPH AT STATION    RR-DFB

 PEAK FLOW      TIME                               MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                     6-HR        24-HR       72-HR      14.95-HR
    159.        7.15        (CFS)        128.          64.         64.          64.
                          (INCHES)      0.958        1.182       1.182        1.182
                           (AC-FT)        64.          79.         79.          79.

PEAK STORAGE    TIME                              MAXIMUM AVERAGE STORAGE
  (AC-FT)       (HR)                     6-HR        24-HR       72-HR      14.95-HR
       5.       7.15                       4.           2.          2.           2.

 PEAK STAGE     TIME                               MAXIMUM AVERAGE STAGE
   (FEET)       (HR)                     6-HR        24-HR       72-HR      14.95-HR
   77.49        7.15                    76.12        73.63       73.63        73.63

                          CUMULATIVE AREA =      1.25 SQ MI


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


              **************
              *            *
516 KK        *   RR-DFA   *
              *            *
              **************

521 KO          OUTPUT CONTROL VARIABLES
                      IPRNT           3  PRINT CONTROL
                      IPLOT           1  PLOT CONTROL
                      QSCAL        100.  HYDROGRAPH PLOT SCALE

              HYDROGRAPH ROUTING DATA

522 RS          STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        STOR  TYPE OF INITIAL CONDITION
                     RSVRIC        0.00  INITIAL CONDITION
                          X        0.00 WORKING R AND D COEFFICIENT

523 SV          STORAGE       0.0        0.0        0.2        1.0        2.0        2.8        4.3        5.3        6.5       11.6
                             15.4

525 SQ        DISCHARGE        2.         3.         3.         4.         4.         5.         5.         6.         8.         9.
                             279.

527 SE        ELEVATION   6796.60    6797.00    6798.00    6800.00    6802.00    6803.50    6803.51    6804.00    6804.10    6805.50
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                                  6806.50

                                                                                  ***

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                          HYDROGRAPH AT STATION   RR-DFA

 PEAK FLOW      TIME                               MAXIMUM AVERAGE FLOW
   (CFS)        (HR)                   6-HR        24-HR       72-HR     14.95-HR
       5.       8.10       (CFS)         5.          4.          4.           4.
                        (INCHES)      0.321       0.619       0.619        0.619
                         (AC-FT)         2.          5.          5.           5.

PEAK STORAGE    TIME                             MAXIMUM AVERAGE STORAGE
  (AC-FT)       (HR)                   6-HR        24-HR       72-HR     14.95-HR
       4.       8.15                     3.          2.          2.           2.

 PEAK STAGE     TIME                              MAXIMUM AVERAGE STAGE
   (FEET)       (HR)                   6-HR        24-HR       72-HR     14.95-HR
   6803.51      7.65                6803.48     6800.68     6800.68      6800.68

                         CUMULATIVE AREA =     0.14 SQ MI



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


              **************
              *            *
 628 KK       *   RR-DFSF  *
              *            *
              **************

 642 KO            OUTPUT CONTROL VARIABLES
                         IPRNT            3  PRINT CONTROL
                         IPLOT            1  PLOT CONTROL
                         QSCAL          100.  HYDROGRAPH PLOT SCALE

                 HYDROGRAPH ROUTING DATA

 643 RS            STORAGE ROUTING
                         NSTPS            1  NUMBER OF SUBREACHES
                          ITYP         STOR  TYPE OF INITIAL CONDITION
                        RSVRIC         0.00  INITIAL CONDITION
                             X         0.00 WORKING R AND D COEFFICIENT

 644 SV              STORAGE          0.0         0.6         4.6         6.9        10.3

 645 SE            ELEVATION        92.00       94.00       96.00       98.00      100.00

 646 SQ            DISCHARGE          80.        126.        131.        137.        144.

                                                                                  ***

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

                          HYDROGRAPH AT STATION  RR-DFSF
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PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	14.95-HR
92.	6.20	(CFS)	80.	80.	80.	80.
		(INCHES)	4.724	11.746	11.746	11.746
		(AC-FT)	40.	99.	99.	99.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	14.95-HR
0.	6.20	0.	0.	0.	0.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	14.95-HR
92.50	6.20	92.01	92.00	92.00	92.00

CUMULATIVE AREA = 0.16 SQ MI

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          **************
          *            *
771 KK    *   RR-DF#1  *
          *            *
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784 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	1	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

HYDROGRAPH ROUTING DATA

785 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	STOR	TYPE OF INITIAL CONDITION
RSVRIC	0.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

786 SA	AREA	0.0	0.2	0.5	4.8	5.2	5.5	5.8	6.1	6.4	6.8
		7.1	7.3	7.5	7.7	7.9					
788 SE	ELEVATION	54.00	55.00	56.00	58.00	60.00	62.00	64.00	66.00	68.00	70.00
		72.00	73.00	74.00	75.00	76.00					
790 SQ	DISCHARGE	0.	105.	194.	275.	344.	401.	451.	496.	560.	747.
		998.	1142.	1247.	1750.	2100.					

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COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	0.06	0.38	4.93	14.99	25.74	37.09	49.05	61.62	74.83
ELEVATION	54.00	55.00	56.00	58.00	60.00	62.00	64.00	66.00	68.00	70.00
STORAGE	88.75	95.99	103.43	111.06	118.90					
ELEVATION	72.00	73.00	74.00	75.00	76.00					

** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 0. TO 105.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.
THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

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HYDROGRAPH AT STATION RR-DF#1

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
(CFS)	(HR)		6-HR	24-HR	72-HR	14.95-HR
488.	8.20	(CFS)	452.	274.	274.	274.
		(INCHES)	0.949	1.434	1.434	1.434
		(AC-FT)	224.	338.	338.	338.

EAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
(AC-FT)	(HR)	6-HR	24-HR	72-HR	14.95-HR
47.	8.20	38.	17.	17.	17.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
(FEET)	(HR)	6-HR	24-HR	72-HR	14.95-HR
65.64	8.20	64.11	59.24	59.24	59.24

CUMULATIVE AREA = 4.43 SQ MI

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          *            *
833 KK    *      AP28  *
          *            *
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838 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	1	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

839 HC HYDROGRAPH COMBINATION

ICOMP	3	NUMBER OF HYDROGRAPHS TO COMBINE

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HYDROGRAPH AT STATION AP28

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
(CFS)	(HR)		6-HR	24-HR	72-HR	14.95-HR
633.	6.05	(CFS)	476.	288.	288.	288.
		(INCHES)	0.966	1.453	1.453	1.453
		(AC-FT)	236.	355.	355.	355.

CUMULATIVE AREA = 4.58 SQ MI

5 YEAR STORM, FULLY DEVELOPED CONDITION

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	SB-PN1	143.	6.10	15.	7.	7.	0.16		
HYDROGRAPH AT	SB-PN2	120.	6.10	13.	6.	6.	0.15		
ROUTED TO	RT-PN2	119.	6.10	13.	6.	6.	0.15		
2 COMBINED AT	AP1	262.	6.10	28.	13.	13.	0.31		
ROUTED TO	RT-AP1	259.	6.10	28.	13.	13.	0.31		
HYDROGRAPH AT	SB-PN3	97.	6.10	11.	5.	5.	0.08		
2 COMBINED AT	AP2	356.	6.10	39.	17.	17.	0.40		
ROUTED TO	RT-AP2	353.	6.10	39.	17.	17.	0.40		
HYDROGRAPH AT	SB-PN4	90.	6.10	10.	4.	4.	0.11		
ROUTED TO	RT-PN4	90.	6.10	10.	4.	4.	0.11		
HYDROGRAPH AT	SB-PN5	92.	6.05	10.	4.	4.	0.07		
3 COMBINED AT	AP3	532.	6.10	59.	26.	26.	0.58		
ROUTED TO	RT-AP3	528.	6.10	59.	26.	26.	0.58		
HYDROGRAPH AT	SB-PN6	283.	6.00	30.	13.	13.	0.15		
2 COMBINED AT	APDFG	770.	6.05	88.	39.	39.	0.73		
ROUTED TO	RR-DFFG	165.	6.45	87.	38.	38.	0.73	68.53	6.45
ROUTED TO	RT-DFG	165.	6.50	87.	38.	38.	0.73		
HYDROGRAPH AT	SB-PN7	50.	6.10	5.	2.	2.	0.08		
HYDROGRAPH AT	SB-PN8	104.	6.05	11.	5.	5.	0.11		
3 COMBINED AT	APDFF	269.	6.10	103.	46.	46.	0.92		
ROUTED TO	RR-DFF	170.	7.00	103.	46.	46.	0.92	100.03	7.00
ROUTED TO	RT-DFF	170.	7.05	103.	46.	46.	0.92		
HYDROGRAPH AT	SB-PN9	20.	6.10	2.	1.	1.	0.04		
HYDROGRAPH AT	SB-PN10	26.	6.05	2.	1.	1.	0.04		
3 COMBINED AT	AP4	180.	6.15	107.	48.	48.	1.00		
ROUTED TO	RT-AP4	179.	6.20	107.	48.	48.	1.00		

HYDROGRAPH AT	SB-PN11	55.	6.10	6.	3.	3.	0.08		
HYDROGRAPH AT	SB-PN12	17.	6.05	2.	1.	1.	0.04		
HYDROGRAPH AT	SB-PN13	73.	6.10	8.	4.	4.	0.13		
4 COMBINED AT	APDFE	307.	6.15	123.	55.	55.	1.25		
ROUTED TO	RR-DFE	177.	7.70	122.	55.	55.	1.25	792.24	7.70
ROUTED TO	RT-DFE	177.	7.70	122.	55.	55.	1.25		
HYDROGRAPH AT	SB-PN14	17.	6.05	2.	1.	1.	0.03		
ROUTED TO	RT-PN14	17.	6.10	2.	1.	1.	0.03		
HYDROGRAPH AT	SB-PN15	39.	6.10	4.	2.	2.	0.07		
3 COMBINED AT	AP5	181.	7.70	128.	58.	58.	1.35		
ROUTED TO	RT-AP5	181.	7.70	128.	58.	58.	1.35		
HYDROGRAPH AT	SB-PS1	113.	6.10	13.	6.	6.	0.15		
ROUTED TO	RT-PS1	111.	6.10	13.	6.	6.	0.15		
HYDROGRAPH AT	SB-PS2	177.	6.05	19.	8.	8.	0.15		
HYDROGRAPH AT	SB-PS3	178.	6.10	20.	9.	9.	0.16		
3 COMBINED AT	APDFD	464.	6.10	52.	23.	23.	0.47		
ROUTED TO	RR-DFD	57.	6.70	38.	18.	18.	0.47	104.36	6.70
ROUTED TO	RT-DFD	57.	6.75	38.	18.	18.	0.47		
HYDROGRAPH AT	SB-PS4	97.	6.00	10.	4.	4.	0.05		
HYDROGRAPH AT	SB-PS5	138.	6.00	15.	7.	7.	0.07		
3 COMBINED AT	AP6	247.	6.00	62.	30.	30.	0.59		
ROUTED TO	RT-AP6	246.	6.05	62.	30.	30.	0.59		
HYDROGRAPH AT	SB-PS6	103.	6.05	10.	4.	4.	0.08		
2 COMBINED AT	AP-7	349.	6.05	72.	34.	34.	0.66		
HYDROGRAPH AT	SB-PS7	188.	6.00	21.	9.	9.	0.09		
2 COMBINED AT	AP7A	532.	6.00	92.	43.	43.	0.75		
ROUTED TO	RT-AP7A	529.	6.05	92.	43.	43.	0.75		
HYDROGRAPH AT	SB-PS8	163.	6.05	16.	7.	7.	0.12		
2 COMBINED AT	AP8	692.	6.05	108.	50.	50.	0.87		
HYDROGRAPH AT	SB-PS9	250.	6.00	27.	12.	12.	0.13		

2 COMBINED AT	AP9	935.	6.00	135.	61.	61.	1.00		
HYDROGRAPH AT	SB-PS10	22.	6.10	2.	1.	1.	0.04		
2 COMBINED AT	APDFC	956.	6.05	137.	62.	62.	1.04		
ROUTED TO	RR-DFC	153.	6.55	119.	59.	59.	1.04	70.96	6.55
ROUTED TO	RT-DFC	153.	6.55	118.	59.	59.	1.04		
HYDROGRAPH AT	SB-PS11	51.	6.05	5.	2.	2.	0.06		
2 COMBINED AT	AP10	181.	6.15	123.	61.	61.	1.09		
HYDROGRAPH AT	SB-PS12	52.	6.15	7.	3.	3.	0.15		
2 COMBINED AT	APDFB	233.	6.15	130.	64.	64.	1.25		
ROUTED TO	RR-DFB	159.	7.15	128.	64.	64.	1.25	77.49	7.15
ROUTED TO	RT-DFB	159.	7.15	128.	64.	64.	1.25		
HYDROGRAPH AT	SB-PS13	42.	6.05	4.	2.	2.	0.06		
2 COMBINED AT	AP11	162.	7.05	132.	65.	65.	1.31		
ROUTED TO	RT-AP11	162.	7.05	132.	65.	65.	1.31		
2 COMBINED AT	AP5A	342.	7.15	260.	123.	123.	2.66		
ROUTED TO	RT-AP5A	342.	7.20	260.	123.	123.	2.66		
HYDROGRAPH AT	SB-PM1	41.	6.10	5.	2.	2.	0.05		
ROUTED TO	RT-PM1	41.	6.10	5.	2.	2.	0.05		
HYDROGRAPH AT	SB-PM2	31.	6.25	5.	2.	2.	0.15		
HYDROGRAPH AT	SB-PM3	32.	6.15	4.	2.	2.	0.07		
4 COMBINED AT	AP12	408.	6.25	273.	129.	129.	2.93		
ROUTED TO	RT-AP12	407.	6.30	273.	129.	129.	2.93		
HYDROGRAPH AT	SB-PM4	57.	6.10	6.	3.	3.	0.11		
2 COMBINED AT	AP13	437.	6.25	279.	131.	131.	3.04		
HYDROGRAPH AT	SB-CS1	30.	6.10	3.	1.	1.	0.05		
ROUTED TO	RT-CS1	30.	6.15	3.	1.	1.	0.05		
HYDROGRAPH AT	SB-CS2	149.	6.00	16.	7.	7.	0.07		
ROUTED TO	RR-DFCS2	149.	6.00	16.	7.	7.	0.07	101.53	6.00
2 COMBINED AT	AP14	167.	6.00	20.	9.	9.	0.12		
ROUTED TO	RT-AP14	165.	6.00	20.	9.	9.	0.12		

HYDROGRAPH AT	SB-CS3	61.	6.05	6.	3.	3.	0.05		
ROUTED TO	RR-DFCS3	61.	6.05	6.	3.	3.	0.05	100.99	6.05
2 COMBINED AT	AP15	223.	6.05	26.	11.	11.	0.18		
ROUTED TO	RT-AP15	223.	6.05	26.	11.	11.	0.18		
HYDROGRAPH AT	SB-CS4	107.	6.00	11.	5.	5.	0.05		
ROUTED TO	RR-DFVC	17.	6.25	11.	5.	5.	0.05	78.27	6.25
2 COMBINED AT	AP16	239.	6.05	37.	16.	16.	0.23		
ROUTED TO	RT-AP16	239.	6.05	37.	16.	16.	0.23		
HYDROGRAPH AT	SB-CN1	102.	6.10	11.	5.	5.	0.14		
ROUTED TO	RR-DFA	5.	8.10	5.	4.	4.	0.14	6803.51	7.65
ROUTED TO	RT-DFA	5.	8.15	5.	4.	4.	0.14		
HYDROGRAPH AT	SB-CN2	47.	6.10	5.	2.	2.	0.08		
2 COMBINED AT	AP17	51.	6.10	10.	6.	6.	0.22		
ROUTED TO	RT-AP17	51.	6.15	10.	6.	6.	0.22		
HYDROGRAPH AT	SB-CN3	40.	6.05	4.	2.	2.	0.04		
2 COMBINED AT	AP18	88.	6.10	14.	8.	8.	0.27		
ROUTED TO	RT-AP18	87.	6.10	14.	8.	8.	0.27		
3 COMBINED AT	AP19	656.	6.15	324.	156.	156.	3.54		
ROUTED TO	RT-AP19	651.	6.20	324.	155.	155.	3.54		
HYDROGRAPH AT	SB-PM5	78.	6.10	9.	4.	4.	0.18		
2 COMBINED AT	AP20	712.	6.20	332.	159.	159.	3.72		
HYDROGRAPH AT	SB-PM6	186.	6.00	21.	9.	9.	0.09		
2 COMBINED AT	AP21	797.	6.15	350.	168.	168.	3.81		
HYDROGRAPH AT	SB-PM7	66.	6.25	10.	5.	5.	0.14		
HYDROGRAPH AT	SB-F1	89.	6.10	10.	4.	4.	0.12		
ROUTED TO	RT-F1P	87.	6.10	10.	4.	4.	0.12		
HYDROGRAPH AT	SB-F2	24.	6.10	2.	1.	1.	0.04		
2 COMBINED AT	AP-DFSF	110.	6.10	12.	6.	6.	0.16		
ROUTED TO	RR-DFSF	92.	6.20	80.	80.	80.	0.16	92.50	6.20
ROUTED TO	RT-DFSF	91.	6.20	80.	80.	80.	0.16		

HYDROGRAPH AT	SB-F3	76.	6.10	9.	4.	4.	0.11		
2 COMBINED AT	AP22	161.	6.15	89.	84.	84.	0.27		
ROUTED TO	RT-AP22P	159.	6.20	89.	84.	84.	0.27		
HYDROGRAPH AT	SB-F4	38.	6.10	4.	2.	2.	0.04		
ROUTED TO	RR-DFF4	38.	6.10	4.	2.	2.	0.04	101.09	6.10
2 COMBINED AT	AP23	194.	6.15	93.	86.	86.	0.31		
ROUTED TO	RT-AP23P	193.	6.15	93.	86.	86.	0.31		
HYDROGRAPH AT	SB-F5	127.	6.00	13.	6.	6.	0.06		
ROUTED TO	RR-DFF5	127.	6.00	13.	6.	6.	0.06	101.45	6.00
2 COMBINED AT	AP24	298.	6.05	107.	92.	92.	0.37		
ROUTED TO	RT-AP24P	295.	6.05	107.	92.	92.	0.37		
HYDROGRAPH AT	SB-F6	81.	6.00	9.	4.	4.	0.04		
ROUTED TO	RR-DFF6	81.	6.00	9.	4.	4.	0.04	101.55	6.00
HYDROGRAPH AT	SB-F7	93.	6.00	10.	4.	4.	0.05		
ROUTED TO	RR-DFF7	93.	6.00	10.	4.	4.	0.05	101.40	6.00
3 COMBINED AT	AP25	461.	6.05	125.	100.	100.	0.46		
ROUTED TO	RT-AP25P	459.	6.05	125.	100.	100.	0.46		
HYDROGRAPH AT	SB-PM8	30.	6.00	3.	1.	1.	0.01		
4 COMBINED AT	AP-DF#1	1297.	6.10	487.	274.	274.	4.43		
ROUTED TO	RR-DF#1	488.	8.20	452.	274.	274.	4.43	65.64	8.20
ROUTED TO	RT-AP26	488.	8.25	452.	273.	273.	4.43		
HYDROGRAPH AT	SB-PM9	124.	6.00	13.	5.	5.	0.07		
2 COMBINED AT	AP27	492.	8.05	459.	278.	278.	4.49		
HYDROGRAPH AT	SB-PM10	102.	6.00	11.	5.	5.	0.05		
ROUTED TO	RRDFPM10	99.	6.00	11.	5.	5.	0.05	101.41	6.00
ROUTED TO	RT-PM10	98.	6.00	11.	5.	5.	0.05		
HYDROGRAPH AT	SB-PM11	87.	6.00	10.	4.	4.	0.04		
3 COMBINED AT	AP28	633.	6.05	476.	288.	288.	4.58		

