HEC1 S/N: 1343000062 HMVersion: 6.33 Data File: pcint5.dat

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*****************************************
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*                                       *
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*                                       *
*               MAY   1991              *
*                                       *
*            VERSION 4.0.1E             *
*                                       *
*                                       *
*                                       *
*  RUN DATE  09/27/2002  TIME  16:46:41 *
*                                       *
*                                       *
*                                       *
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*

* U.S. ARMY CORPS OF ENGINEERS

* HYDROLOGIC ENGINEERING CENTER

* 609 SECOND STREET

* DAVIS, CALIFORNIA 95616

* (916) 756-1104

*


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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X              X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X              X
X     X  X        X     X        X
X     X  XXXXXXX   XXXXX         XXX
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::::::::::::::::::::::::::::::::::::::::::::
::::::::::::::::::::::::::::::::::::::::::::
:::                                        :::
:::  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

HEC-1 INPUT

```
LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
    1         ID   PINE CREEK DRAINAGE BASIN - 24HR, INTERIM CONDITION (TYPE IIa,5 YEAR)
    2         ID   INTERIM CONDITION MODEL
    3         ID   ASSUMES POWERS BOULEVARD AND DOWNSTREAM AREA IN FULLY DEVELOPED CONDITION
    4         ID   AND LAND EAST OF POWERS IN THE EXISTING CONDITION
    5         ID   THIS IS A MODIFIED VERSION OF THE DBPS AMENDMENT 2 MODEL. THE MODEL HAS BEEN
    6         ID   REVISED IN AREAS THAT HAVE CHANGED SIGNIFICANTLY FROM THE AMENDMENT 2
    7         ID   ASSUMPTIONS. OTHER AREAS HAVE NOT BEEN CHANGED
    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-IPN1
          16          KM   COMPUTE HYDROGRAPH FOR BASIN IPN1
          17          BA    .156
          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    63.8
          31          UD    .360

          32          KK RT-IPN1
          33          KM   ROUTE THE FLOW FROM BASIN IPN1 THROUGH BASIN IPN2 TO API1
          34          RD    2500    .033    .045            TRAP     100      15

          35          KK SB-IPN2
          36          KM   COMPUTE HYDROGRAPH FOR BASIN IPN2
          37          BA    .229
          38          LS       0    62.0
          39          UD    .377

          40          KK    API1
          41          KM   COMBINE ROUTED FLOW FROM BASIN IPN1 WITH FLOW FROM BASIN IPN2
          42          HC       2

          43          KK RT-API1
          44          KM   ROUTE THE FLOW IN THE NORTH FORK OF PINE CREEK FROM API1 TO API2
          45          RD    2100    .034    .045            TRAP      12     2.5
                                              HEC-1 INPUT                                                PAGE  2

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


          46          KK SB-IPN3
          47          KM   COMPUTE HYDROGRAPH FOR BASIN IPN3
          48          BA    .104
          49          LS       0    65.0
          50          UD    .249

          51          KK    API2
          52          KM   COMBINE THE ROUTED FLOW FROM API1 WITH THE FLOW FROM BASIN IPN3
          53          HC       2

          54          KK SB-IPN4
          55          KM   COMPUTE HYDROGRAPH FOR BASIN IPN4
          56          BA    .101
          57          LS       0    62.0
          58          UD    .313

          59          KK SB-IPN5
          60          KM   COMPUTE HYDROGRAPH FOR BASIN IPN5
          61          BA    .046
          62          LS       0      62