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

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
	RT-PN2 MANE	0.72	119.56	366.48	0.90	3.00	119.19	366.00	0.90
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7146E+01 EXCESS=0.0000E+00 OUTFLOW=0.7142E+01 BASIN STORAGE=0.5301E-02 PERCENT ERROR= 0.0									
	RT-AP1 MANE	1.49	259.34	367.15	0.93	3.00	258.63	366.00	0.93
ONTINUITY SUMMARY (AC-FT) - INFLOW=0.1557E+02 EXCESS=0.0000E+00 OUTFLOW=0.1555E+02 BASIN STORAGE=0.2347E-01 PERCENT ERROR= 0.0									
	RT-AP2 MANE	0.47	354.83	366.53	1.01	3.00	352.76	366.00	1.01
ONTINUITY SUMMARY (AC-FT) - INFLOW=0.2132E+02 EXCESS=0.0000E+00 OUTFLOW=0.2131E+02 BASIN STORAGE=0.9832E-02 PERCENT ERROR= 0.0									
	RT-PN4 MANE	0.69	89.89	366.54	0.87	3.00	89.82	366.00	0.87
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5312E+01 EXCESS=0.0000E+00 OUTFLOW=0.5308E+01 BASIN STORAGE=0.3826E-02 PERCENT ERROR= 0.0									
	RT-AP3 MANE	0.58	529.45	366.28	1.02	3.00	527.53	366.00	1.02
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3189E+02 EXCESS=0.0000E+00 OUTFLOW=0.3188E+02 BASIN STORAGE=0.1805E-01 PERCENT ERROR= 0.0									
	RT-DFG MANE	3.00	165.38	390.00	1.22	3.00	165.38	390.00	1.22
NTINUITY SUMMARY (AC-FT) - INFLOW=0.4759E+02 EXCESS=0.0000E+00 OUTFLOW=0.4742E+02 BASIN STORAGE=0.2226E+00 PERCENT ERROR= -0.1									
	RT-DFF MANE	3.00	170.34	423.00	1.15	3.00	170.34	423.00	1.15
ONTINUITY SUMMARY (AC-FT) - INFLOW=0.5642E+02 EXCESS=0.0000E+00 OUTFLOW=0.5649E+02 BASIN STORAGE=-.6064E-01 PERCENT ERROR= 0.0									
	RT-AP4 MANE	1.05	179.45	370.65	1.11	3.00	179.16	372.00	1.11
ONTINUITY SUMMARY (AC-FT) - INFLOW=0.5899E+02 EXCESS=0.0000E+00 OUTFLOW=0.5903E+02 BASIN STORAGE=-.3665E-01 PERCENT ERROR= 0.0									
	RT-DFE MANE	1.26	177.35	463.15	1.02	3.00	177.35	462.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6770E+02 EXCESS=0.0000E+00 OUTFLOW=0.6772E+02 BASIN STORAGE=-.1088E-01 PERCENT ERROR= 0.0

RT-PN14	MANE	1.30	17.18	364.89	0.67	3.00	17.04	366.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9711E+00 EXCESS=0.0000E+00 OUTFLOW=0.9699E+00 BASIN STORAGE=0.1459E-02 PERCENT ERROR= 0.0

RT-AP5	MANE	0.27	180.98	462.49	0.99	3.00	180.98	462.00	0.99

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7107E+02 EXCESS=0.0000E+00 OUTFLOW=0.7107E+02 BASIN STORAGE=-.1741E-02 PERCENT ERROR= 0.0

RT-PS1	MANE	1.53	111.98	367.87	0.87	3.00	110.60	366.00	0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6943E+01 EXCESS=0.0000E+00 OUTFLOW=0.6934E+01 BASIN STORAGE=0.1102E-01 PERCENT ERROR= 0.0

RT-DFD	MANE	0.95	57.22	403.82	0.92	3.00	57.21	405.00	0.92

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2285E+02 EXCESS=0.0000E+00 OUTFLOW=0.2282E+02 BASIN STORAGE=0.2601E-01 PERCENT ERROR= 0.0

RT-AP6	MANE	1.83	247.07	362.52	1.17	3.00	246.37	363.00	1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3655E+02 EXCESS=0.0000E+00 OUTFLOW=0.3648E+02 BASIN STORAGE=0.7723E-01 PERCENT ERROR= 0.0

RT-AP7A	MANE	1.32	531.27	361.41	1.33	3.00	529.25	363.00	1.33

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5316E+02 EXCESS=0.0000E+00 OUTFLOW=0.5309E+02 BASIN STORAGE=0.7515E-01 PERCENT ERROR= 0.0

RT-DFC	MANE	1.57	153.45	393.68	1.31	3.00	153.43	393.00	1.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7252E+02 EXCESS=0.0000E+00 OUTFLOW=0.7241E+02 BASIN STORAGE=0.1130E+00 PERCENT ERROR= 0.0

RT-DFB	MANE	0.79	159.14	430.27	1.18	3.00	159.13	429.00	1.18

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7864E+02 EXCESS=0.0000E+00 OUTFLOW=0.7858E+02 BASIN STORAGE=0.6222E-01 PERCENT ERROR= 0.0

RT-AP11	MANE	0.46	162.47	423.60	1.16	3.00	162.46	423.00	1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8088E+02 EXCESS=0.0000E+00 OUTFLOW=0.8085E+02 BASIN STORAGE=0.3747E-01 PERCENT ERROR= 0.0

RT-AP5A	MANE	3.00	341.92	432.00	1.07	3.00	341.92	432.00	1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1521E+03 EXCESS=0.0000E+00 OUTFLOW=0.1518E+03 BASIN STORAGE=0.2915E+00 PERCENT ERROR= 0.0

RT-PM1	MANE	0.73	41.14	366.73	0.87	3.00	40.89	366.00	0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2514E+01 EXCESS=0.0000E+00 OUTFLOW=0.2513E+01 BASIN STORAGE=0.4881E-02 PERCENT ERROR= -0.1

RT-AP12	MANE	1.35	408.19	376.65	1.02	3.00	407.21	378.00	1.02

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1594E+03 EXCESS=0.0000E+00 OUTFLOW=0.1591E+03 BASIN STORAGE=0.3607E+00 PERCENT ERROR= 0.0

RT-CS1	MANE	1.50	30.16	367.50	0.64	3.00	29.97	369.00	0.64

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1819E+01 EXCESS=0.0000E+00 OUTFLOW=0.1814E+01 BASIN STORAGE=0.1499E-01 PERCENT ERROR= -0.5

RT-AP14	MANE	0.61	166.33	360.81	1.62	3.00	165.44	360.00	1.62

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1064E+02 EXCESS=0.0000E+00 OUTFLOW=0.1064E+02 BASIN STORAGE=0.1312E-01 PERCENT ERROR= -0.1

RT-AP15	MANE	0.57	222.89	362.24	1.51	3.00	222.66	363.00	1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1415E+02 EXCESS=0.0000E+00 OUTFLOW=0.1414E+02 BASIN STORAGE=0.1698E-01 PERCENT ERROR= -0.1

RT-AP16	MANE	0.13	238.73	363.01	1.64	3.00	238.72	363.00	1.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2009E+02 EXCESS=0.0000E+00 OUTFLOW=0.2009E+02 BASIN STORAGE=0.4950E-02 PERCENT ERROR= 0.0

RT-DFA	MANE	1.21	5.12	491.17	0.62	3.00	5.12	492.00	0.62

NTINUITY SUMMARY (AC-FT) - INFLOW=0.4794E+01 EXCESS=0.0000E+00 OUTFLOW=0.4790E+01 BASIN STORAGE=0.3757E-02 PERCENT ERROR= 0.0

RT-AP17	MANE	1.00	51.07	367.43	0.66	3.00	50.50	369.00	0.66

NTINUITY SUMMARY (AC-FT) - INFLOW=0.7808E+01 EXCESS=0.0000E+00 OUTFLOW=0.7801E+01 BASIN STORAGE=0.6603E-02 PERCENT ERROR= 0.0

RT-AP18	MANE	0.42	87.62	366.30	0.70	3.00	87.34	366.00	0.70

ONTINUITY SUMMARY (AC-FT) - INFLOW=0.9992E+01 EXCESS=0.0000E+00 OUTFLOW=0.9989E+01 BASIN STORAGE=0.3667E-02 PERCENT ERROR= 0.0

RT-AP19	MANE	1.95	651.34	372.45	1.02	3.00	650.95	372.00	1.02

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1927E+03 EXCESS=0.0000E+00 OUTFLOW=0.1923E+03 BASIN STORAGE=0.4095E+00 PERCENT ERROR= 0.0

RT-F1P	MANE	0.98	88.15	366.75	0.86	3.00	86.90	366.00	0.86

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5475E+01 EXCESS=0.0000E+00 OUTFLOW=0.5471E+01 BASIN STORAGE=0.5551E-02 PERCENT ERROR= 0.0

RT-DFSF	MANE	0.45	91.34	373.05	11.74	3.00	90.80	372.00	11.75

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9901E+02 EXCESS=0.0000E+00 OUTFLOW=0.9901E+02 BASIN STORAGE=-.6495E-09 PERCENT ERROR= 0.0

RT-AP22P	MANE	1.53	159.79	369.99	7.15	3.00	158.71	372.00	7.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1039E+03 EXCESS=0.0000E+00 OUTFLOW=0.1039E+03 BASIN STORAGE=0.3607E-02 PERCENT ERROR= 0.0

RT-AP23P	MANE	1.12	193.03	369.58	6.41	3.00	193.01	369.00	6.42

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1061E+03 EXCESS=0.0000E+00 OUTFLOW=0.1061E+03 BASIN STORAGE=0.3787E-02 PERCENT ERROR= 0.0

RT-AP24P	MANE	0.67	296.41	363.82	5.68	3.00	294.97	363.00	5.68

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1133E+03 EXCESS=0.0000E+00 OUTFLOW=0.1133E+03 BASIN STORAGE=0.3872E-02 PERCENT ERROR= 0.0

RT-AP25P	MANE	0.97	459.13	362.99	4.98	3.00	459.12	363.00	4.98

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1233E+03 EXCESS=0.0000E+00 OUTFLOW=0.1233E+03 BASIN STORAGE=0.9228E-02 PERCENT ERROR= 0.0

RT-AP26	MANE	3.00	487.92	495.00	1.43	3.00	487.92	495.00	1.43

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3388E+03 EXCESS=0.0000E+00 OUTFLOW=0.3376E+03 BASIN STORAGE=0.1373E+01 PERCENT ERROR= -0.1

RT-PM10	MANE	0.82	98.84	361.40	2.36	3.00	98.36	360.00	2.36

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6049E+01 EXCESS=0.0000E+00 OUTFLOW=0.6047E+01 BASIN STORAGE=0.3163E-02 PERCENT ERROR= 0.0

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

HEC-1 MODEL OUTPUT

FULLY DEVELOPED CONDITION

* 100-YEAR STORM

HEC1 S/N: 1343000062 HMVersion: 6.33 Data File: X:\870000.ALL\871611\898DBPS\PCDBPSD.DAT

```
*****************************************
*                                       *
*    FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*                MAY   1991             *
*             VERSION 4.0.1E            *
*                                       *
*   RUN DATE  08/05/1998  TIME  17:34:42 *
*                                       *
*****************************************
```

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

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

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

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

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

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

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

        1       ID   PINE CREEK DRAINAGE BASIN - 24HR, FULL DEVELOPED CONDITION (TYPE IIa100 YEAR)
        2       ID   FILE:PCDBPSD.DAT
        3       ID   FULLY DEVELOPED CONDITION MODEL
        4       ID   998 REVISION, LAST MODEL REVISION DATE:8/5/98
        5       ID   CN VALUES HAVE BEEN ADJUSTED TO PRODUCE PEAK 100 YEAR FLOW RATES SIMILAR TO
        6       ID   100 YEAR FLOW RATES PRODUCED BY RATIONAL METHOD.
        7       ID   ********************************************************************************
        8       ID   BEGIN CALCULATIONS IN THE PINE CREEK NORTH FORK WATERSHED
        9       ID   ********************************************************************************
*** FREE ***
                *DIAGRAM
       10       IT       3       0       0     300
       11       IO       5

       12       KK  SB-PN1
       13       KM   COMPUTE HYDROGRAPH FOR BASIN PN1
       14       BA    .164
       15       IN      15
       16       PB     4.4
       17       PC    0000   .0005   .0015   .0030   .0045   .0060   .0080   .0100   .0120   .0143
       18       PC   .0165   .0188   .0210   .0233   .0255   .0278   .0320   .0390   .0460   .0530
       19       PC   .0600   .0750   .1000   .4000   .7000   .7250   .7500   .7650   .7800   .7900
       20       PC   .8000   .8100   .8200   .8250   .8300   .8350   .8400   .8450   .8500   .8550
       21       PC   .8600   .8638   .8675   .8713   .8750   .8788   .8825   .8863   .8900   .8938
       22       PC   .8975   .9013   .9050   .9083   .9115   .9148   .9180   .9210   .9240   .9270
       23       PC   .9300   .9325   .9350   .9375   .9400   .9425   .9450   .9475   .9500   .9525
       24       PC   .9550   .9575   .9600   .9625   .9650   .9675   .9700   .9725   .9750   .9775
       25       PC   .9800   .9813   .9825   .9838   .9850   .9863   .9875   .9888   .9900   .9913
       26       PC   .9925   .9938   .9950   .9963   .9975   .9988  1.000
       27       LS       0    80.2
       28       UD    .188

       29       KK  SB-PN2
       30       KM   COMPUTE HYDROGRAPH FOR BASIN PN2
       31       BA    .149
       32       LS       0      79
       33       UD    .192

       34       KK  RT-PN2
       35       KM   ROUTE FLOW FROM PN2 TO AP1
       36       RD    1000     .03    .013           CIRC     4.5

       37       KK     AP1
       38       KM   COMBINE THE FLOW FROM BASIN PN1 TO THE ROUTED FLOW FROM BASIN PN2 AT AP1
       39       HC       2

       40       KK  RT-AP1
       41       KM   ROUTE AP1 TO AP2
       42       RD    2600    .033    .013           CIRC       6
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  43      KK  SB-PN3
  44      KM   COMPUTE HYDROGRAPH FOR BASIN PN3
  45      BA    .083
  46      LS       0    85.8
  47      UD    .196

  48      KK     AP2
  49      KM   COMBINE ROUTED FLOW FROM AP1 WITH FLOW FROM BASIN PN3
  50      HC       2

  51      KK  RT-AP2
  52      KM   ROUTE FLOW FROM AP2 TO AP3
  53      RD     800    .025    .013            CIRC       7

  54      KK  SB-PN4
  55      KM   COMPUTE HYDROGRAPH FOR BASIN PN4
  56      BA    .114
  57      LS       0    78.5
  58      UD    .185

  59      KK  RT-PN4
  60      KM   ROUTE FLOW FROM BASIN PN4 TO AP3
  61      RD    1000    .040    .013            CIRC       4

  62      KK  SB-PN5
  63      KM   COMPUTE HYDROGRAPH FOR BASIN PN5
  64      BA    .074
  65      LS       0    86.2
  66      UD    .175

  67      KK     AP3
  68      KM   COMBINE ROUTED FLOW RT-PN4 WITH ROUTED FLOW RT-AP2 AND FLOW FROM BASIN PN5
  69      HC       3

  70      KK  RT-AP3
  71      KM   ROUTE FLOW FROM AP3 TO DETENTION FACILITY "G"
  72      RD    1100    .025   0.013            CIRC     8.5

  73      KK  SB-PN6
  74      KM   COMPUTE HYDROGRAPH FOR BASIN PN6
  75      BA    .146
  76      LS       0    95.0
  77      UD    .127

  78      KK   APDFG
  79      KM   COMBINE ROUTED FLOW FROM AP3 WITH FLOW FROM BASIN PN6 AT REGIONAL DETENTION
  80      KM   FACILITY "G"
  81      HC       2
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  82      KK RR-DFFG
  83      KM   ROUTE FLOW THROUGH A REGIONAL DETENTION FACILITY. ASSUME A 48" DIA OUTLET
  84      KM   WITH INVERT AT EL. 59. OUTLET Q ESTIMATED WITH BUREAU OF PUBLIC ROADS
  85      KM   NOMOGRAPH FOR INLET CONTROL OF CULVERTS. VOLUME BASED ON CONCEPTUAL
  86      KM   GRADING PLAN.
  87      KO      3       1
  88      RS      1    STOR       0
  89      SV      0      .1      2.8      8.0     14.1     20.9     28.4     36.6     45.5     55.1
  90      SV   65.3    76.3    88.2
  91      SE     59      60      62       64       66       68       70       72       74       76
  92      SE     78      80      82
  93      SQ      0      10      47       93      130      160      180      203      222      240
  94      SQ    262     280     295

  95      KK  RT-DFG
  96      KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM POWERS BLVD.
  97      KM   1800 FEET WEST TO DETENTION FACILITY "F"
  98      RD   1800    .023    .045            TRAP      15       3

  99      KK  SB-PN7
 100      KM   COMPUTE HYDROGRAPH FOR BASIN PN7
 101      BA    .078
 102      LS       0    74.6
 103      UD    .165

 104      KK  SB-PN8
 105      KM   COMPUTE HYDROGRAPH FOR BASIN PN8
 106      BA    .113
 107      LS       0    80.9
 108      UD    .176

 109      KK   APDFF
 110      KM   COMBINE ROUTED FLOW RT-DFG AND FLOW FROM BASINS PN7 AND PN8 AT REGIONAL
 111      KM   DETENTION FACILITY "F"
 112      HC       3

 113      KK  RR-DFF
 114      KM   ROUTE FLOW THRU A REGIONAL DETENTION FACILITY. ASSUME A 48 DIA OUTLET WITH
 115      KM   THE INVERT DEPRESSED 2' BELOW POND INVERT. OUTLET Q ESTIMATED WITH  BUREAU
 116      KM   OF PUBLIC ROADS NOMOGRAPH FOR INLET CONTROL OF CULVERTS
 117      KO      3       1
 118      RS      1    STOR       0
 119      SV      0       0      0.1      0.7      1.5      4.4      7.8     11.7     16.1     21.0
 120      SV   26.4
 121      SE     90      92      94       96       98      100      102      104      106      108
 122      SE    110
 123      SQ      0      22      70      112      143      170      190      210      230      250
 124      SQ    265
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 125      KK  RT-DFF
 126      KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM DETENTION
 127      KM   FACILITY "F" AT THE COLLECTOR STREET CROSSING TO AP-4 AT THE WEST SIDE OF
 128      KM   BASINS PN9 AND PN10
 129      RD    1600     .02    .045           TRAP      20       3

 130      KK  SB-PN9
 131      KM   COMPUTE HYDROGRAPH FOR BASIN PN9
 132      BA    .036
 133      LS       0    72.8
 134      UD    .170

 135      KK SB-PN10
 136      KM   COMPUTE HYDROGRAPH FOR BASIN PN10
 137      BA    .043
 138      LS       0    72.7
 139      UD    .141

 140      KK     AP4
 141      KM   COMBINE ROUTED FLOW RT-DFF WITH FLOW FROM BASINS PN9 AND PN10
 142      HC       3

 143      KK  RT-AP4
 144      KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM AP4
 145      KM   TO DETENTION FACILITY "E" AT THE COLLECTOR STREET CROSSING
 146      RD    1400    .032    .045           TRAP      20       3

 147      KK SB-PN11
 148      KM   COMPUTE HYDROGRAPH FOR BASIN PN11
 149      BA   0.079
 150      LS       0    76.7
 151      UD    .189