          63          UD    .248

          64          KK RT-IPN5
          65          KM   ROUTE THE FLOW FROM BASIN IPN5 TO API3
          66          RD     400     .03    .013            CIRC     2.5

          67          KK    API3
          68          KM   COMBINE THE FLOW FROM BASIN IPN4 WITH THE ROUTED FLOW FROM BASIN IPN5
          69          HC       2

          70          KK RT-API3
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 71          KM   ROUTE THE FLOW FROM API3 TO API4
 72          RD     440     .02    .013            CIRC     4.5

 73          KK SB-IPN6
 74          KM   COMPUTE HYDROGRAPH FOR BASIN IPN6
 75          BA    .034
 76          LS       0    79.9
 77          UD    .146

 78          KK    API4
 79          KM   COMBINE THE FLOW FROM BASIN IPN6 WITH THE ROUTED FLOW FROM API3
 80          HC       2

 81          KK RT-API4
 82          KM   ROUTE THE FLOW FROM API4 TO API5
 83          RD     900    .002    .013            CIRC     6.0

 84          KK SB-IPN7
 85          KM   COMPUTE HYDROGRAPH FOR BASIN IPN7
 86          BA    .029
 87          LS       0    72.4
 88          UD    .248
                                  HEC-1 INPUT                                    PAGE  3

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

 89          KK    API5
 90          KM   COMBINE THE FLOW FROM BASIN IPN7 WITH THE ROUTED FLOW FROM API4
 91          HC       2

 92          KK RT-API5
 93          KM   ROUTE THE FLOW FROM API5 TO AP3
 94          RD     500     .07    .013            CIRC     6.0

 95          KK     AP3
 96          KM   COMBINE ROUTED FLOW FROM API5 WITH ROUTED FLOW IN THE NATURAL CHANNEL(API2).
 97          KM   THIS IS THE TOTAL FLOW TO THE DF-F RUNDOWN CHANNEL IN THE INTERIM CONDITION
 98          HC       2
 99          KM   ********************************************************************************
100          KM   ****DOWNSTREAM AREA MODELED IN THE ASSUMED FULLY DEVELOPED CONDITION
101          KM   ********************************************************************************

102          KK  SB-PN7
103          KM   COMPUTE HYDROGRAPH FOR BASIN PN7
104          BA    .071
105          LS       0    74.0
106          UD    .200

107          KK  SB-PN8
108          KM   COMPUTE HYDROGRAPH FOR BASIN PN8
109          BA    .036
110          LS       0    88.5
111          UD    .125

112          KK   APDFF
113          KM   COMBINE THE FLOW FROM BASINS PN7 AND PN8 AND AP3. THIS IS THE TOTAL
114          KM   INFLOW TO DETENTION FACILITY F
115          HC       3

116          KK  RR-DFF
117          KM   ROUTE FLOW THRU A PROPOSED REGIONAL DETENTION FACILITY.
118          KM   VOLUME REFLECTS CURRENT DRAFT DESIGN
119          KM   DISCHARGE ASSUMES THE 54" DIA OUTLET SET AT INVERT ELEV. 11.5 IS RESTRICTED
120          KM   TO A 11.7 SF OPENING BY A STEEL PLATE COVERING THE TOP 1.4' OF THE PIPE.
121          KM   DISCHARGE CALCULATED WITH THE ORIFICE EQUATION WITH HEAD CALCULATED TO
122          KM   THE CENTER OF THE OPENING AREA @ ELEVATION 13.28
123          KO       3       1
124          RS       1    STOR       0
125          SV       0     .18     2.6     8.1    15.4   23.70    32.6    42.4    53.1    64.8
126          SE      13      14      16      18      20      22      24      26      28      30
127          SQ       5      30      93     122     146     166     184     201     216     230

128          KK  RT-DFF
129          KM   ROUTE THE OUTFLOW FROM DETENTION FACILITY F DOWN PINE CREEK NORTH FORK FROM
130          KM   ROYAL PINE DRIVE TO AP-4
131          RD    2400     .02    .060            TRAP      20       3
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 132      KK  SB-PN9
 133      KM   COMPUTE HYDROGRAPH FOR BASIN PN9
 134      BA    .110
 135      LS       0    70.5
 136      UD    .219

 137      KK     AP4
 138      KM   COMBINE ROUTED FLOW RT-DFF WITH FLOW FROM BASIN PN9 AT AP-4
 139      HC       2

 140      KK  RT-AP4
 141      KM   ROUTE THE FLOW IN PINE CREEK NORTH FORK CHANNEL FROM AP4
 142      KM   TO DETENTION FACILITY "E" ABOVE STONEGLEN DR.
 143      RD    1400    .032    .060            TRAP      20       3
 144      KM   PN10 DESCRIPTOR NOT USED

 145      KK SB-PN11
 146      KM   COMPUTE HYDROGRAPH FOR BASIN PN11
 147      BA    .083
 148      LS       0    79.0
 149      UD    .194

 150      KK SB-PN12
 151      KM   COMPUTE HYDROGRAPH FOR BASIN PN12
 152      BA   0.101
 153      LS       0    71.0
 154      UD    .222

 155      KK   APDFE
 156      KM   COMBINE ROUTED FLOW FROM AP4 WITH FLOW FROM BASINS PN11 AND PN12
 157      KM   THIS IS THE TOTAL INFLOW TO DETENTION FACILITY E
 158      HC       3

 159      KK  RR-DFE
 160      KM   NOTE: THE INPUT POND VOLUME REFLECTS THE AS-BUILT SURVEY FOR THE PC 200 LOMR
 161      KM   ROUTE FLOW THRU THE THE EXISTING DETENTION FACILITY. ASSUME
 162      KM   THE EXISTING 54" DIA IS UN-RESTRICTED INVERT AT ELEVATION 84.
 163      KM   OUTLET Q ESTIMATED WITH BUREAU OF PUBLIC ROADS NOMOGRAPH FOR
 164      KM   INLET CONTROL OF CULVERTS. DISCHARGE ABOVE EL 800 INCLUDES FLOW
 165      KM   OVER EMERGENCY SPILLWAY
 166      KO       3       1
 167      RS       1    STOR       0
 168      SV       0    0.29    1.95    4.92    8.27   11.99   16.09   20.60   25.51   30.89
 169      SE     784     786     788     790     792     794     796     798     800     802
 170      SQ       0      26      80     133     173     208     238     260     278    1441

 171      KK  RT-DFE
 172      KM   ROUTE THE OUTFLOW FROM DETENTION FACILITY "E" IN A STORM DRAIN TO AP-5
 173      RD    1500    .025    .013            CIRC     4.5
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 174      KK SB-PN15
 175      KM   COMPUTE HYDROGRAPH FOR BASIN PN15
 176      BA    .069
 177      LS       0    72.7
 178      UD    .186

 179      KK     AP5
 180      KM   COMBINE ROUTED FLOW FROM DFE WITH FLOW FROM BASIN PN15
 181      HC       2

 182      KK  RT-AP5
 183      KM   ROUTE THE FLOW AT AP5 TO AP5A AT THE CONFLUENCE OF THE FLOWS FROM THE
 184      KM   NORTH AND SOUTH FORKS OF PINE CREEK
 185      RD     150    .025    .013            CIRC      5.5
 186      KM   ************************************************************************
 187      KM   ***** BEGIN CALCULATIONS FOR THE SOUTH FORK OF PINE CREEK WATERSHED ****
 188      KM   ************************************************************************
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189          KK SB-IPS1
190          KM   COMPUTE HYDROGRAPH FOR BASIN IPS1
191          BA    .126
192          LS      0    62.0
193          UD    .352

194          KK RT-IPS1
195          KM   ROUTE THE FLOW FROM BASIN IPS1 THROUGH BASIN IPS2 TO API6
196          RD    2200    .028    .045            TRAP      25       10

197          KK SB-IPS2