 152      KK SB-PN12
 153      KM   COMPUTE HYDROGRAPH FOR BASIN PN12
 154      BA   0.039
 155      LS       0    68.2
 156      UD    .129

 157      KK SB-PN13
 158      KM   COMPUTE HYDROGRAPH FOR BASIN PN13
 159      BA   0.127
 160      LS       0      74
 161      UD    .195

 162      KK   APDFE
 163      KM   COMBINE ROUTED FLOW RT-AP4 WITH FLOW FROM BASINS PN11, PN12, AND PN13
 164      KM   AT REGIONAL DETENTION FACILITY "E"
 165      HC       4
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

  166     KK  RR-DFE
  167     KM   NOTE: THE INPUT POND VOLUME REFLECTS THE DESIGN POND VOLUME ON 7-23-98
  168     KM   ROUTE FLOW THRU A DETENTION FACILITY. ASSUME A 54" DIA OUTLET WITH
  169     KM   THE INVERT DEPRESSED 2' BELOW POND INVERT (INV EL=84. OUTLET Q ESTIMATED
  170     KM   WITH BUREAU OF PUBLIC ROADS NOMOGRAPH FOR INLET CONTROL OF CULVERTS
  171     KM   DISCHARGE ABOVE EL 100.3 INCLUDES FLOW OVER EMERGENCY SPILLWAY
  172     KM   SCALE 1
  173     KO       3       1
  174     RS       1    STOR       0
  175     SV       0       0    1.25    3.91    6.93   10.31   14.07   18.24   22.83   27.87
  176     SE     784     786     788     790     792     794     796     798     800     802
  177     SQ       0      25      80     136     173     210     240     263     280    1431

  178     KK  RT-DFE
  179     KM   ROUTE THE OUTFLOW FROM DETENTION FACILITY "E" IN A STORM DRAIN TO AP-5
  180     RD    1800    .025    .013            CIRC     4.5

  181     KK SB-PN14
  182     KM   COMPUTE HYDROGRAPH FOR BASIN PN14
  183     BA    .027
  184     LS       0    74.3
  185     UD    .157

  186     KK RT-PN14
  187     KM   ROUTE FLOW FROM BASIN PN14 IN A STORM DRAIN TO AP5
  188     RD    1400    .055    .013            CIRC       2

  189     KK SB-PN15
  190     KM   COMPUTE HYDROGRAPH FOR BASIN PN15
  191     BA    .074
  192     LS       0    72.7
  193     UD    .186

  194     KK     AP5
  195     KM   COMBINE ROUTED FLOW RT-PN14 TO FLOW FROM BASIN PN15
  196     HC       3

  197     KK  RT-AP5
  198     KM   ROUTE THE FLOW AT AP5 TO AP5A AT THE CONFLUENCE OF THE FLOWS FROM THE
  199     KM   NORTH AND SOUTH FORKS OF PINE CREEK
  200     RD     400    .025    .013            CIRC       5
  201     KM   ************************************************************************
  202     KM   ***** BEGIN CALCULATIONS FOR THE SOUTH FORK OF PINE CREEK WATERSHED ****
  203     KM   ************************************************************************

  204     KK  SB-PS1
  205     KM   COMPUTE HYDROGRAPH FOR BASIN PS1
  206     BA    .150
  207     LS       0    78.4
  208     UD    .205
```

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

  209     KK  RT-PS1
  210     KM   ROUTE FLOW FROM BASIN PS1 TO REGIONAL DETENTION FACILITY "G"
  211     RD    2100     .03    .013           CIRC     4.5

  212     KK  SB-PS2
  213     KM   COMPUTE HYDROGRAPH FOR BASIN PS2
  214     BA    .154
  215     LS       0    85.2
  216     UD    .188

  217     KK  SB-PS3
  218     KM   COMPUTE HYDROGRAPH FOR BASIN PS3
  219     BA    .162
  220     LS       0    84.8
  221     UD    .205

  222     KK   APDFD
  223     KM   COMBINE ROUTED FLOW RT-PS1 TO FLOW FROM BASINS PS2 AND PS3
  224     HC       3

  225     KK  RR-DFD
  226     KM   ROUTE FLOW THRU A DETENTION FACILITY
  227     KM   ASSUME BOTTOM TO BE 240'WIDE X 590' LONG W 4:1 SIDE SLOPES
  228     KM   ASSUME A 36 DIA OUTLET WITH INVERT AT POND INVERT.
  229     KM   OUTLET Q ESTIMATED WITH ORIFICE EQUATION ASSUMING c=0.60
  230     KM   AND DOWNSTEAM STORM DRAIN IN NON PRESSURE FLOW
  231     RS       1    STOR       0
  232     KO       3       1
  233     SV       0     6.8    14.3    22.4    31.1    40.6    50.8    61.8
  234     SE     100     102     104     106     108     110     112     114
  235     SQ       0      18      54      72      87      99     110     120

  236     KK  RT-DFD
  237     KM   ROUTE FLOW FROM DFD TO AP-6 AT POWERS BLVD.
  238     RD    1000    .025    .013           CIRC       3

  239     KK  SB-PS4
  240     KM   COMPUTE HYDROGRAPH FOR BASIN PS4
  241     BA    .054
  242     LS       0    93.2
  243     UD    .134

  244     KK  SB-PS5
  245     KM   COMPUTE HYDROGRAPH FOR BASIN PS5
  246     BA    .066
  247     LS       0    98.0
  248     UD    .135

  249     KK     AP6
  250     KM   COMBINE ROUTED FLOW RT-DFD WITH FLOW FROM BASINS PS4 AND PS5
  251     HC       3
```

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

  252     KK  RT-AP6
  253     KM   ROUTE FLOW FROM AP6 TO AP7 AT THE BRIARGATE BLVD./ AUSTIN BLUFFS PKWY.
  254     KM   INTERSECTION
  255     RD    2800    .025    .013           CIRC     5.5

  256     KK  SB-PS6
  257     KM   COMPUTE HYDROGRAPH FOR BASIN PS6
  258     BA    .075
  259     LS       0    86.5
  260     UD    .123

  261     KK    AP-7
  262     KM   COMBINE ROUTED FLOW RT-AP6 TO FLOW FROM BASIN PS6
  263     HC       2

  264     KK  SB-PS7
  265     KM   COMPUTE HYDROGRAPH FOR BASIN PS7
  266     BA    .089
  267     LS       0    98.0
  268     UD    .119

  269     KK    AP7A
  270     KM   COMBINE FLOW AT AP-7 TO FLOW FROM BASIN PS7
  271     HC       2

  272     KK RT-AP7A
  273     KM   ROUTE FLOW FROM AP7A TO AP8 AT THE BRIARGATE PARKWAY AND UNION BLVD.
  274     KM   INTERSECTION
  275     RD    2100    .017    .013           CIRC     7.5

  276     KK  SB-PS8
  277     KM   COMPUTE HYDROGRAPH FOR BASIN PS8
  278     BA    .122
  279     LS       0    86.0
  280     UD    .127

  281     KK     AP8
  282     KM   COMBINE ROUTED FLOW RT-AP7 TO FLOW FROM BASIN PS8 AT AP8
  283     HC       2

  284     KK  SB-PS9
  285     KM   COMPUTE HYDROGRAPH FOR BASIN PS9
  286     BA    .128
  287     LS       0    95.3
  288     UD    .130

  289     KK     AP9
  290     KM   COMBINE FLOW AT AP-8 TO FLOW FROM BASIN PS9 AT AP9
  291     HC       2
```

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

292       KK SB-PS10
293       KM   COMPUTE HYDROGRAPH FOR BASIN PS10
294       BA    .038
295       LS      0    72.9
296       UD    .160

297       KK   APDFC
298       KM   COMBINE FLOW AT AP-9 TO FLOW FROM SB-PS10 IN REGIONAL DETENTION FACILITY "C"
299       KM   THIS IS THE TOTAL INFLOW TO DETENTION FACILITY "C"
300       HC      2

301       KK  RR-DFC
302       KM   ROUTE FLOW THRU A DETENTION FACILITY.  ASSUME A 48 DIA OUTLET WITH THE
303       KM   INVERT AT EL 62.  OUTLET Q ESTIMATED WITH BUREAU OF PUBLIC ROADS NOMOGRAPH
304       KM   FOR INLET CONTROL OF CULVERTS, SCALE 1.
305       KO      3       1
306       RS      1    STOR       0
307       SV      0    2.73    9.72   18.56   28.03   38.15   48.95   60.45   72.75   85.85
308       SV  99.66
309       SE     62      64      66      68      70      72      74      76      78      80
310       SE     82
311       SQ      0      23      70     110     140     168     190     215     232     245
312       SQ    258

313       KK  RT-DFC
314       KM   ROUTE OUTFLOW FROM POND "C" WEST DOWN A STORM DRAIN IN BRIARGATE PKWY.
315       KM   TO AP10 AT DETENTION FACILITY "B"
316       RD   2400    .035    .013           CIRC       4

317       KK SB-PS11
318       KM   COMPUTE HYDROGRAPH FOR BASIN PS11
319       BA    .056
320       LS      0    80.3
321       UD    .172

322       KK   AP10
323       KM   COMBINE ROUTED FLOW RT-DFC TO FLOW FROM SB-PS11
324       HC      2

325       KK SB-PS12
326       KM   COMPUTE HYDROGRAPH FOR BASIN PS12
327       BA    .153
328       LS      0    69.0
329       UD    .233

330       KK   APDFB
331       KM   COMBINE FLOW AT AP10 TO FLOW FROM BASIN PS12
332       HC      2
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

333       KK  RR-DF8
334       KM   ROUTE FLOW THROUGH REGIONAL DETENTION POND "8"
335       KM   THIS VOLUME REFLECTS THE DESIGN VOLUME PER PRELIMINARY PLANS ON 7-23-98
336       KM   WITH 54" DIA OUTLET SET AT INVERT ELEV. 70.2. OUTLET Q ESTIMATED WITH
337       KM   BUREAU OF PUBLIC ROADS NOMO GRAPH FOR INLET CONTROL OF CONCRETE PIPE
338       KM   DISCHARGE ABOVE 87.6 INCLUDES FLOW OVER 80' LONG EMERGENCY SPILLWAY
339       KM   SCALE 1
340       KO       3       1
341       RS       1    STOR       0
342       SV       0    0.06    1.17    3.30    5.82    8.73   12.07   15.85   20.07   23.60
343       SV   24.76   29.96
344       SE    71.2    72.0      74      76      78      80      82      84      86    87.6
345       SE      88      90
346       SQ       0      22      73     130     169     202     236     260     285     301
347       SQ     371    1222

348       KK  RT-DF8
349       KM   ROUTE FLOW 1000 LF NORTHWEST IN A STORM DRAIN FROM DETENTION FACILITY "8"
350       KM   TO AP-11
351       RD    1000    .021    .013           CIRC     4.5

352       KK SB-PS13
353       KM   COMPUTE HYDROGRAPH FOR BASIN PS13
354       BA    .065
355       LS       0    74.1
356       UD    .149

357       KK    AP11
358       KM   COMBINE ROUTED FLOW RT-DF8 TO FLOW FROM BASIN PS13 AT AP11
359       HC       2

360       KK RT-AP11
361       KM   ROUTE FLOW 600 LF NORTHWEST IN A STORM DRAIN FROM AP11 TO AP5A (THE
362       KM   CONFLUENCE OF FLOWS FROM THE NORTH AND SOUTH FORKS OF PINE CREEK)
363       RD     600    .021    .013           CIRC       5

364       KK    AP5A
365       KM   COMBINE ROUTED FLOW AP5 (FLOW FROM THE NORTH FORK OF PINE CREEK) TO ROUTED
366       KM   FLOW RT-AP11 (FLOW FROM THE SOUTH FORK OF PINE CREEK)
367       HC       2

368       KK RT-AP5A
369       KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL 1300 FEET DOWN THE CHANNEL FROM
370       KM   AP5A NEAR THE HISTORIC CONFLUENCE OF PINE CREEK TO AP12 AT THE CONFLUENCE
371       KM   OF THE MAIN CHANNEL AND THE LEXINGTON DRIVE STORM DRAIN OUTFALL. USE AN
372       KM   APPROXIMATE AVERAGE CHANNEL SECTION AND SLOPE FOR ROUTING.
373       RD    1300    .023    .045           TRAP      50       2

374       KK  SB-PM1
375       KM   COMPUTE HYDROGRAPH FOR BASIN PM1
376       BA    .054
377       LS       0    78.5
378       UD    .203
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

379       KK  RT-PM1
380       KM   ROUTE THE FLOW FROM BASIN PM1 1200 LF NORTH IN THE LEXINGTON DR. S.D. TO
381       KM   PINE CREEK MAIN CHANNEL.
382       RD    1200     .08    .013            CIR     3.5

383       KK  SB-PM2
384       KM   COMPUTE HYDROGRAPH FOR BASIN PM2, AN AREA OF THE GOLF COURSE
385       BA    .154
386       LS       0    66.0
387       UD    .310

388       KK  SB-PM3
389       KM   COMPUTE HYDROGRAPH FOR BASIN PM3
390       BA    .067
391       LS       0    73.5
392       UD    .248

393       KK   AP12
394       KM   COMBINE ROUTED FLOW RT-PM1 WITH THE ROUTED FLOW IN PINE CREEK MAIN CHANNEL
395       KM   AND THE FLOW FROM BASINS PM2 AND PM3
396       HC       4

397       KK RT-AP12
398       KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM AP12 NEAR THE
399       KM   OUTFALL OF LEXINGTON DRIVE STORM DRAIN TO THE CROSSING AT CHAPEL HILLS DRIVE
400       KM   USE AN APPROXIMATE AVERAGE CHANNEL SECTION AND SLOPE FOR ROUTING.
401       RD    1600    .018    .045            TRAP      30       2

402       KK  SB-PM4
403       KM   COMPUTE HYDROGRAPH FOR BASIN PM4
404       BA    .111
405       LS       0    71.9
406       UD    .170

407       KK   AP13
408       KM   COMBINE FLOW FROM BASIN PM4 TO THE ROUTED FLOW RT-AP12 IN PINE CREEK MAIN
409       KM   CHANNEL ON THE EAST SIDE OF THE CHAPEL HILLS DRIVE CROSSING
410       HC       2
411       KM   ********************************************************************************
412       KM   ********BEGIN SOUTH CHAPEL HILLS DRIVE STORM DRAIN WATERSHED*****************
413       KM   ********************************************************************************

414       KK  SB-CS1
415       KM   COMPUTE HYDROGRAPH FOR BASIN CS1
416       BA    .053
417       LS       0    73.6
418       UD    .181

419       KK  RT-CS1
420       KM   ROUTE FLOW 1300 LF WEST IN DYNAMIC DR.  ASSUME BULK OF FLOW IS ON THE SURFACE
421       RD    1300    .021    .013            TRAP      32     .01
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

422       KK  SB-CS2
423       KM   COMPUTE HYDROGRAPH FOR BASIN CS1
424       BA    .070
425       LS       0    98.0
426       UD    .101

427       KKRR-DFCS2
428       KM   ROUTE FLOW THRU AN ASSUMED DETENTION FACILITY TO REFLECT DETENTION OF 1.6cfs
429       KM   /ACRE FROM THE LI/O PROPERTY AS ASSUMED IN THE MDDP FOR BRIARGATE BUSINESS
430       KM   CAMPUS. BECAUSE THE DISCHARGE CONFIGURATION IS UNKNOWN AT THIS TIME ASSUME
431       KM   THAT THE PEAK DISCHARGE RATE MAY BE DISCHARGED AS SOON AS IT IS AVAILABLE AT
432       KM   THE POND TO REFLECT POTENTIAL FREE DISCHARGE FROM A PORTION OF THE SUBBASIN
433       KM   DISCHARGE REDUCTION ASSUMED AT 1.6 cfs x 37ac=60 cfs
434       RS       1    STOR       0
435       SV       0    .001       6      10
436       SE     100     102     104     106
437       SQ       0     194     194     194

438       KK    AP14
439       KM   COMBINE ROUTED FLOW RT-CS1 TO CONTROLED FLOW FROM BASIN CS2 AT THE
440       KM   INTERSECTION OF CHAPEL HILLS DR. AND DYNAMIC DR.
441       HC       2

442       KK RT-AP14
443       KM   ROUTE FLOW 1100 LF NORTH IN THE CHAPEL HILLS DR. S.D. TO BRIARGATE PKWY.
444       KM   NOTE: THE CALCULATED 100 YEAR FLOW IS IN EXCESS OF THE FULL PIPE CAPACITY
445       KM   OF THE STORM DRAIN BETWEEN DYNAMIC DRIVE AND BRIARGATE PARKWAY. SOME OF
446       KM   THE FLOW MAY BE ON THE SURFACE IN CHAPEL HILLS DRIVE.
447       RD    1100     .02    .013             CIR       4

448       KK  SB-CS3
449       KM   COMPUTE HYDROGRAPH FOR BASIN CH3
450       BA    .053
451       LS       0    84.8
452       UD    .177

453       KKRR-DFCS3
454       KM   ROUTE FLOW THRU AN ASSUMED DETENTION FACILITY TO REFLECT DETENTION REDUCING
455       KM   THE PEAK 100YR FLOW RATE FROM THE 9 ACRES OF THE BASIN THAT ARE DESIGNATED
456       KM   AS LI/O USE AS ASSUMED IN MDDP FOR BRIARGATE BUSINESS CAMPUS.
457       KM   BECAUSE THE DISCHARGE CONFIGURATION IS UNKNOWN AT THIS TIME ASSUME
458       KM   THAT THE PEAK DISCHARGE RATE MAY BE DISCHARGED AS SOON AS IT IS AVAILABLE
459       KM   AT THE POND TO REFLECT FREE DISCHARGE FROM A PORTION OF THE SUB BASIN.
460       KM   DISCHARGE REDUCTION ASSUMED AT 1.6 cfs x 9=14 cfs
461       RS       1    STOR       0
462       SV       0    .001       6      10
463       SE     100     102     104     106
464       SQ       0     123     123     123
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

465       KK    AP15
466       KM   COMBINE ROUTED FLOW RT-AP14 WITH CONTROLLED FLOW FROM BASIN CS3 AT THE
467       KM   INTERSECTION OF CHAPEL HILLS DR. AND BRIARGATE PARKWAY. NOTE A SMALL PORTION
468       KM   OF BASIN CS3 IS LOCATED DOWNSTEAM OF THIS POINT. FOR THIS MODELING PURPOSE
469       KM   THIS IS CONSIDERED INSIGNIFICANT.
470       HC       2

471       KK RT-AP15
472       KM   ROUTE FLOW 1400 LF NORTH IN THE CHAPEL HILLS DR. S.D.
473       KM   NOTE: THE CALCULATED 100 YEAR FLOW IS IN EXCESS OF THE FULL PIPE CAPACITY
474       KM   OF THE STORM DRAIN BETWEEN BRIARGATE PARKWAY AND PINE CREEK. SOME OF
475       KM   THE FLOW MAY BE ON THE SURFACE IN CHAPEL HILLS DRIVE. A SMALL PORTION OF
476       KM   THE SURFACE FLOW MAY BE DIVERTED DOWN BRIARGATE PARKWAY, BUT FOR THE PURPOSE
477       KM   OF THIS ANALYSIS ALL OF THE FLOW FROM THE CHAPEL HILLS DRIVE/BRIARGATE PKY.
478       KM   INTERSECTION IS ASSUMED TO REACH PINE CREEK AT CHAPEL HILLS DRIVE.
479       RD    1400    .045    .013            CIR     4.5

480       KK  SB-CS4
481       KM   COMPUTE HYDROGRAPH FOR BASIN CS4
482       BA    .053
483       LS       0    95.5
484       UD    .101

485       KK RR-DFVC
486       KM   ROUTE FLOW THRU THE PROPOSED VILLAGE CENTER DETENTION FACILITY
487       KM   POND GRADING PER THE PRELIMINARY GRADING SHOWN IN THE MDDP FOR VILLAGE
488       KM   CENTER. DISCHARGE ASSUMES USE OF THE EXISTING 18" DIAMETER STUB.
489       KM   WITH THE INVERT SET AT ELEVATION 73. BUREAU OF PUBLIC ROADS NOMOGRAPH
490       KM   USED TO ESTIMATE OUTFLOW RATES ASSUMING INLET CONTROL.
491       RS       1    STOR       0
492       SV     000    .032    1.67    3.23    5.00    7.00
493       SE      73      74      76      78      80      82
494       SQ       0       3      13      17      20      22

495       KK    AP16
496       KM   COMBINE ROUTED FLOW RT-AP15 WITH THE DISCHARGE FROM THE VILLAGE CENTER POND
497       HC       2

498       KK RT-AP16
499       KM   ROUTE THE FLOW IN THE CHAPEL HILLS DRIVE STORM DRAIN FROM AP16 TO AP19 IN
500       KM   PINE CREEK MAIN CHANNEL ON THE DOWNSTREAM SIDE OF THE CHAPEL HILLS DRIVE
501       KM   CROSSING
502       RD     300     .03    .013            CIR     4.5
503       KM   ********************************************************************************
504       KM   ****BEGIN CALCULATION OF THE NORTH CHAPEL HILLS DR. STORM DRAIN WATERSHED***
505       KM   ********************************************************************************

506       KK  SB-CN1
507       KM   COMPUTE RUNOFF FROM BASIN CN1 THE WATERSHED CONTRIBUTING TO THE PARK SITE AT
508       KM   CHAPEL HILLS DRIVE POND (REGIONAL DETENTION FACILITY "A").
509       BA    .145
510       LS       0    76.8
511       UD    .190
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

512       KK  RR-DFA
513       KM   ROUTE THE FLOW FROM CN1 THROUGH THE PROPOSED DETENTION POND AT THE PARK
514       KM   SITE AT CHAPEL HILLS DRIVE. STAGE STORAGE CURVE PER THE 12/22/97 GRADING PLAN
515       KM   DISCHARGE CURVE REFLECTS 12" DIAMETER OUTLET PIPE CONTROL FOR NORMAL DISCHARG
516       KM   AND A 100' LONG EMERGENGY SPILLWAY SET AT ELEVATION 6805.5
517       KO      3       1
518       RS      1    STOR       0
519       SV      0     .01     .22     .99    1.95    2.80    4.25    5.31    6.51   11.64
520       SV  15.36
521       SQ   2.35    2.54    3.00    3.73    4.35    4.75    5.36    5.50    8.39    9.01
522       SQ    279
523       SE 6796.6  6797.0  6798.0  6800.0  6802.0  6803.5 6803.51    6804  6804.1  6805.5
524       SE 6806.5

525       KK  RT-DFA
526       KM   ROUTE OUTFLOW FROM  REGIONAL DETENTION POND "A" DOWN THE CHAPEL HILLS STORM
527       KM   DRAIN FROM LEXINGTON DRIVE TO TREELAKE DRIVE
528       RD    930     .04    .013           CIRC     1.5

529       KK  SB-CN2
530       KM   COMPUTE RUNOFF FROM BASIN CN2
531       BA    .078
532       LS      0    75.5
533       UD    .214

534       KK   AP17
535       KM   COMBINE ROUTED FLOW RT-DFA AND FLOW FROM BASIN CN2 AT THE INTERSECTION OF
536       KM   CHAPEL HILLS DRIVE AND TREELAKE DRIVE
537       HC      2

538       KK RT-AP17
539       KM   ROUTE FLOW AT AP17 DOWN THE CHAPEL HILLS DRIVE STORM DRAIN TO MULLIGAN DR.
540       RD   1400     .05    .013           CIRC     3.5

541       KK  SB-CN3
542       KM   COMPUTE RUNOFF FROM BASIN CN3
543       BA    .043
544       LS      0    80.0
545       UD    .157

546       KK   AP18
547       KM   COMBINE ROUTED FLOW RT-AP17 TO FLOW FROM BASIN CN3 AT INTERSECTION OF CHAPEL
548       KM   HILLS DR. AND MULLIGAN DR.
549       HC      2

550       KK RT-AP18
551       KM   ROUTE FLOW AT AP18 DOWN THE CHAPEL HILLS DRIVE STORM DRAIN TO AP19 IN THE
552       KM   PINE CREEK MAIN CHANNEL ON THE DOWNSTREAM SIDE OF THE CHAPEL HILLS DRIVE
553       KM   CROSSING. NOTE A SMALL PORTION OF BASIN CHN3 IS LOCATED SOUTH OF AP18. THIS
554       KM   IS CONSIDERED INSIGNIFICANT FOR THE PURPOSE OF THIS ANALYSIS.
555       RD    600     .04    .013           CIRC     3.5
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

556       KK   AP19
557       KM   COMBINE ROUTED FLOW RT-AP18 FROM THE NORTH CHAPEL HILLS DR. STORM DRAIN
558       KM   WITH THE ROUTED FLOW RT-AP16 FROM THE SOUTH CHAPEL HILLS DRIVE STORM DRAIN
559       KM   AND THE FLOW IN PINE CREEK MAIN CHANNEL (AP13) AT THE WEST SIDE OF THE CHAPEL
560       KM   HILLS DRIVE CROSSING. FLOW THAT IS TAKEN INTO THE PINE CREEK CHANNEL FORM THE
561       KM   STREET AT THIS POINT HAS BEEN ACCOUNTED FOR IN BASINS CN3 AND CS3. THIS WAS
562       KM   DONE TO REDUCE THE COMPLEXITY OF THE MODEL.
563       HC      3

564       KK RT-AP19
565       KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL FROM AP19 AT THE CHAPEL HILLS DRIVE
566       KM   CROSSING TO AP20 AT REGIONAL DETENTION FACILITY 1 AT BRIARGATE PARKWAY AND
567       KM   HIGHWAY 83. USE AVERAGE SLOPES AND APPROXIMATE CROSS SECTIONS FOR ROUTING.
568       RD    750   .035   .045          TRAP     30      2
569       RD   1000   .025   .045          TRAP    120      2
570       RD   1400   .026   .045          TRAP     60      2

571       KK  SB-PM5
572       KM   COMPUTE HYDROGRAPH FOR BASIN PM5
573       BA    .183
574       LS      0   70.0
575       UD    .185

576       KK   AP20
577       KM   COMBINE FLOW FROM BASIN PM6 WITH THE ROUTED FLOW IN PINE CREEK
578       HC      2

579       KK  SB-PM6
580       KM   COMPUTE HYDROGRAPH FOR PM6 THE AREA BETWEEN CHAPEL HILLS DR. AND DETENTION
581       KM   FACILITY 1 BOUNDED BY THE GOLF COURSE AND BRIARGATE PARKWAY. NOTE:THE MDDP
582       KM   FOR BRIARGATE BUSINESS CAMPUS REQUIRES DETENTION IN THIS SUBBASIN. FOR THE
583       KM   PURPOSE OF THIS ANALYSIS NO DETENTION IS ASSUMED TO ALLOW THE DEVELOPER THE
584       KM   OPTION OF CONSTRUCTING LARGER CONVEYANCE FACILITIES TO DETENTION FACILITY
585       KM   No. 1 AND ALLOWING FREE DISCHARGE FROM THE BASIN.
586       BA    .088
587       LS      0     98
588       UD    .110

589       KK   AP21
590       KM   COMBINE FLOW FROM PM6 WITH THE FLOW IN PINE CREEK AT AP21 FOR THE TOTAL FLOW
591       KM   IN PINE CREEK CHANNEL AS IT ENTERS DETENTION FACILITY No 1
592       HC      2

593       KK  SB-PM7
594       KM   COMPUTE HYDROGRAPH FOR BASIN PM7 THE AREA NORTH OF DETENTION FACILITY 1
595       KM   NOTE: THE MDDP FOR THE BRIARGATE BUSINESS CAMPUS REQUIRES DETENTION IN
596       KM   THE NON RESIDENTIAL PORTIONS OF THIS AREA. FOR THE PURPOSE OF THIS ANALYSIS
597       KM   FREE DISCHARGE FROM THE BASIN IS ASSUMED. THE RESIDENTIAL PORTION OF THE
598       KM   BASIN LOCATED IN OUTSIDE THE CITY LIMITS IS ASSUMED TO BE FULLY DEVELOPED
599       KM   AS 1 DU PER ACRE RESIDENTIAL.
600       BA    .138
601       LS      0   76.3
602       UD    .353
603       KM   ***************************************************************************
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 604      KM   ****BEGIN CALCULATIONS FOR THE FOCUS ON THE FAMILY STORM DRAIN WATERSHED****
 605      KM   ********************************************************************************

 606      KK   SB-F1
 607      KM   COMPUTE HYDROGRAPH FOR BASIN F1
 608      BA    .119
 609      LS      0    78.3
 610      UD    .208

 611      KK     F1P
 612      KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY ASSUMING
 613      KM   FULL PIPE FLOW IN 36" DIA @3.44% FROM THE SAG POINT IN LEXINGTON DRIVE.
 614      KM   FULL FLOW CAPACITY= 123cfs
 615      DT     F1S
 616      DI     123     150     200     250
 617      DQ       0      27      77     127

 618      KK  RT-F1P
 619      KM   ROUTE FLOW IN THE STORM DRAIN 1300 LF WEST FROM THE SAG PT. IN LEXINGTON
 620      KM   DRIVE TO SUMMER FIELD POND
 621      RD    1300    .036    .013           CIRC       3

 622      KK   SB-F2
 623      KM   COMPUTE HYDROGRAPH FOR BASIN F2
 624      BA    .039
 625      LS      0      74
 626      UD    .171

 627      KK  SB-F1S
 628      KM   RETRIEVE FLOW THAT WILL NOT FIT IN THE STORM DRAIN AT LEXINGTON DRIVE
 629      DR     F1S

 630      KK  RT-F1S
 631      KM   ROUTE THE EXCESS FLOW THAT IS ON THE SURFACE OF LEXINGTON DRIVE AT THE SAG
 632      KM   POINT OVERLAND IN A GRASS LINED SWALE TO THE SUMMERFIELD DETENTION BASIN
 633      RD    1300    .037    .040           TRAP      15       6

 634      KK AP-DFSF
 635      KM   COMBINE ROUTED FLOWS RT-F1S AND RT-F1P WITH FLOW FROM F2 AT THE SUMMER
 636      KM   FIELD POND. THIS IS THE TOTAL FLOW TO THE POND
 637      HC       3

 638      KK RR-DFSF
 639      KM   ROUTE THE FLOW AT AP-DFSF THROUGH THE SUMMER FIELD DETENTION BASIN.
 640      KM   THE INFLOW/OUTFLOW S.D. FOR THIS FACILITY IS BURIED BELOW THE POND BOTTOM.
 641      KM   THE POND FILLS WHEN THE CAPACITY OF THE DOWNSTREAM REACH OF S.D. IS
 642      KM   EXCEEDED. THIS CONFIGURATION PRESENTS A COMPLEX HYDRAULIC PROBLEM. IT IS
 643      KM   ASSUMED THAT UNTIL INFLOW >120cfs FLOW WILL PASS THROUGH THE STORM DRAIN.
 644      KM   WHEN INFLOW > 120cfs BACKWATER WILL FORM AT THE OUTLET AND THE LID ON THE
 645      KM   UPSTREAM MANHOLE WILL LIKELY BE LIFTED OFF AND SOME FLOW WILL ENTER THE POND
 646      KM   FROM THAT POINT. WHEN INFLOW>120cfs IT IS ASSUMED THAT THE HEAD LOSS AT
 647      KM   THE OUTLET WILL BE APPOXIMATELY 1*VELOCITY HEAD FOR THE PURPOSE OF
 648      KM   CALCULATING THE DISCHARGE CURVE.
 649      KO       3       1
 650      RS       1    STOR       0
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 651      SV       0    0.57    4.63    6.87   10.32
 652      SE      92      94      96      98     100
 653      SQ     120     126     131     137     144

 654      KK RT-DFSF
 655      KM   ROUTE OUTFLOW FROM THE DETENTION BASIN IN A 48" S.D. TO RESEARCH PKWY.
 656      RD     800    .018    .013            CIRC       4

 657      KK   SB-F3
 658      KM   COMPUTE HYDROGRAPH FOR BASIN F3
 659      BA    .114
 660      LS       0    77.0
 661      UD    .215

 662      KK    AP22
 663      KM   COMBINE ROUTED FLOW RT-DTSF TO FLOW FROM BASIN F3 AT THE INTERSECTION OF
 664      KM   RESEARCH PARKWAY AND SUMMERSET DRIVE.
 665      HC       2

 666      KK   AP22P
 667      KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
 668      KM   INTERSECTION OF RESEARCH PARKWAY AND SUMMERSET DRIVE. CONTROLLING
 669      KM   DOWNSTREAM STORM DRAIN IS A 60" DIA RCP @ S=1%, FULL FLOW CAPACITY= 260cfs
 670      KM   THE DIVERTED FLOW IS ASSUMED TO RUN DOWN SUMMERSET DR. SOUTH OF RESEARCH
 671      KM   PARKWAY AND EVENTUALLY TO COTTONWOOD CREEK.
 672      DT   AP22S
 673      DI     260     261     280     300     320     340     360     380
 674      DQ       0       1      20      40      60      80     100     120

 675      KKRT-AP22P
 676      KM   ROUTE THE S.D.FLOW FROM THE BRIARGATE PKWY/ SUMMERSET INTERSECTION TO THE
 677      KM   INTERSECTION OF RESEARCH PKWY. AND CHAPEL HILLS DR.
 678      RD    2100     .02    .013            CIRC       5

 679      KK   SB-F4
 680      KM   COMPUTE HYDROGRAPH FOR BASIN F4
 681      BA    .038
 682      LS       0    83.0
 683      UD    .197

 684      KK RR-DFF4
 685      KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
 686      KM   RATE OF 1.6 CFS/ACRE FROM THE 11.5 AC THAT WILL BE DEVELOPED AS LI/O
 687      KM   DISCHARGE REDUCTION PER ACRE IS DETERMINED PER THE RATE AND AREA INCLUDED
 688      KM   IN THE MDDP FOR BRIARGATE BUSINESS CAMPUS
 689      KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
 690      KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE SITE WILL LIKELY
 691      KM   FREE DISCHARGE TO THE ADJACENT STREET
 692      KM   DISCHARGE REDUCTION = LI/O AREA (acres)11.5 x 1.6 cfs = 18.4 cfs
 693      RS       1    STOR       0
 694      SV       0    .001       6      10
 695      SE     100     102     104     106
 696      SQ       0    70.6    70.6    70.6
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

697       KK   AP23
698       KM   COMBINE ROUTED FLOW RT-AP22P TO FLOW FROM BASIN F4 AT THE INTERSECTION OF
699       KM   RESEARCH PARKWAY AND CHAPEL HILLS DR.
700       HC      2

701       KK   AP23P
702       KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
703       KM   FIRST MANHOLE (MH8) DOWNSTREAM OF THE INTERSECTION OF RESEARCH PARKWAY AND
704       KM   CHAPEL HILLS DRIVE. THE MANHOLE IS LOCATED JUST UPSTREAM OF A PIPE SIZE
705       KM   REDUCTION FROM 54" TO 48" DIA.. IT IS ASSUMED THAT THE MH LID WILL BE PUSHED
706       KM   OFF BY THE HIGH HGL ABOVE THE TRANSITION AT THE ESTIMATED 100 YEAR PEAK
707       KM   FLOW RATE. DOWNSTREAM PIPE CAPACITY IS ESTIMATED AT 298 cfs BASED ON
708       KM   FULL PIPE CONVEYANCE CAPACITY OF 48" DIA RCP, SLOPE = 4.3%
709       DT   AP23S
710       DI     298     300     325     350     375     400     425     450     470
711       DQ       0       2      27      52      77     102     127     152     172

712       KKRT-AP23P
713       KM   ROUTE THE FLOW IN THE STORM DRAIN FROM THE RESEARCH PKWY/CHAPEL HILLS DR.
714       KM   INTERSECTION TO THE INTERSECTION OF EXPLORER DRIVE AND THE FOCUS ON THE
715       KM   FAMILY S.D.
716       RD    2100    .044    .013            CIRC       4

717       KK   AP23S
718       KM   RETRIEVE THE DIVERTED FLOW AT MH8 JUST DOWNSTREAM OF THE INTERSECTION OF
719       KM   RESEARCH PARKWAY AND CHAPEL HILLS DRIVE. THIS IS SURFACE FLOW.
720       DR   AP23S

721       KKRT-AP23S
722       KM   ROUTE THE SURFACE FLOW AT MH8 ACCROSS THE FOCUS SITE TO EXPLORER DRIVE
723       KM   ASSUME FLOW WILL BE SHALLOW AND WIDE THROUGH THE PARKING LOTS
724       RD    1550    .042    .015            TRAP       75     .01

725       KK   SB-F5
726       KM   COMPUTE HYDROGRAPH FOR BASIN F5
727       BA    .064
728       LS       0    95.5
729       UD    .121

730       KK RR-DFF5
731       KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
732       KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
733       KM   AND HISTORIC PEAK 100 YR FLOW RATE PER THE ORIGINAL DBPS CRITERIA FOR LI/O
734       KM   LAND USE. HISTORIC 100 YR PEAK ESTIMATED AT 1.5 CFS/AC. FULLY DEVELOPED 100
735       KM    YR PEAK ESTIMATED AT 5.6 CFS/AC. ESTIMATED REQUIRED DETENTION =
736       KM   (5.6-1.5)*.35*35AC=50cfs   TOTAL Qin=225cfs
737       KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
738       KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
739       KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
740       RS       1    STOR       0
741       SV       0    .001       6      10
742       SE     100     102     104     106
743       SQ       0     175     175     175
```

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

744       KK   AP24
745       KM   COMBINE THE ROUTED FLOW IN THE S.D.(RTAP102) TO FLOW FROM FF1 AND THE SURFACE
746       KM   FLOW THAT WAS DIVERTED THROUGH THE FOCUS SITE FROM MH8(RP102A) AT THE
747       KM   INTERSECTION OF EXPLORER DRIVE AND THE FOCUS ON THE FAMILY STORM DRAIN.
748       HC     3

749       KK   AP24P
750       KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
751       KM   INTERSECTION OF EXPLORER DRIVE AND TELSTAR DRIVE. DOWNSTREAM
752       KM   STORM DRAIN IS A 66" DIA RCP @ S=1.1%, FULL FLOW CAPACITY= 350cfs
753       KM   ASSUME THIS DIVERTED FLOW WILL GO WEST DOWN TELSTAR DRIVE
754       DT   AP24S
755       DI    350    351    370    390    410    430    450    470    490
756       DQ      0      1     20     40     60     80    100    120    140

757       KKRT-AP24P
758       KM   ROUTE THE FLOW IN THE FOCUS STORM DRAIN FROM AP24 AT THE INTERSECTION OF
759       KM   EXPLORER DRIVE AND THE FOCUS S.D. TO AP25 AT THE INTERSECTION OF EXPLORER
760       KM   DRIVE & BRIARGATE PKWY
761       RD    800   .011   .013          CIRC    5.5

762       KK   SB-F6
763       KM   COMPUTE HYDROGRAPH FOR BASIN F6
764       BA   .038
765       LS     0   98.0
766       UD   .106