198          KM   COMPUTE HYDROGRAPH FOR BASIN IPS2
199          BA    .079
200          LS      0    63.2
201          UD    .300

202          KK    API6
203          KM   COMBINE FLOW FROM BASIN IPS2 WITH THE ROUTED FLOW FROM BASIN IPS1
204          HC      2

205          KK RT-API6
206          KM   ROUTE FLOW FROM API6 TO AP6
207          RD     300     .05    .013            CIRC     4.5

208          KK SB-IPS3
209          KM   COMPUTE HYDROGRAPH FOR BASIN IPS3
210          BA    .109
211          LS      0      62
212          UD    .250

213          KK RT-IPS3
214          KM   ROUTE THE FLOW FROM BASIN IPS3 THROUGH BASIN IPS4 TO API7
215          RD    3250    .033    .045            TRAP      10       15
                                  HEC-1 INPUT                                                    PAGE  6

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

216          KK SB-IPS4
217          KM   COMPUTE HYDROGRAPH FOR BASIN IPS4
218          BA    .168
219          LS      0      62
220          UD    .305

221          KK    API7
222          KM   COMBINE THE ROUTED FLOW FROM BASIN IPS3 TO THE FLOW FROM BASIN IPS4
223          HC      2

224          KK RT-API7
225          KM   ROUTE THE FLOW FROM API7 THROUGH BASIN IPS5 TO API8
226          RD    1650    .032    .045            TRAP      10       35
227          RD     600    .015    .032            TRAP       4        3

228          KK SB-IPS5
229          KM   COMPUTE HYDROGRAPH FOR BASIN IPS5
230          BA    .041
231          LS      0    62.0
232          UD    .307

233          KK    API8
234          KM   COMBINE THE ROUTED FLOW FROM API7 TO THE FLOW FROM BASIN IPS5
235          HC      2

236          KK SB-IPS6
237          KM   COMPUTE HYDROGRAPH FOR BASIN IPS6
238          BA    .115
239          LS      0    63.7
240          UD    .363

241          KK     AP6
242          KM   COMBINE THE ROUTED FLOW FROM API8 AND API6 WITH THE FLOW FROM BASIN IPS6
243          HC      3

244          KK  RT-AP6
245          KM   ROUTE THE FLOW FROM AP6 TO AP6A
246          RD     600     .02    .013            CIRC     6.0
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247          KK SB-ISP7
248          KM   COMPUTE HYDROGRAPH FOR BASIN ISP7
249          BA    .030
250          LS       0    84.3
251          UD    .227

252          KK    AP6A
253          KM   COMBINE THE ROUTED FLOW FROM BASIN IPS7 WITH THE ROUTED FLOW FROM API6
254          HC       2
255          KM   ************************************************************************
256          KM   ****DOWNSTREAM AREA MODELED IN THE ASSUMED FULLY DEVELOPED CONDITION
257          KM   ************************************************************************
                                        HEC-1 INPUT                                    PAGE  7

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