767       KK RR-DFF6
768       KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
769       KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
770       KM   AND HISTORIC PEAK 100 YR FLOW RATE. HISTORIC ESTIMATED AT 1.5 CFS/AC.
771       KM   FULLY DEVELOPED ESTIMATED AT 6.0 CFS/AC. ESTIMATED REQUIRED DETENTION =
772       KM   (6.0-1.5)*.35*21.5AC=34cfs   TOTAL Qin=138cfs
773       KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
774       KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
775       KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
776       RS     1   STOR     0
777       SV     0   .001     6     10
778       SE   100    102   104    106
779       SQ     0    104   104    104

780       KK   SB-F7
781       KM   COMPUTE HYDROGRAPH FOR BASIN F7
782       BA   .052
783       LS     0   93.0
784       UD   .137

785       KK RR-DFF7
786       KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
787       KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
788       KM   AND HISTORIC PEAK 100 YR FLOW RATE. HISTORIC ESTIMATED AT 1.5 CFS/AC.
789       KM   FULLY DEVELOPED ESTIMATED AT 5.2 CFS/AC. ESTIMATED REQUIRED DETENTION =
790       KM   (5.2-1.5)*.35*29AC=38cfs   TOTAL Qin=170cfs
791       KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
```

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

792       KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
793       KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
794       RS      1    STOR       0
795       SV      0    .001       6      10
796       SE    100     102     104     106
797       SQ      0     132     132     132

798       KK    AP25
799       KM   COMBINE ROUTED FLOW RT-AP25P TO CONTROLLED FLOW FROM BASINS F6 AND F7
800       KM   AT THE INTERSECTION OF EXPLORER DR AND BRIARGATE PKWY.
801       HC      3

802       KK   AP25P
803       KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
804       KM   INTERSECTION OF EXPLORER DR. AND BRIARGATE PARKWAY. CONTROL APPEARS TO
805       KM   BE DOWNSTREAM 54" DIA S.D. @ 5.5% SLOPE, FULL PIPE CAPACITY=461cfs
806       KM   DIVERTED FLOW IS ASSUMED TO FLOW DOWM BRIARGATE PARKWAY TO THE SUMP
807       KM   ADJACENT TO FACILITY #1
808       DT   AP25S
809       DI    461     464     475     500     525     550     575     600     625
810       DQ      0       1      14      39      64      89     114     139     164

811       KKRT-AP25P
812       KM   ROUTE THE FLOW IN THE S.D.FROM THE INTERSECTION OF EXPLORER DR. & BRIARGATE
813       KM   PARKWAY TO DETENTION FACILITY 1 AT BRIARGATE PKWY & HIGHWAY 83
814       RD    1250    .011    .013            CIRC     5.5

815       KK  SB-PM8
816       KM   COMPUTE HYDROGRAPH FOR BASIN PM8 THE PORTION OF BRIARGATE PARKWAY BETWEEN
817       KM   EXPLORER DR. AND HIGHWAY 83
818       BA    .014
819       LS      0      98
820       UD    .100

821       KK AP-DF#1
822       KM   ADD THE FLOW FROM THE FOCUS ON THE FAMILY STORM DRAIN, BASINS PM7 AND PM8,
823       KM   AND FLOW IN PINE CREEK FOR THE TOTAL INFLOW TO DETENTION FACILITY 1
824       HC      4

825       KK RR-DF#1
826       KM   ROUTE FLOW THRU DETENTION FACILITY NO.1. VOLUME MODIFIED TO REFLECT PROPOSED
827       KM   ENLARGEMENT. PROPOSED ENLARGEMENT IS TO ADD A MINIMUM OF 0.7 ACRES OF SURFACE
828       KM   AREA TO EACH OF THE CONTOURS AT OR ABOVE ELEVATION 58. OUTLET MODELED
829       KM   ASSUMING THE TOP 7.5' OF THE ENTRANCE TO THE 10'R X 12'S HIGH BOX CULVERT IS
830       KM   BLOCKED AND A NEW 12' WIDE OPENING IS CREATED W/ INVERT AT 67.2
831       KM   OUTFLOW CURVE CALCULATED WITH A SPREADSHEET TREATING THE LOWER OPENING AS
832       KM   A SUBMERGED ORIFICE WITH C=.60, h=POND DEPTH - NORMAL DEPTH IN THE OUTFALL
833       KM   AND THE UPPER OPENING TO ELEVATION 73.0 TREATED AS A SHARP CRESTED WEIR WITH
834       KM   A FULL LENGTH OF 12.77' (THE SKEW LENGTH) ADJUSTED 0.2h FOR END CONTRACTIONS
835       KM   AND C=3.22+0.40(h/P) WHERE P=14.2. ABOVE ELEVATION 73.0 THE TOP OUTLET
836       KM   STRUCTURE IS ASSUMED TO TERMINATE WITHOUT A TOP AND THUS ADDITIONAL FLOW CAN
837       KM   OVER TOP THE SIDES AND BACK OF THE ASSUMED 3 SIDED  STRUCTURE 12.77 x 10
838       KO      3       1
839       RS      1    STOR       0
840       SA      0    0.18    0.48    4.83    5.23    5.52    5.83    6.13    6.44    6.78
```

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

841       SA    7.14    7.34    7.53    7.73    7.95
842       SE    54.0    55.0    56.0    58.0    60.0    62.0    64.0    66.0    68.0    70.0
843       SE    72.0    73.0    74.0    75.0    76.0
844       SQ       0     105     194     275     344     401     451     496     560     747
845       SQ     998    1142    1247    1750    2100

846       KK   AP25S
847       KM   RETRIEVE THE DIVERTED FLOW AT THE INTERSECTION OF BRIARGATE PARKWAY AND
848       KM   EXPLORER DRIVE. THIS IS FLOW IN THE STREET.
849       DR   AP25S

850       KKRT-AP25S
851       KM   ROUTE THE SURFACE FLOW IN BRIARGATE PARKWAY DOWN BRIARGATE PARKWAY TO PINE
852       KM   CREEK. ASSUME THIS FLOW ENTERS THE CHANNEL AT THE OUTLET FROM DETENTION
853       KM   FACILITY #1.
854       RD    1400    .043    .015           TRAP      75     .01

855       KK    AP26
856       KM   COMBINE ROUTED FLOW RT-AP25S TO THE OUTFLOW FROM DF#1 AT THE INTERSECTION OF
857       KM   BRIARGATE PKWY. AND PINE CREEK
858       HC       2

859       KK RT-AP26
860       KM   ROUTE THE COMBINED FLOW FROM AP26 AT BRIARGATE PARKWAY DOWN PINE CREEK TO
861       KM   THE INTERSECTION OF PINE CREEK AND HIGHWAY 83. USE AVERAGE
862       KM   APPROXIMATE SECTION AND SLOPE FOR ROUTING
863       RD    1450    .019    .045           TRAP      40       2

864       KK  SB-PM9
865       KM   COMPUTE HYDROGRAPH FOR BASIN PM9
866       BA    .068
867       LS       0      93
868       UD    .120

869       KK    AP27
870       KM   COMBINE THE FLOW FROM BASIN PM9 AND THE ROUTED FLOW IN PINE CREEK (RT-AP26) A
871       KM   AT THE UPSTREAM SIDE  OF HIGHWAY 83.
872       HC       2

873       KK SB-PM10
874       KM   COMPUTE HYDROGRAPH FOR BASIN PM10
875       BA    .048
876       LS       0      98
877       UD    .092

878       KKRRDFPM10
879       KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
880       KM   RATE TO THE APPROXIMATE PEAK FLOW RATE DISCHARGE GOAL FROM THE BASIN
881       KM   AS SHOWN IN THE FINAL DRAINAGE REPORT FOR BRIARGATE BUSINESS CAMPUS
882       KM   FILING 13 AS APPROVED OCT 31, 1996
883       KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
884       KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN MAY DISCHARGE
885       KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN.
886       KM   DISCHARGE FROM THE BASIN PER THE FINAL DRAINAGE REPORT=140 cfs
887       RS       1    STOR       0
```

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

 888      SV       0     001      .6     1.5
 889      SE     100     102     104     106
 890      SQ       0     140     140     140

 891      KK RT-PM10
 892      KM   ROUTE THE FLOW IN THE S.D.FROM THE LOW POINT IN TELESTAR DR. TO THE EXISTING
 893      KM   OUTFALL TO PINE CREEK JUST UPSTREAM OF HIGHWAY 83.
 894      RD    1000    .025    .013            CIRC     4.0

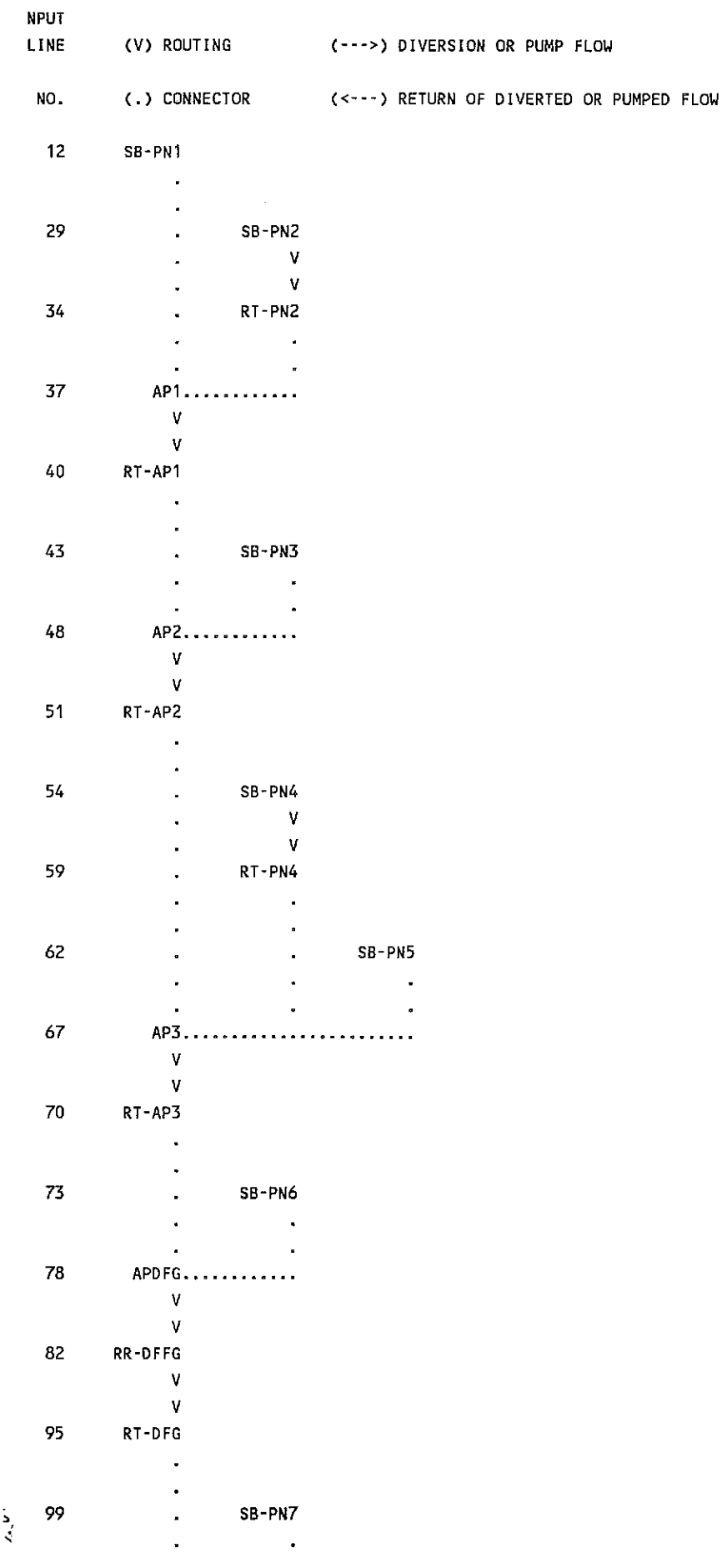
 895      KK SB-PM11
 896      KM   COMPUTE HYDROGRAPH FOR BASIN PM11
 897      BA    .041
 898      LS       0      98
 899      UD    .096

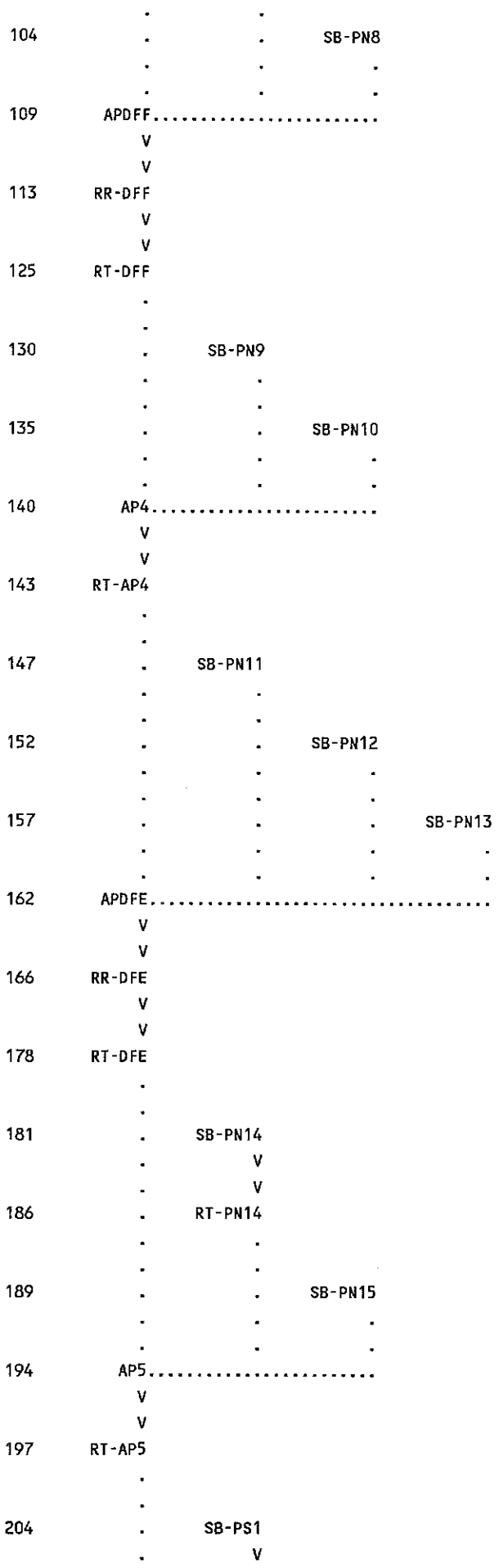
 900      KK   AP24S
 901      KM   RETRIEVE THE FLOW THAT WAS IN EXCESS OF THE STORM DRAIN CAPACITY AT THE
 902      KM   INTERSECTION OF EXPLORER DRIVE AND TELSTAR DRIVE.(AP24S)
 903      DR   AP24S

 904      KKRT-AP24S
 905      KM   ROUTE THE RETRIEVED FLOW FROM AP24 DOWN TELSTAR DRIVE TO THE SUMP THEN
 906      KM   ACROSS BBC FILING 19 TO AP28 IN PINE CREEK.
 907      RD    2200     .05    .015            TRAP      40      01

 908      KK    AP28
 909      KM   COMBINE THE FLOW FROM BASIN PM11 WITH THE ROUTED SURFACE FLOW FROM THE
 910      KM   INTERSECTION OF TELSTAR DR. AND EXPLORER DRIVE (RT-AP24S), THE FLOW IN
 911      KM   PINE CREEK AT AP27, AND THE ROUTED FLOW FROM BASIN PM10.
 912      KM   FLOW IS COMBINED IN PINE CREEK AT THE UPSTREAM SIDE OF THE BOX CULVERT
 913      KM   UNDER HIGHWAY 83. THIS REPRESENTS THE TOTAL FLOW TO PINE CREEK FROM THE
 914      KM   BRIARGATE AREA
 915      KO       3       1
 916      HC       4
 917      ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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RR-DFF
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SB-PN9
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AP4
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RT-AP4
147
SB-PN11
152
SB-PN12
157
SB-PN13
162
APDFE
166
RR-DFE
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SB-PN15
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AP5
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RT-AP5
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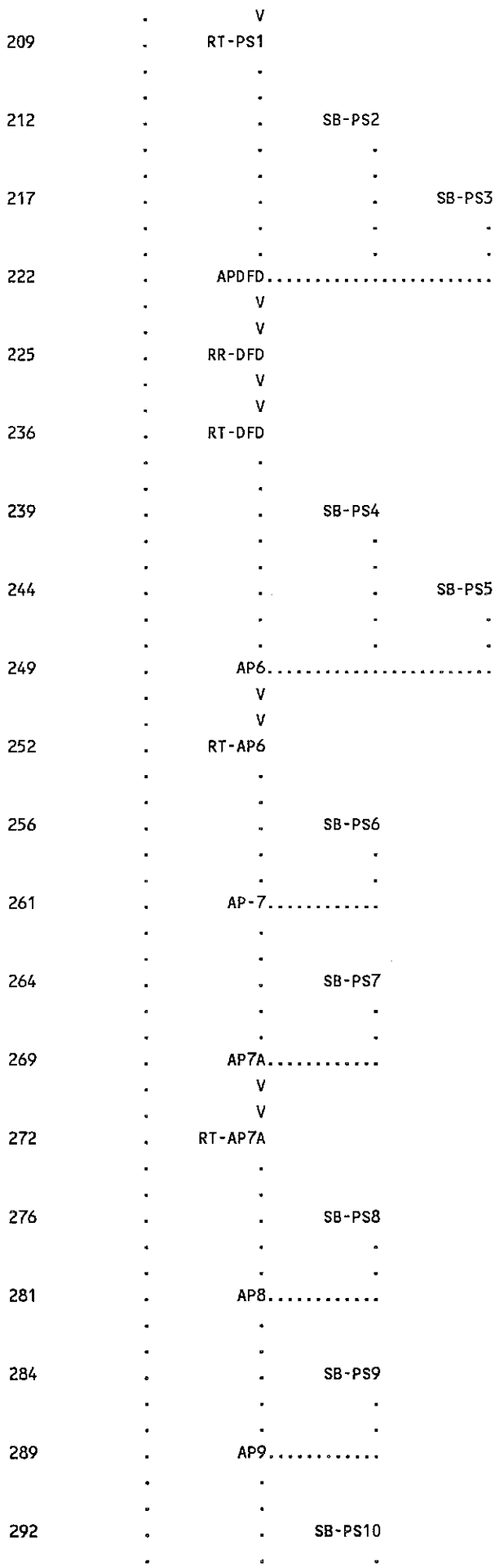
SB-PS1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217 SB-PS3
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V
V
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V
V
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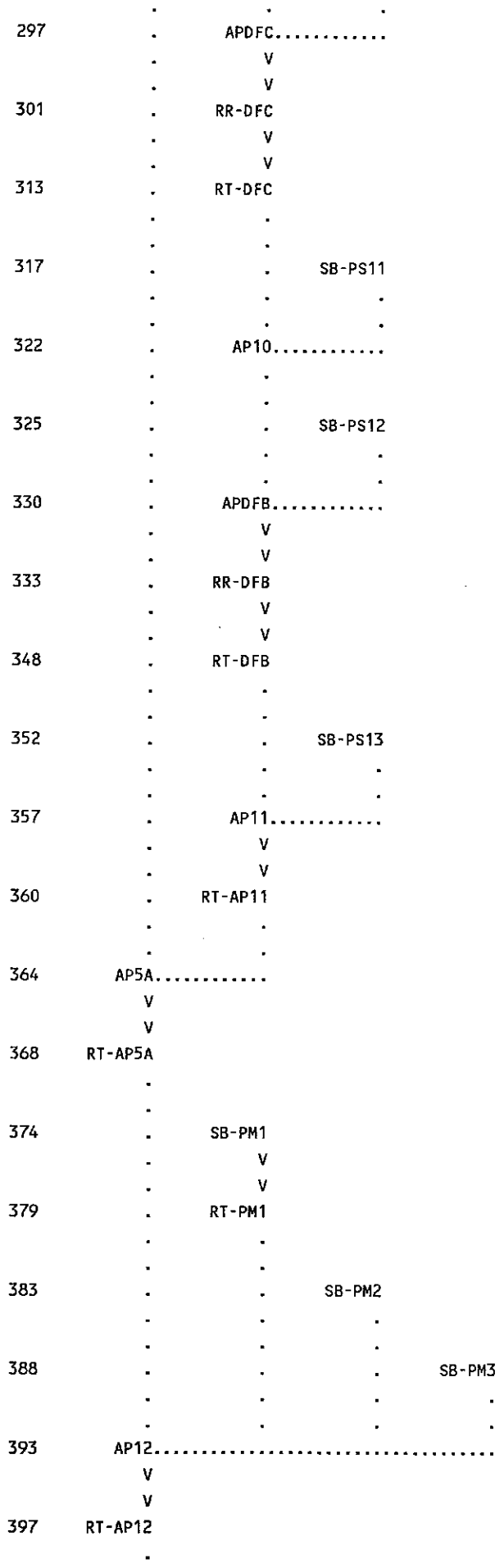
244 SB-PS5
249 AP6
V
V
252 RT-AP6
256 SB-PS6
261 AP-7
264 SB-PS7
269 AP7A
V
V
272 RT-AP7A
276 SB-PS8
281 AP8
284 SB-PS9
289 AP9
292 SB-PS10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RR-DFB
348
RT-DFB
352
SB-PS13
357
AP11
360
RT-AP11
364
AP5A
368
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SB-PM2
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SB-PM3
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AP12
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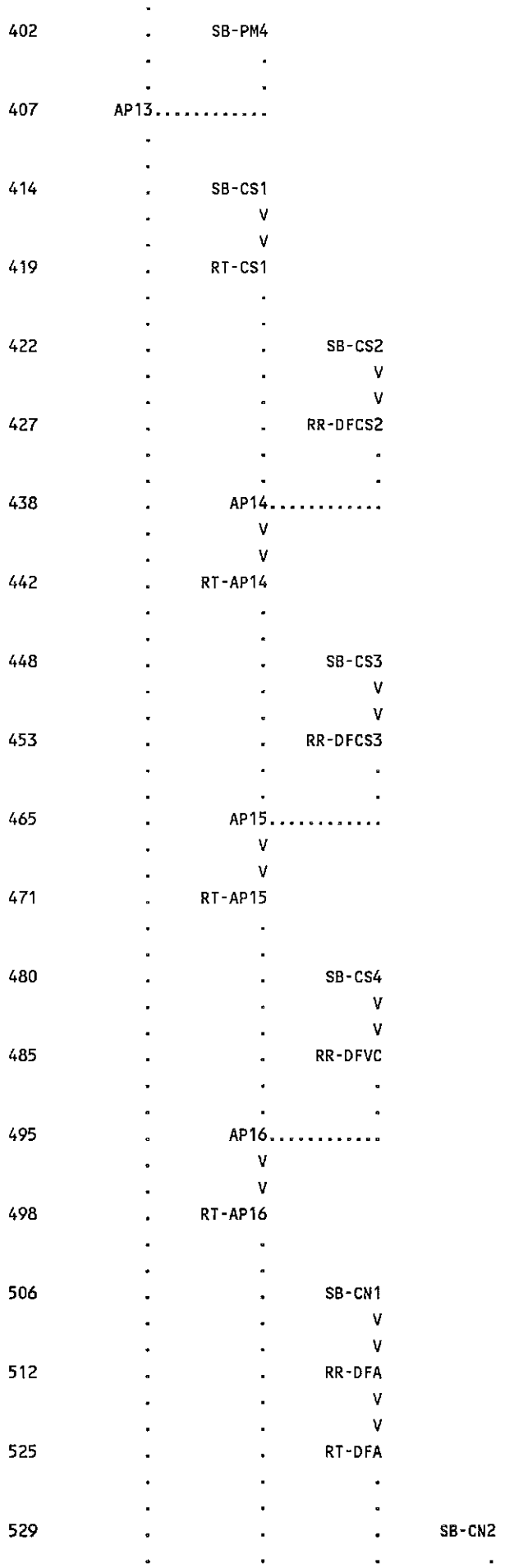
RT-AP12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RT-AP14
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SB-CS3
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AP15
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480
SB-CS4
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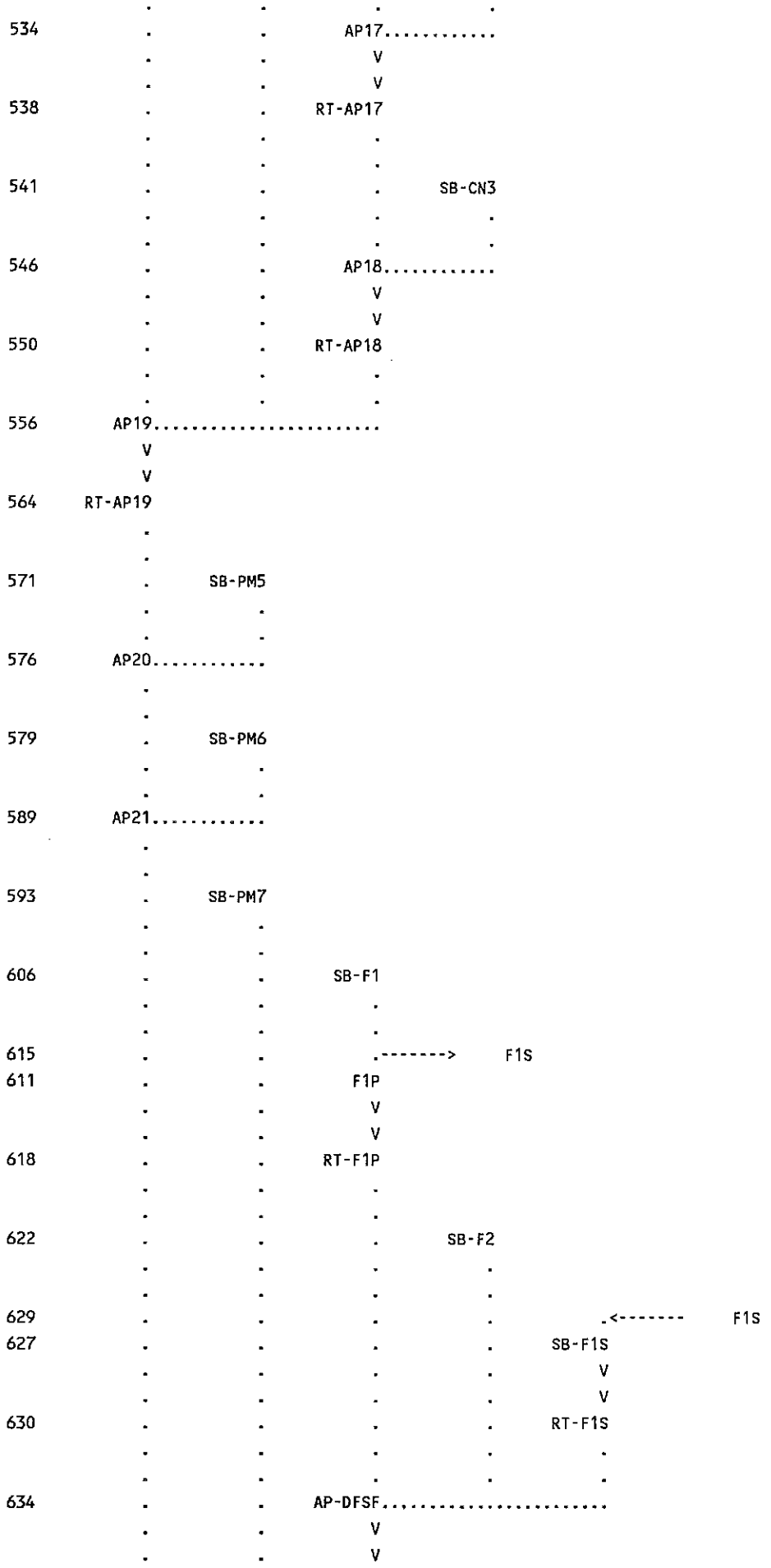
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589 AP21
593 SB-PM7
606 SB-F1
615 F1S
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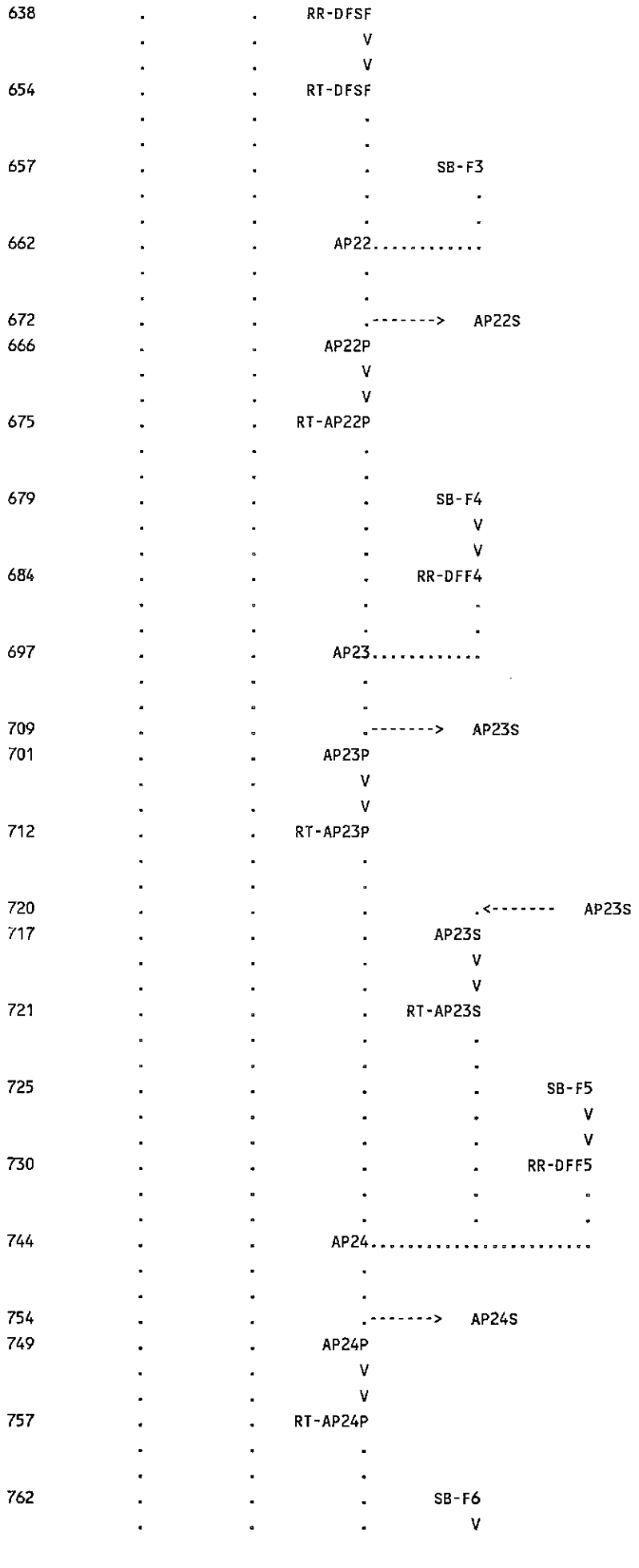
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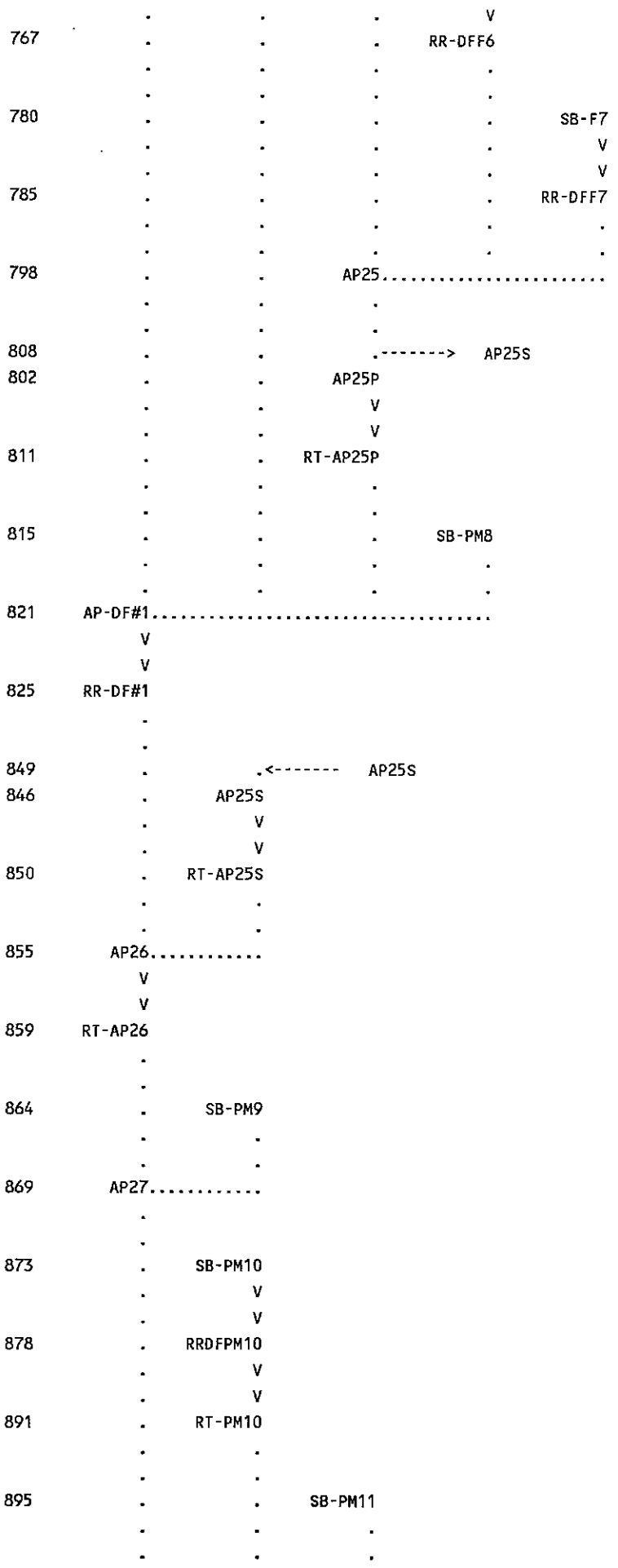
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SB-PM8
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AP-DF#1
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849
AP25S
846
AP25S
850
RT-AP25S
855
AP26
859
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RT-PM10
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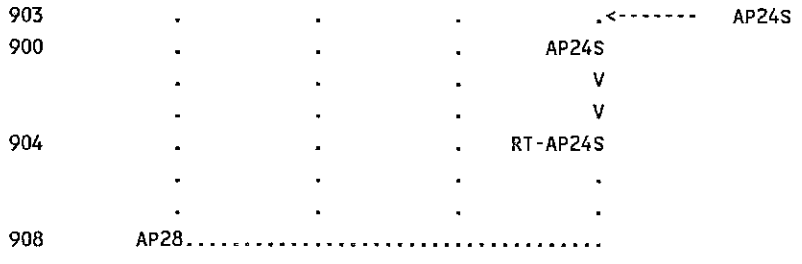
SB-PM11



***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*               MAY   1991              *
*            VERSION 4.0.1E             *
*                                       *
*  RUN DATE  08/05/1998  TIME  17:34:42 *
*                                       *
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*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*    HYDROLOGIC ENGINEERING CENTER      *
*          609 SECOND STREET            *
*        DAVIS, CALIFORNIA 95616        *
*          (916) 756-1104               *
*                                       *
*****************************************
```


PINE CREEK DRAINAGE BASIN - 24HR, FULL DEVELOPED CONDITION (TYPE IIa100 YEAR)
FILE:PCDBPSD.DAT
FULLY DEVELOPED CONDITION MODEL
998 REVISION, LAST MODEL REVISION DATE:8/5/98
CN VALUES HAVE BEEN ADJUSTED TO PRODUCE PEAK 100 YEAR FLOW RATES SIMILAR TO
100 YEAR FLOW RATES PRODUCED BY RATIONAL METHOD.
****
BEGIN CALCULATIONS IN THE PINE CREEK NORTH FORK WATERSHED
****

11 IO OUTPUT CONTROL VARIABLES

IPRNT	5	PRINT CONTROL
IPLOT	0	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

IT HYDROGRAPH TIME DATA

NMIN	3	MINUTES IN COMPUTATION INTERVAL
IDATE	1 0	STARTING DATE
ITIME	0000	STARTING TIME
NQ	300	NUMBER OF HYDROGRAPH ORDINATES
NDDATE	1 0	ENDING DATE
NDTIME	1457	ENDING TIME
ICENT	19	CENTURY MARK

COMPUTATION INTERVAL 0.05 HOURS
TOTAL TIME BASE 14.95 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

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*            *
```

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82 KK     *   RR-DFFG  *
          *            *
          ***************

87 KO          OUTPUT CONTROL VARIABLES
                    IPRNT          3  PRINT CONTROL
                    IPLOT          1  PLOT CONTROL
                    QSCAL          0.  HYDROGRAPH PLOT SCALE

               HYDROGRAPH ROUTING DATA

88 RS          STORAGE ROUTING
                    NSTPS          1  NUMBER OF SUBREACHES
                     ITYP       STOR  TYPE OF INITIAL CONDITION
                    RSVRIC       0.00  INITIAL CONDITION
                        X        0.00 WORKING R AND D COEFFICIENT

89 SV            STORAGE        0.0       0.1       2.8       8.0      14.1      20.9      28.4      36.6      45.5      55.1
                               65.3      76.3      88.2

91 SE            ELEVATION     59.00     60.00     62.00     64.00     66.00     68.00     70.00     72.00     74.00     76.00
                               78.00     80.00     82.00

93 SQ            DISCHARGE      0.        10.       47.       93.      130.      160.      180.      203.      222.      240.
                               262.      280.      295.

                                                                ***

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

                       HYDROGRAPH AT STATION  RR-DFFG

EAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
 (CFS)       (HR)                  6-HR        24-HR       72-HR     14.95-HR
  250.       6.55        (CFS)      183.         85.         85.         85.
                         (INCHES)  2.332       2.699       2.699       2.699
                         (AC-FT)    91.         105.        105.        105.

EAK STORAGE  TIME                       MAXIMUM AVERAGE STORAGE
 (AC-FT)     (HR)                  6-HR        24-HR       72-HR     14.95-HR
   60.       6.55                   33.         14.         14.         14.

EAK STAGE    TIME                       MAXIMUM AVERAGE STAGE
 (FEET)      (HR)                  6-HR        24-HR       72-HR     14.95-HR
 76.93       6.55                 70.70       64.43       64.43       64.43

                       CUMULATIVE AREA =    0.73 SQ MI


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


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          *             *
13 KK     *    RR-DFF   *
          *             *
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117 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          1  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

               HYDROGRAPH ROUTING DATA

118 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       STOR  TYPE OF INITIAL CONDITION
                    RSVRIC       0.00  INITIAL CONDITION
                         X       0.00 WORKING R AND D COEFFICIENT

119 SV            STORAGE        0.0       0.0       0.1       0.7       1.5       4.4       7.8      11.7      16.1      21.0
                                26.4

121 SE            ELEVATION     90.00     92.00     94.00     96.00     98.00    100.00    102.00    104.00    106.00    108.00
                               110.00

123 SQ            DISCHARGE      0.       22.       70.      112.      143.      170.      190.      210.      230.      250.
                                265.

                                                          ***

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

                       HYDROGRAPH AT STATION   RR-DFF

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                6-HR        24-HR       72-HR     14.95-HR
    239.       8.05       (CFS)     217.         103.        103.         103.
                          (INCHES)  2.187        2.596       2.596        2.596
                          (AC-FT)   107.         128.        128.         128.

PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
  (AC-FT)      (HR)                6-HR        24-HR       72-HR     14.95-HR
     18.       8.05                 13.          5.          5.           5.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
   (FEET)      (HR)                6-HR        24-HR       72-HR     14.95-HR
   106.85      8.05               104.67       96.88       96.88        96.88

                       CUMULATIVE AREA =    0.92 SQ MI

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          *            *
166 KK    *    RR-DFE  *
          *            *
          **************

173 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          1  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE
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HYDROGRAPH ROUTING DATA

174 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	STOR	TYPE OF INITIAL CONDITION
RSVRIC	0.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

175 SV	STORAGE	0.0	0.0	1.3	3.9	6.9	10.3	14.1	18.2	22.8	27.9
176 SE	ELEVATION	784.00	786.00	788.00	790.00	792.00	794.00	796.00	798.00	800.00	802.00
177 SQ	DISCHARGE	0.	25.	80.	136.	173.	210.	240.	263.	280.	1431.

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HYDROGRAPH AT STATION RR-DFE

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	14.95-HR
265.	8.10	(CFS)	253.	129.	129.	129.
		(INCHES)	1.889	2.395	2.395	2.395
		(AC-FT)	125.	159.	159.	159.

PEAK STORAGE (AC-FT)	TIME (HR)	MAXIMUM AVERAGE STORAGE 6-HR	24-HR	72-HR	14.95-HR
19.	8.10	17.	8.	8.	8.

PEAK STAGE (FEET)	TIME (HR)	MAXIMUM AVERAGE STAGE 6-HR	24-HR	72-HR	14.95-HR
798.27	8.10	797.20	790.61	790.61	790.62

CUMULATIVE AREA = 1.25 SQ MI

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* *
225 KK * RR-DFD *
* *
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232 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	1	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

HYDROGRAPH ROUTING DATA

231 RS STORAGE ROUTING