258          KK RT-AP6A
259          KM   ROUTE FLOW FROM AP6A AT THE WEST SIDE OF POWERS BLVD TO AP6B.
260          RD     600     .02    .013            CIRC     6.0

261          KK  SB-PS2
262          KM   COMPUTE HYDROGRAPH FOR BASIN PS2
263          BA    .024
264          LS       0    88.4
265          UD    .150

266          KK    AP6B
267          KM   COMBINE FLOW FROM PS2 TO THE ROUTED FLOW AT AP6B
268          HC       2

269          KK RT-AP6B
270          KM   ROUTE FLOW FROM AP6B TO AP7 AT THE BRIARGATE
271          KM   PKWY./ AUSTIN BLUFFS PKWY. INTERSECTION
272          RD     780     .02    .013            CIRC     6.5

273          KK  SB-PS3
274          KM   COMPUTE HYDROGRAPH FOR BASIN PS3
275          BA    .070
276          LS       0    97.5
277          UD    .117

278          KK  SB-PS4
279          KM   COMPUTE HYDROGRAPH FOR BASIN PS4
280          BA    .060
281          LS       0    78.5
282          UD    .178

283          KK     AP7
284          KM   COMBINE ROUTED FLOW AT AP7 WITH FLOW FROM BASINS PS3 AND PS4
285          HC       3

286          KK  RT-AP7
287          KM   ROUTE THE COMBINED FLOW AT AP7 TO AP7A
288          RD    1050    .022    .013            TRAP       9

289          KK  SB-PS5
290          KM   COMPUTE HYDROGRAPH FOR BASIN PS5
291          BA    .030
292          LS       0    96.0
293          UD     .13

294          KK  SB-PS6
295          KM   COMPUTE HYDROGRAPH FOR BASIN PS6
296          BA    .053
297          LS       0    97.5
298          UD    .126
                                        HEC-1 INPUT                                    PAGE  8

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


299          KK    AP7A
300          KM   COMBINE ROUTED FLOW AT AP7A WITH FLOW FROM BASINS PS5 AND PS6
301          HC       3

302          KK RT-AP7A
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303          KM   ROUTE THE COMBINED FLOW AT AP7A TO AP8
304          RD     800    .022    .013            TRAP      11

305          KK  SB-PS7
306          KM   COMPUTE HYDROGRAPH FOR BASIN PS7
307          BA    .031
308          LS       0    97.5
309          UD    .118

310          KK  SB-PS8
311          KM   COMPUTE HYDROGRAPH FOR BASIN PS8
312          BA    .112
313          LS       0    83.0
314          UD    .174

315          KK     AP8
316          KM   COMBINE ROUTED FLOW AT AP8 WITH FLOW FROM BASINS PS7 AND PS8
317          HC       3

318          KK  RT-AP8
319          KM   ROUTE THE COMBINED FLOW AT AP8 TO AP9, AT DF C
320          RD     250    .022    .013            TRAP      16

321          KK  SB-PS9
322          KM   COMPUTE HYDROGRAPH FOR BASIN PS9
323          BA    .054
324          LS       0    90.0
325          UD    .125

326          KK  RT-PS9
327          KM   ROUTE THE FLOW FROM BASIN PS9 TO AP9, AT DF C
328          RD     880    .025    .013            CIRC     4.0

329          KK     AP9
330          KM   COMBINE ROUTED FLOW AT AP9 WITH FLOW FROM BASIN PS3. THIS IS THE TOTAL FLOW
331          KM   DETENTION FACILITY C FROM UNION BLVD AND UPSTREAM AREAS
332          HC       2

333          KK SB-PS10
334          KM   COMPUTE HYDROGRAPH FOR BASIN PS10
335          BA    .053
336          LS       0    73.4
337          UD    .177
                                    HEC-1 INPUT                                          PAGE  9

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


338          KK   APDFC
339          KM   COMBINE FLOW AT AP-9 TO FLOW FROM SB-PS10 IN REGIONAL DETENTION FACILITY "C"
340          KM   THIS IS THE TOTAL INFLOW TO DETENTION FACILITY "C"
341          HC       2