```
                    NSTPS          1  NUMBER OF SUBREACHES
                     ITYP       STOR  TYPE OF INITIAL CONDITION
                   RSVRIC       0.00  INITIAL CONDITION
                        X       0.00 WORKING R AND D COEFFICIENT

233 SV          STORAGE        0.0       6.8      14.3      22.4      31.1      40.6      50.8      61.8

234 SE        ELEVATION     100.00    102.00    104.00    106.00    108.00    110.00    112.00    114.00

235 SQ        DISCHARGE         0.        18.       54.       72.       87.       99.      110.      120.

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                      HYDROGRAPH AT STATION   RR-DFD

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                6-HR        24-HR        72-HR     14.95-HR
     99.       6.80       (CFS)     85.          44.          44.          44.
                          (INCHES)  1.689        2.201        2.201        2.201
                          (AC-FT)   42.          55.          55.          55.

PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
   (AC-FT)     (HR)                6-HR        24-HR        72-HR     14.95-HR
     41.       6.80                31.          15.          15.          15.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
   (FEET)      (HR)                6-HR        24-HR        72-HR     14.95-HR
   109.99      6.80              107.83       103.95       103.95       103.95

                      CUMULATIVE AREA =    0.47 SQ MI



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          *            *
301 KK    *   RR-DFC   *
          *            *
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305 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          1  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

               HYDROGRAPH ROUTING DATA

306 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       STOR  TYPE OF INITIAL CONDITION
                    RSVRIC       0.00  INITIAL CONDITION
                         X       0.00 WORKING R AND D COEFFICIENT

307 SV          STORAGE        0.0       2.7       9.7      18.6      28.0      38.2      49.0      60.5      72.8      85.8
                              99.7
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309 SE          ELEVATION       62.00     64.00     66.00     68.00     70.00     72.00     74.00     76.00     78.00     80.00
                                82.00

311 SQ          DISCHARGE        0.       23.       70.      110.      140.      168.      190.      215.      232.      245.
                               258.

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                        HYDROGRAPH AT STATION   RR-DFC

PEAK FLOW     TIME                              MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR         24-HR         72-HR       14.95-HR
   227.       6.70          (CFS)    203.          113.          113.          113.
                          (INCHES)  1.819         2.514         2.514         2.514
                            (AC-FT)  101.          139.          139.          139.

EAK STORAGE   TIME                              MAXIMUM AVERAGE STORAGE
 (AC-FT)      (HR)                  6-HR         24-HR         72-HR       14.95-HR
    69.       6.70                   56.          29.          29.           29.

PEAK STAGE    TIME                              MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                  6-HR         24-HR         72-HR       14.95-HR
   77.44      6.70                 75.12         69.08         69.08         69.08

                        CUMULATIVE AREA =    1.04 SQ MI

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333 KK    *    RR-DFB  *
          *            *
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340 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          1  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

               HYDROGRAPH ROUTING DATA

341 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       STOR  TYPE OF INITIAL CONDITION
                    RSVRIC       0.00  INITIAL CONDITION
                         X       0.00 WORKING R AND D COEFFICIENT

342 SV            STORAGE        0.0       0.1       1.2       3.3       5.8       8.7       12.1      15.9      20.1      23.6
                                24.8      30.0

344 SE          ELEVATION       71.20     72.00     74.00     76.00     78.00     80.00     82.00     84.00     86.00     87.60
                                88.00     90.00
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346 SQ          DISCHARGE          0.      22.      73.     130.     169.     202.     236.     260.     285.     301.
                                 371.    1222.

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                          HYDROGRAPH AT STATION   RR-DFB

 PEAK FLOW     TIME                                  MAXIMUM AVERAGE FLOW
   (CFS)       (HR)                    6-HR          24-HR          72-HR        14.95-HR
    247.       7.25          (CFS)      226.           125.           125.           125.
                             (INCHES)  1.685          2.327          2.327          2.327
                             (AC-FT)    112.           155.           155.           155.

PEAK STORAGE   TIME                                  MAXIMUM AVERAGE STORAGE
  (AC-FT)      (HR)                    6-HR          24-HR          72-HR        14.95-HR
     14.       7.25                     11.            6.             6.             6.

 PEAK STAGE    TIME                                  MAXIMUM AVERAGE STAGE
   (FEET)      (HR)                    6-HR          24-HR          72-HR        14.95-HR
    82.91      7.25                   81.49          76.71          76.71          76.71

                          CUMULATIVE AREA =    1.25 SQ MI


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512 KK    *    RR-DFA  *
          *            *
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517 KO          OUTPUT CONTROL VARIABLES
                     IPRNT          3  PRINT CONTROL
                     IPLOT          1  PLOT CONTROL
                     QSCAL          0.  HYDROGRAPH PLOT SCALE

               HYDROGRAPH ROUTING DATA

518 RS          STORAGE ROUTING
                     NSTPS          1  NUMBER OF SUBREACHES
                      ITYP       STOR  TYPE OF INITIAL CONDITION
                    RSVRIC       0.00  INITIAL CONDITION
                         X       0.00 WORKING R AND D COEFFICIENT

519 SV            STORAGE        0.0      0.0      0.2      1.0      2.0      2.8      4.3      5.3      6.5     11.6
                                15.4

521 SQ          DISCHARGE          2.       3.       3.       4.       4.       5.       5.       6.       8.       9.
                                 279.

523 SE          ELEVATION      6796.60  6797.00  6798.00  6800.00  6802.00  6803.50  6803.51  6804.00  6804.10  6805.50
                               6806.50

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                       HYDROGRAPH AT STATION   RR-DFA

 EAK FLOW     TIME                              MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                     6-HR        24-HR       72-HR     14.95-HR
      9.      8.20        (CFS)          9.           6.          6.           6.
                       (INCHES)       0.573        1.001       1.001        1.001
                        (AC-FT)          4.           8.          8.           8.

PEAK STORAGE  TIME                              MAXIMUM AVERAGE STORAGE
  (AC-FT)     (HR)                     6-HR        24-HR       72-HR     14.95-HR
      11.     8.30                      11.           6.          6.           6.

 EAK STAGE    TIME                              MAXIMUM AVERAGE STAGE
  (FEET)      (HR)                     6-HR        24-HR       72-HR     14.95-HR
  6805.44     8.30                  6805.31      6801.83     6801.83      6801.83

                      CUMULATIVE AREA =    0.14 SQ MI


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            *            *
  38 KK     *   RR-DFSF  *
            *            *
            **************

  49 KO         OUTPUT CONTROL VARIABLES
                      IPRNT           3  PRINT CONTROL
                      IPLOT           1  PLOT CONTROL
                      QSCAL          0.  HYDROGRAPH PLOT SCALE

              HYDROGRAPH ROUTING DATA

  50 RS         STORAGE ROUTING
                      NSTPS           1  NUMBER OF SUBREACHES
                       ITYP        STOR  TYPE OF INITIAL CONDITION
                     RSVRIC        0.00  INITIAL CONDITION
                          X        0.00 WORKING R AND D COEFFICIENT

  51 SV           STORAGE          0.0        0.6        4.6        6.9       10.3

 652 SE         ELEVATION        92.00      94.00      96.00      98.00     100.00

  53 SQ         DISCHARGE         120.       126.       131.       137.       144.
                                                                   ***

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

                        HYDROGRAPH AT STATION  RR-DFSF

 PEAK FLOW     TIME                             MAXIMUM AVERAGE FLOW
  (CFS)        (HR)                    6-HR        24-HR       72-HR     14.95-HR
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130.	6.35	(CFS)	121.	121.	121.	121.
		(INCHES)	7.136	17.669	17.669	17.669
		(AC-FT)	60.	149.	149.	149.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
(AC-FT)	(HR)	6-HR	24-HR	72-HR	14.95-HR
4.	6.35	0.	0.	0.	0.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
(FEET)	(HR)	6-HR	24-HR	72-HR	14.95-HR
95.57	6.35	92.44	92.18	92.18	92.18

CUMULATIVE AREA = 0.16 SQ MI

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825 KK    *   RR-DF#1  *
          *            *
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838 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	1	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

HYDROGRAPH ROUTING DATA

839 RS STORAGE ROUTING

NSTPS	1	NUMBER OF SUBREACHES
ITYP	STOR	TYPE OF INITIAL CONDITION
RSVRIC	0.00	INITIAL CONDITION
X	0.00	WORKING R AND D COEFFICIENT

840 SA	AREA	0.0	0.2	0.5	4.8	5.2	5.5	5.8	6.1	6.4	6.8
		7.1	7.3	7.5	7.7	7.9					
842 SE	ELEVATION	54.00	55.00	56.00	58.00	60.00	62.00	64.00	66.00	68.00	70.00
		72.00	73.00	74.00	75.00	76.00					
844 SQ	DISCHARGE	0.	105.	194.	275.	344.	401.	451.	496.	560.	747.
		998.	1142.	1247.	1750.	2100.					

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COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	0.06	0.38	4.93	14.99	25.74	37.09	49.05	61.62	74.83
ELEVATION	54.00	55.00	56.00	58.00	60.00	62.00	64.00	66.00	68.00	70.00
STORAGE	88.75	95.99	103.43	111.06	118.90					
ELEVATION	72.00	73.00	74.00	75.00	76.00					

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 0. TO 105.
THE ROUTED HYDROGRAPH SHOULD BE EXAMINED FOR OSCILLATIONS OR OUTFLOWS GREATER THAN PEAK INFLOWS.

THIS CAN BE CORRECTED BY DECREASING THE TIME INTERVAL OR INCREASING STORAGE (USE A LONGER REACH.)

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HYDROGRAPH AT STATION RR-DF#1

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
(CFS)	(HR)		6-HR	24-HR	72-HR	14.95-HR
1147.	6.65	(CFS)	816.	497.	497.	497.
		(INCHES)	1.714	2.600	2.600	2.600
		(AC-FT)	405.	614.	614.	614.

AK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
(AC-FT)	(HR)	6-HR	24-HR	72-HR	14.95-HR
96.	6.65	78.	44.	44.	44.

.EAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
(FEET)	(HR)	6-HR	24-HR	72-HR	14.95-HR
73.05	6.65	70.47	63.94	63.94	63.94

CUMULATIVE AREA = 4.43 SQ MI

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908 KK    *    AP28    *
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915 KO OUTPUT CONTROL VARIABLES

IPRNT	3	PRINT CONTROL
IPLOT	1	PLOT CONTROL
QSCAL	0.	HYDROGRAPH PLOT SCALE

16 HC HYDROGRAPH COMBINATION

ICOMP	4	NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION AP28

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
(CFS)	(HR)		6-HR	24-HR	72-HR	14.95-HR
1207.	6.30	(CFS)	871.	530.	530.	530.
		(INCHES)	1.766	2.679	2.679	2.679
		(AC-FT)	432.	655.	655.	655.

CUMULATIVE AREA = 4.58 SQ MI

100 YEAR STORM, FULLY DEVELOPED CONDITION
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	SB-PN1	355.	6.05	39.	17.	17.	0.16		
HYDROGRAPH AT	SB-PN2	306.	6.05	34.	15.	15.	0.15		
ROUTED TO	RT-PN2	305.	6.10	34.	15.	15.	0.15		
2 COMBINED AT	AP1	657.	6.05	72.	32.	32.	0.31		
ROUTED TO	RT-AP1	656.	6.10	72.	31.	31.	0.31		
HYDROGRAPH AT	SB-PN3	213.	6.05	24.	10.	10.	0.08		
2 COMBINED AT	AP2	866.	6.10	96.	42.	42.	0.40		
ROUTED TO	RT-AP2	864.	6.10	96.	42.	42.	0.40		
HYDROGRAPH AT	SB-PN4	234.	6.05	25.	11.	11.	0.11		
ROUTED TO	RT-PN4	231.	6.10	25.	11.	11.	0.11		
HYDROGRAPH AT	SB-PN5	199.	6.05	22.	9.	9.	0.07		
3 COMBINED AT	AP3	1285.	6.10	143.	62.	62.	0.58		
ROUTED TO	RT-AP3	1283.	6.10	143.	62.	62.	0.58		
HYDROGRAPH AT	SB-PN6	507.	6.00	55.	24.	24.	0.15		
2 COMBINED AT	APDFG	1747.	6.05	198.	86.	86.	0.73		
ROUTED TO	RR-DFFG	250.	6.55	183.	85.	85.	0.73	76.93	6.55
ROUTED TO	RT-DFG	250.	6.60	183.	85.	85.	0.73		
HYDROGRAPH AT	SB-PN7	144.	6.05	15.	7.	7.	0.08		
HYDROGRAPH AT	SB-PN8	257.	6.05	27.	12.	12.	0.11		
3 COMBINED AT	APDFF	578.	6.10	224.	103.	103.	0.92		
ROUTED TO	RR-DFF	239.	8.05	217.	103.	103.	0.92	106.85	8.05
ROUTED TO	RT-DFF	239.	8.10	217.	103.	103.	0.92		
HYDROGRAPH AT	SB-PN9	61.	6.05	6.	3.	3.	0.04		
HYDROGRAPH AT	SB-PN10	78.	6.05	8.	3.	3.	0.04		
3 COMBINED AT	AP4	309.	6.10	229.	109.	109.	1.00		
ROUTED TO	RT-AP4	307.	6.10	229.	109.	109.	1.00		

HYDROGRAPH AT	SB-PN11	150.	6.10	16.	7.	7.	0.08		
HYDROGRAPH AT	SB-PN12	60.	6.05	6.	2.	2.	0.04		
HYDROGRAPH AT	SB-PN13	215.	6.10	23.	10.	10.	0.13		
4 COMBINED AT	APDFE	724.	6.10	272.	129.	129.	1.25		
ROUTED TO	RR-DFE	265.	8.10	253.	129.	129.	1.25	798.27	8.10
ROUTED TO	RT-DFE	265.	8.10	253.	129.	129.	1.25		
HYDROGRAPH AT	SB-PN14	50.	6.05	5.	2.	2.	0.03		
ROUTED TO	RT-PN14	49.	6.05	5.	2.	2.	0.03		
HYDROGRAPH AT	SB-PN15	120.	6.10	13.	6.	6.	0.07		
3 COMBINED AT	AP5	368.	6.15	267.	137.	137.	1.35		
ROUTED TO	RT-AP5	368.	6.15	267.	137.	137.	1.35		
HYDROGRAPH AT	SB-PS1	296.	6.10	33.	14.	14.	0.15		
ROUTED TO	RT-PS1	294.	6.10	33.	14.	14.	0.15		
HYDROGRAPH AT	SB-PS2	394.	6.05	43.	19.	19.	0.15		
HYDROGRAPH AT	SB-PS3	397.	6.05	45.	19.	19.	0.16		
3 COMBINED AT	APDFD	1073.	6.10	121.	53.	53.	0.47		
ROUTED TO	RR-DFD	99.	6.80	85.	44.	44.	0.47	109.99	6.80
ROUTED TO	RT-DFD	99.	6.80	85.	44.	44.	0.47		
HYDROGRAPH AT	SB-PS4	181.	6.00	19.	8.	8.	0.05		
HYDROGRAPH AT	SB-PS5	237.	6.00	27.	12.	12.	0.07		
3 COMBINED AT	AP6	470.	6.00	126.	65.	65.	0.59		
ROUTED TO	RT-AP6	468.	6.05	126.	64.	64.	0.59		
HYDROGRAPH AT	SB-PS6	218.	6.00	22.	10.	10.	0.08		
2 COMBINED AT	AP-7	681.	6.05	148.	74.	74.	0.66		
HYDROGRAPH AT	SB-PS7	321.	6.00	36.	16.	16.	0.09		
2 COMBINED AT	AP7A	998.	6.00	183.	90.	90.	0.75		
ROUTED TO	RT-AP7A	989.	6.05	183.	90.	90.	0.75		
HYDROGRAPH AT	SB-PS8	348.	6.00	35.	15.	15.	0.12		
2 COMBINED AT	AP8	1332.	6.00	218.	105.	105.	0.87		
HYDROGRAPH AT	SB-PS9	446.	6.00	49.	21.	21.	0.13		

2 COMBINED AT	AP9	1778.	6.00	267.	126.	126.	1.00		
HYDROGRAPH AT	SB-PS10	66.	6.05	7.	3.	3.	0.04		
2 COMBINED AT	APDFC	1840.	6.00	273.	129.	129.	1.04		
ROUTED TO	RR-DFC	227.	6.70	203.	113.	113.	1.04	77.44	6.70
ROUTED TO	RT-DFC	227.	6.70	203.	112.	112.	1.04		
HYDROGRAPH AT	SB-PS11	126.	6.05	13.	6.	6.	0.06		
2 COMBINED AT	AP10	317.	6.10	214.	118.	118.	1.09		
HYDROGRAPH AT	SB-PS12	189.	6.10	23.	10.	10.	0.15		
2 COMBINED AT	APDFB	506.	6.10	237.	128.	128.	1.25		
ROUTED TO	RR-DFB	247.	7.25	226.	125.	125.	1.25	82.91	7.25
ROUTED TO	RT-DFB	247.	7.25	226.	125.	125.	1.25		
HYDROGRAPH AT	SB-PS13	122.	6.05	12.	5.	5.	0.06		
2 COMBINED AT	AP11	289.	6.10	235.	130.	130.	1.31		
ROUTED TO	RT-AP11	288.	6.10	235.	130.	130.	1.31		
2 COMBINED AT	AP5A	654.	6.10	502.	267.	267.	2.66		
ROUTED TO	RT-AP5A	652.	6.15	502.	266.	266.	2.66		
HYDROGRAPH AT	SB-PM1	107.	6.10	12.	5.	5.	0.05		
ROUTED TO	RT-PM1	107.	6.10	12.	5.	5.	0.05		
HYDROGRAPH AT	SB-PM2	139.	6.20	20.	9.	9.	0.15		
HYDROGRAPH AT	SB-PM3	99.	6.15	12.	5.	5.	0.07		
4 COMBINED AT	AP12	985.	6.15	542.	285.	285.	2.93		
ROUTED TO	RT-AP12	975.	6.20	542.	285.	285.	2.93		
HYDROGRAPH AT	SB-PM4	180.	6.05	19.	8.	8.	0.11		
2 COMBINED AT	AP13	1115.	6.15	559.	293.	293.	3.04		
HYDROGRAPH AT	SB-CS1	90.	6.05	10.	4.	4.	0.05		
ROUTED TO	RT-CS1	90.	6.10	10.	4.	4.	0.05		
HYDROGRAPH AT	SB-CS2	254.	6.00	29.	13.	13.	0.07		
ROUTED TO	RR-DFCS2	194.	5.70	29.	13.	13.	0.07	102.48	6.10
2 COMBINED AT	AP14	284.	6.10	38.	17.	17.	0.12		
ROUTED TO	RT-AP14	284.	6.10	38.	17.	17.	0.12		

HYDROGRAPH AT	SB-CS3	137.	6.05	15.	6.	6.	0.05		
ROUTED TO	RR-DFCS3	123.	6.00	15.	6.	6.	0.05	102.04	6.10
2 COMBINED AT	AP15	407.	6.10	53.	23.	23.	0.18		
ROUTED TO	RT-AP15	406.	6.10	53.	23.	23.	0.18		
HYDROGRAPH AT	SB-CS4	188.	6.00	20.	9.	9.	0.05		
ROUTED TO	RR-DFVC	22.	6.35	18.	9.	9.	0.05	81.86	6.35
2 COMBINED AT	AP16	427.	6.10	70.	32.	32.	0.23		
ROUTED TO	RT-AP16	427.	6.10	70.	32.	32.	0.23		
HYDROGRAPH AT	SB-CN1	275.	6.10	30.	13.	13.	0.14		
ROUTED TO	RR-DFA	9.	8.20	9.	6.	6.	0.14	6805.44	8.30
ROUTED TO	RT-DFA	9.	8.30	9.	6.	6.	0.14		
HYDROGRAPH AT	SB-CN2	136.	6.10	15.	7.	7.	0.08		
2 COMBINED AT	AP17	142.	6.10	24.	13.	13.	0.22		
ROUTED TO	RT-AP17	140.	6.10	24.	13.	13.	0.22		
HYDROGRAPH AT	SB-CN3	98.	6.05	10.	4.	4.	0.04		
2 COMBINED AT	AP18	232.	6.10	34.	17.	17.	0.27		
ROUTED TO	RT-AP18	232.	6.10	34.	17.	17.	0.27		
3 COMBINED AT	AP19	1753.	6.15	652.	342.	342.	3.54		
ROUTED TO	RT-AP19	1739.	6.15	652.	342.	342.	3.54		
HYDROGRAPH AT	SB-PM5	265.	6.10	28.	13.	13.	0.18		
2 COMBINED AT	AP20	1978.	6.15	680.	354.	354.	3.72		
HYDROGRAPH AT	SB-PM6	319.	6.00	36.	16.	16.	0.09		
2 COMBINED AT	AP21	2149.	6.10	708.	370.	370.	3.81		
HYDROGRAPH AT	SB-PM7	191.	6.20	28.	12.	12.	0.14		
HYDROGRAPH AT	SB-F1	233.	6.10	26.	11.	11.	0.12		
DIVERSION TO	F1S	110.	5.90	5.	2.	2.	0.12		
HYDROGRAPH AT	F1P	123.	5.90	21.	10.	10.	0.12		
ROUTED TO	RT-F1P	123.	6.00	21.	10.	10.	0.12		
HYDROGRAPH AT	SB-F2	69.	6.05	7.	3.	3.	0.04		
HYDROGRAPH AT	SB-F1S	110.	6.10	5.	2.	2.	0.00		

ROUTED TO	RT-F1S	109.	6.15	5.	2.	2.	0.00		
3 COMBINED AT	AP-DFSF	296.	6.10	33.	15.	15.	0.16		
ROUTED TO	RR-DFSF	130.	6.35	121.	121.	121.	0.16	95.57	6.35
ROUTED TO	RT-DFSF	130.	6.35	121.	121.	121.	0.16		
HYDROGRAPH AT	SB-F3	210.	6.10	24.	10.	10.	0.11		
2 COMBINED AT	AP22	337.	6.10	145.	131.	131.	0.27		
DIVERSION TO	AP22S	77.	5.95	3.	1.	1.	0.27		
HYDROGRAPH AT	AP22P	260.	5.95	142.	130.	130.	0.27		
ROUTED TO	RT-AP22P	260.	6.00	142.	130.	130.	0.27		
HYDROGRAPH AT	SB-F4	89.	6.05	10.	4.	4.	0.04		
ROUTED TO	RR-DFF4	71.	5.95	10.	4.	4.	0.04	102.08	6.20
2 COMBINED AT	AP23	331.	6.00	152.	134.	134.	0.31		
DIVERSION TO	AP23S	33.	5.95	2.	1.	1.	0.31		
HYDROGRAPH AT	AP23P	298.	5.95	150.	133.	133.	0.31		
ROUTED TO	RT-AP23P	298.	6.00	150.	133.	133.	0.31		
HYDROGRAPH AT	AP23S	33.	6.00	2.	1.	1.	0.00		
ROUTED TO	RT-AP23S	36.	6.05	2.	1.	1.	0.00		
HYDROGRAPH AT	SB-F5	225.	6.00	25.	11.	11.	0.06		
ROUTED TO	RR-DFF5	175.	5.75	25.	11.	11.	0.06	102.32	6.10
3 COMBINED AT	AP24	509.	6.05	177.	145.	145.	0.37		
DIVERSION TO	AP24S	159.	5.80	10.	4.	4.	0.37		
HYDROGRAPH AT	AP24P	350.	5.80	167.	141.	141.	0.37		
ROUTED TO	RT-AP24P	350.	5.85	167.	141.	141.	0.37		
HYDROGRAPH AT	SB-F6	138.	6.00	16.	7.	7.	0.04		
ROUTED TO	RR-DFF6	104.	5.70	16.	7.	7.	0.04	102.27	6.10
HYDROGRAPH AT	SB-F7	173.	6.00	19.	8.	8.	0.05		
ROUTED TO	RR-DFF7	132.	5.80	19.	8.	8.	0.05	102.24	6.10
3 COMBINED AT	AP25	586.	5.85	201.	156.	156.	0.46		
DIVERSION TO	AP25S	125.	5.70	11.	5.	5.	0.46		
HYDROGRAPH AT	AP25P	461.	5.70	189.	151.	151.	0.46		

ROUTED TO	RT-AP25P	461.	5.75	189.	151.	151.	0.46		
HYDROGRAPH AT	SB-PM8	51.	6.00	6.	3.	3.	0.01		
4 COMBINED AT	AP-DF#1	2809.	6.10	927.	536.	536.	4.43		
ROUTED TO	RR-DF#1	1147.	6.65	816.	497.	497.	4.43	73.05	6.65
HYDROGRAPH AT	AP25S	125.	5.85	11.	5.	5.	0.00		
ROUTED TO	RT-AP25S	126.	5.85	11.	5.	5.	0.00		
2 COMBINED AT	AP26	1147.	6.65	820.	501.	501.	4.43		
ROUTED TO	RT-AP26	1146.	6.65	819.	499.	499.	4.43		
HYDROGRAPH AT	SB-PM9	230.	6.00	24.	11.	11.	0.07		
2 COMBINED AT	AP27	1162.	6.65	832.	510.	510.	4.49		
HYDROGRAPH AT	SB-PM10	175.	6.00	20.	9.	9.	0.05		
ROUTED TO	RRDFPM10	140.	5.80	20.	9.	9.	0.05	106.31	6.05
ROUTED TO	RT-PM10	140.	5.85	20.	9.	9.	0.05		
HYDROGRAPH AT	SB-PM11	149.	6.00	17.	7.	7.	0.04		
HYDROGRAPH AT	AP24S	159.	6.05	10.	4.	4.	0.00		
ROUTED TO	RT-AP24S	158.	6.10	10.	4.	4.	0.00		
4 COMBINED AT	AP28	1207.	6.30	871.	530.	530.	4.58		

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

ISTAQ	ELEMENT	DT	PEAK	TIME TO PEAK	VOLUME	INTERPOLATED TO COMPUTATION INTERVAL DT	PEAK	TIME TO PEAK	VOLUME
		(MIN)	(CFS)	(MIN)	(IN)	(MIN)	(CFS)	(MIN)	(IN)
RT-PN2	MANE	0.60	305.91	363.89	2.28	3.00	305.05	366.00	2.28

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1812E+02 EXCESS=0.0000E+00 OUTFLOW=0.1811E+02 BASIN STORAGE=0.9474E-02 PERCENT ERROR= 0.0

RT-AP1	MANE	1.24	658.65	364.95	2.33	3.00	655.90	366.00	2.33

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3896E+02 EXCESS=0.0000E+00 OUTFLOW=0.3892E+02 BASIN STORAGE=0.4165E-01 PERCENT ERROR= 0.0

RT-AP2	MANE	0.39	863.87	365.94	2.44	3.00	863.86	366.00	2.45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5165E+02 EXCESS=0.0000E+00 OUTFLOW=0.5163E+02 BASIN STORAGE=0.1718E-01 PERCENT ERROR= 0.0

RT-PN4	MANE	0.57	233.36	363.74	2.24	3.00	231.29	366.00	2.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1362E+02 EXCESS=0.0000E+00 OUTFLOW=0.1361E+02 BASIN STORAGE=0.6878E-02 PERCENT ERROR= 0.0

RT-AP3	MANE	0.49	1282.79	366.16	2.46	3.00	1282.62	366.00	2.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7679E+02 EXCESS=0.0000E+00 OUTFLOW=0.7676E+02 BASIN STORAGE=0.3147E-01 PERCENT ERROR= 0.0

RT-DFG	MANE	3.00	250.28	396.00	2.69	3.00	250.28	396.00	2.69

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1051E+03 EXCESS=0.0000E+00 OUTFLOW=0.1048E+03 BASIN STORAGE=0.3794E+00 PERCENT ERROR= 0.0

RT-DFF	MANE	3.00	238.54	486.00	2.59	3.00	238.54	486.00	2.59

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1276E+03 EXCESS=0.0000E+00 OUTFLOW=0.1275E+03 BASIN STORAGE=0.1190E+00 PERCENT ERROR= 0.0

RT-AP4	MANE	1.35	308.77	367.20	2.53	3.00	306.89	366.00	2.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1350E+03 EXCESS=0.0000E+00 OUTFLOW=0.1349E+03 BASIN STORAGE=0.1055E+00 PERCENT ERROR= 0.0

RT-DFE	MANE	1.17	265.26	487.11	2.39	3.00	265.26	486.00	2.39

ONTINUITY SUMMARY (AC-FT) - INFLOW=0.1591E+03 EXCESS=0.0000E+00 OUTFLOW=0.1590E+03 BASIN STORAGE=0.5028E-01 PERCENT ERROR= 0.0

RT-PN14	MANE	1.05	49.82	363.76	1.91	3.00	49.19	363.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2750E+01 EXCESS=0.0000E+00 OUTFLOW=0.2748E+01 BASIN STORAGE=0.2765E-02 PERCENT ERROR= 0.0

RT-AP5	MANE	0.24	367.94	366.60	2.35	3.00	367.91	369.00	2.35

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1688E+03 EXCESS=0.0000E+00 OUTFLOW=0.1687E+03 BASIN STORAGE=0.1227E-01 PERCENT ERROR= 0.0

RT-PS1	MANE	1.26	294.79	365.55	2.23	3.00	294.37	366.00	2.23

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1785E+02 EXCESS=0.0000E+00 OUTFLOW=0.1783E+02 BASIN STORAGE=0.1984E-01 PERCENT ERROR= 0.0

RT-DFD	MANE	0.85	98.97	408.74	2.20	3.00	98.96	408.00	2.20

NTINUITY SUMMARY (AC-FT) - INFLOW=0.5470E+02 EXCESS=0.0000E+00 OUTFLOW=0.5465E+02 BASIN STORAGE=0.5548E-01 PERCENT ERROR= 0.0

RT-AP6	MANE	1.61	469.72	362.31	2.54	3.00	467.96	363.00	2.54

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7973E+02 EXCESS=0.0000E+00 OUTFLOW=0.7957E+02 BASIN STORAGE=0.1580E+00 PERCENT ERROR= 0.0

RT-AP7A	MANE	1.16	995.92	361.71	2.77	3.00	989.30	363.00	2.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1111E+03 EXCESS=0.0000E+00 OUTFLOW=0.1109E+03 BASIN STORAGE=0.1485E+00 PERCENT ERROR= 0.0

RT-DFC	MANE	1.46	227.20	401.82	2.51	3.00	227.19	402.00	2.51

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1393E+03 EXCESS=0.0000E+00 OUTFLOW=0.1390E+03 BASIN STORAGE=0.2911E+00 PERCENT ERROR= 0.0

RT-DFB	MANE	0.72	246.94	435.86	2.32	3.00	246.94	435.00	2.32

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1548E+03 EXCESS=0.0000E+00 OUTFLOW=0.1546E+03 BASIN STORAGE=0.1657E+00 PERCENT ERROR= 0.0

RT-AP11	MANE	0.41	288.73	366.31	2.30	3.00	288.12	366.00	2.30

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1612E+03 EXCESS=0.0000E+00 OUTFLOW=0.1611E+03 BASIN STORAGE=0.9914E-01 PERCENT ERROR= 0.0

RT-AP5A	MANE	1.65	653.30	369.60	2.32	3.00	652.11	369.00	2.32

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3298E+03 EXCESS=0.0000E+00 OUTFLOW=0.3288E+03 BASIN STORAGE=0.9628E+00 PERCENT ERROR= 0.0

RT-PM1	MANE	0.50	107.12	366.09	2.24	3.00	107.08	366.00	2.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6448E+01 EXCESS=0.0000E+00 OUTFLOW=0.6446E+01 BASIN STORAGE=0.7579E-02 PERCENT ERROR= -0.1

RT-AP12	MANE	1.65	979.76	371.25	2.25	3.00	974.98	372.00	2.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3527E+03 EXCESS=0.0000E+00 OUTFLOW=0.3516E+03 BASIN STORAGE=0.1159E+01 PERCENT ERROR= 0.0

RT-CS1	MANE	1.65	90.51	366.30	1.85	3.00	90.31	366.00	1.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5244E+01 EXCESS=0.0000E+00 OUTFLOW=0.5233E+01 BASIN STORAGE=0.2491E-01 PERCENT ERROR= -0.3

RT-AP14	MANE	0.50	284.03	366.35	3.18	3.00	283.67	366.00	3.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2089E+02 EXCESS=0.0000E+00 OUTFLOW=0.2089E+02 BASIN STORAGE=0.2081E-01 PERCENT ERROR= -0.1

RT-AP15	MANE	0.45	406.34	366.25	3.08	3.00	405.99	366.00	3.08

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2891E+02 EXCESS=0.0000E+00 OUTFLOW=0.2890E+02 BASIN STORAGE=0.2341E-01 PERCENT ERROR= -0.1

RT-AP16	MANE	0.11	427.19	366.16	3.25	3.00	427.05	366.00	3.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3973E+02 EXCESS=0.0000E+00 OUTFLOW=0.3973E+02 BASIN STORAGE=0.7924E-02 PERCENT ERROR= 0.0

RT-DFA	MANE	1.11	8.98	499.60	1.00	3.00	8.98	498.00	1.00

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7739E+01 EXCESS=0.0000E+00 OUTFLOW=0.7729E+01 BASIN STORAGE=0.9996E-02 PERCENT ERROR= 0.0

RT-AP17	MANE	0.82	141.10	367.03	1.35	3.00	140.17	366.00	1.35

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1605E+02 EXCESS=0.0000E+00 OUTFLOW=0.1603E+02 BASIN STORAGE=0.1607E-01 PERCENT ERROR= 0.0

RT-AP18	MANE	0.35	231.68	365.86	1.51	3.00	231.64	366.00	1.51

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2146E+02 EXCESS=0.0000E+00 OUTFLOW=0.2145E+02 BASIN STORAGE=0.8548E-02 PERCENT ERROR= 0.0

RT-AP19	MANE	1.97	1748.21	370.93	2.23	3.00	1739.33	369.00	2.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4230E+03 EXCESS=0.0000E+00 OUTFLOW=0.4220E+03 BASIN STORAGE=0.1201E+01 PERCENT ERROR= 0.0

RT-F1P	MANE	0.92	123.10	355.43	1.86	3.00	123.01	360.00	1.86

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1179E+02 EXCESS=0.0000E+00 OUTFLOW=0.1178E+02 BASIN STORAGE=0.1000E-01 PERCENT ERROR= 0.0

RT-F1S	MANE	0.75	108.57	369.00	-1.00	3.00	108.57	369.00	-1.00
RT-DFSF	MANE	0.62	129.92	382.04	17.66	3.00	129.91	381.00	17.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1489E+03 EXCESS=0.0000E+00 OUTFLOW=0.1489E+03 BASIN STORAGE=0.0000E+00 PERCENT ERROR= 0.0

RT-AP22P	MANE	1.35	260.35	359.10	11.05	3.00	260.20	360.00	11.06

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1605E+03 EXCESS=0.0000E+00 OUTFLOW=0.1605E+03 BASIN STORAGE=0.7076E-02 PERCENT ERROR= 0.0

RT-AP23P	MANE	1.03	298.61	358.10	9.96	3.00	298.01	360.00	9.96

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1648E+03 EXCESS=0.0000E+00 OUTFLOW=0.1648E+03 BASIN STORAGE=0.7177E-02 PERCENT ERROR= 0.0

RT-AP23S	MANE	0.30	43.63	361.50	-1.00	3.00	36.44	363.00	-1.00
RT-AP24P	MANE	0.64	350.05	349.53	8.72	3.00	350.00	351.00	8.72

NTINUITY SUMMARY (AC-FT) - INFLOW=0.1740E+03 EXCESS=0.0000E+00 OUTFLOW=0.1740E+03 BASIN STORAGE=0.7306E-02 PERCENT ERROR= 0.0

RT-AP25P	MANE	0.96	461.40	344.51	7.55	3.00	461.12	345.00	7.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1870E+03 EXCESS=0.0000E+00 OUTFLOW=0.1870E+03 BASIN STORAGE=0.1510E-01 PERCENT ERROR= 0.0

RT-AP25S	MANE	0.60	126.10	351.00	-1.00	3.00	126.10	351.00	-1.00
RT-AP26	MANE	2.40	1146.59	400.90	2.61	3.00	1146.42	399.00	2.61

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6191E+03 EXCESS=0.0000E+00 OUTFLOW=0.6167E+03 BASIN STORAGE=0.2701E+01 PERCENT ERROR= 0.0

RT-PM10	MANE	0.76	140.52	349.41	4.15	3.00	140.10	351.00	4.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1063E+02 EXCESS=0.0000E+00 OUTFLOW=0.1063E+02 BASIN STORAGE=0.4832E-02 PERCENT ERROR= 0.0

RT-AP24S	MANE	0.90	158.95	365.40	-1.00	3.00	158.39	366.00	-1.00

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