342          KK  RR-DFC
343          KM   ROUTE FLOW THRU REGIONAL DETENTION FACILITY C.  ASSUME THE PLANNED 48" DIA
344          KM   OUTLET WITH THE INVERT AT EL 62.  OUTLET Q ESTIMATED WITH BUREAU OF PUBLIC
345          KM   ROADS NOMOGRAPH FOR INLET CONTROL OF CULVERTS, SCALE 1.
346          KO       3       1
347          RS       1    STOR       0
348          SV       0     1.1     7.7    16.9    26.9    37.7    49.2    61.5    74.5    88.4
349          SE      63      64      66      68      70      72      74      76      78      80
350          SQ       6      23      70     110     140     168     190     215     232     245

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

355          KK SB-PS11
356          KM   COMPUTE HYDROGRAPH FOR BASIN PS11
357          BA    .054
358          LS       0    80.3
359          UD    .172

360          KK    AP10
361          KM   COMBINE ROUTED FLOW RT-DFC TO FLOW FROM SB-PS11
362          HC       2
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363          KK SB-PS12
364          KM   COMPUTE HYDROGRAPH FOR BASIN PS12
365          BA    .153
366          LS       0    69.0
367          UD    .233

368          KK   APDFB
369          KM   COMBINE FLOW AT AP10 TO FLOW FROM BASIN PS12
370          HC       2

371          KK  RR-DFB
372          KM   ROUTE FLOW THROUGH REGIONAL DETENTION POND "B"
373          KM   VOLUME REFLECTS 11-99 AS-BUILT DATA
374          KM   DISCHARGE ASSUMES THE 54" DIA OUTLET SET AT INVERT ELEV. 69.9 IS RESTRICTED
375          KM   TO A 11.7 SF OPENING BY A STEEL PLATE COVERING THE TOP 1.4' OF THE PIPE
376          KM   DISCHARGE CALCULATED WITH THE ORIFICE EQUATION WITH HEAD CALCULATED TO
377          KM   THE CENTER OF THE OPENING AREA @ ELEVATION 71.68 DISCHARGE ABOVE 87.6
378          KM   INCLUDES FLOW OVER 80' LONG EMERGENCY SPILLWAY
379          KO       3       1
380          RS       1    STOR       0
381          SV       0    0.06    0.66    2.51    5.08    8.05   11.42   15.22   19.49   23.24
382          SV   24.76   29.96
383          SE    70.6    72.0      74      76      78      80      82      84      86    87.6
384          SE      88      90
                                      HEC-1 INPUT                                          PAGE 10

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

385          SQ       0      20      86     117     142     163     181     198     213     225
386          SQ     289    1133

387          KK  RT-DFB
388          KM   ROUTE FLOW 1000 LF NORTHWEST IN A STORM DRAIN FROM DETENTION FACILITY "B"
389          KM   TO AP-11
390          RD    1000    .021    .013            CIRC     5.0

391          KK SB-PS13
392          KM   COMPUTE HYDROGRAPH FOR BASIN PS13
393          BA    .065
394          LS       0    74.3
395          UD    .149

396          KK    AP11
397          KM   COMBINE ROUTED FLOW RT-DFB TO FLOW FROM BASIN PS13 AT AP11
398          HC       2

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

403          KK    AP5A
404          KM   COMBINE ROUTED FLOW AP5 (FLOW FROM THE NORTH FORK OF PINE CREEK) TO ROUTED
405          KM   FLOW RT-AP11 (FLOW FROM THE SOUTH FORK OF PINE CREEK)
406          HC       2

407          KK RT-AP5A
408          KM   ROUTE THE FLOW AT AP5A IN THE PLANNED 84" STORM SEWER TO PI9NE CREEK THE
409          KM   DOWN PINE CREEK MAIN CHANNEL TO AP12. USE AN APPROXIMATE AVERAGE CHANNEL
410          KM   SECTION AND SLOPE FOR ROUTING.
411          RD     300     .02    .013            CIRC     7.0
412          RD    1500    .023    .060            TRAP      50       2

413          KK SB-PN13
414          KM   COMPUTE HYDROGRAPH FOR BASIN PN13
415          BA   0.045
416          LS       0    64.0
417          UD    .241

418          KK RR-DFIR
419          KM   ROUTE FLOW FROM BASIN PN13 THRU THE EXISTING IRRIGATION POND AS A EXTENDED
420          KM   RELEASE DETENTION POND
421          KM   START STORAGE AT EL 6899.5, SURFACE AREA 55012 SF
422          KM   H.W.S.E. = 6902.0, SURFACE AREA 65,931 SF
423          KO       3       1
424          RS       1    STOR       0
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 425          SV       0     3.5      10
 426          SE   899.5     902     903
 427          SQ       0     1.0     2.0
                                    HEC-1 INPUT                                                    PAGE 11

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


 428          KK  SB-PM1
 429          KM   COMPUTE HYDROGRAPH FOR BASIN PM1
 430          BA    .054
 431          LS       0    78.5
 432          UD    .203

 433          KK  RT-PM1
 434          KM   ROUTE THE FLOW FROM BASIN PM1 1200 LF NORTH IN THE LEXINGTON DR. S.D. TO
 435          KM   PINE CREEK MAIN CHANNEL THEN IN THE PINE CREEK CHANNEL TO AP12.
 436          RD    1200     .08    .013             CIR      3.5
 437          RD     400     .03    .060            TRAP       30        2

 438          KK  SB-PM2
 439          KM   COMPUTE HYDROGRAPH FOR BASIN PM2, AN AREA OF THE GOLF COURSE
 440          BA    .187
 441          LS       0    68.5
 442          UD    .310

 443          KK  SB-PM3
 444          KM   COMPUTE HYDROGRAPH FOR BASIN PM3
 445          BA    .058
 446          LS       0    71.0
 447          UD    .248

 448          KK    AP12
 449          KM   COMBINE ROUTED FLOW RT-PM1 WITH THE ROUTED FLOW IN PINE CREEK MAIN CHANNEL
 450          KM   AND THE FLOW FROM BASINS PM2, PM3, AND THE OUTFLOW FROM DFIR
 451          KM   NOTE OUTFLOW FROM DFIR IS INSIGNIFICANT IN THE  100 YEAR DESIGN STORM
 452          HC       5

 453          KK RT-AP12
 454          KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM AP12
 455          KM   TO THE CROSSING AT CHAPEL HILLS DRIVE.
 456          KM   USE AN APPROXIMATE AVERAGE CHANNEL SECTION AND SLOPE FOR ROUTING.
 457          RD    1600    .018    .060            TRAP       30        2

 458          KK  SB-PM4
 459          KM   COMPUTE HYDROGRAPH FOR BASIN PM4
 460          BA    .111
 461          LS       0    71.9
 462          UD    .170

 463          KK    AP13
 464          KM   COMBINE FLOW FROM BASIN PM4 TO THE ROUTED FLOW RT-AP12 IN PINE CREEK MAIN
 465          KM   CHANNEL ON THE EAST SIDE OF THE CHAPEL HILLS DRIVE CROSSING
 466          HC       2
 467          KM   ********************************************************************************
 468          KM   ********BEGIN SOUTH CHAPEL HILLS DRIVE STORM DRAIN WATERSHED*****************
 469          KM   ********************************************************************************
                                    HEC-1 INPUT                                                    PAGE 12

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


 470          KK  SB-CS1
 471          KM   COMPUTE HYDROGRAPH FOR BASIN CS1
 472          BA    .053
 473          LS       0    73.8
 474          UD    .181

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

 478          KK  SB-CS2
 479          KM   COMPUTE HYDROGRAPH FOR BASIN CS2
 480          BA    .070
 481          LS       0    98.0
 482          UD    .101
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483          KKRR-DFCS2
484          KM   ROUTE FLOW THRU AN ASSUMED DETENTION FACILITY TO REFLECT DETENTION OF 1.6cfs
485          KM   /ACRE FROM THE LI/O PROPERTY AS ASSUMED IN THE MDDP FOR BRIARGATE BUSINESS
486          KM   CAMPUS. BECAUSE THE DISCHARGE CONFIGURATION IS UNKNOWN AT THIS TIME ASSUME
487          KM   THAT THE PEAK DISCHARGE RATE MAY BE DISCHARGED AS SOON AS IT IS AVAILABLE AT
488          KM   THE POND TO REFLECT POTENTIAL FREE DISCHARGE FROM A PORTION OF THE SUBBASIN
489          KM   DISCHARGE REDUCTION ASSUMED AT 1.6 cfS x 37ac=60 cfs
490          RS       1    STOR       0
491          SV       0    .001       6      10
492          SE     100     102     104     106
493          SQ       0     194     194     194

494          KK    AP14
495          KM   COMBINE ROUTED FLOW RT-CS1 TO CONTROLED FLOW FROM BASIN CS2 AT THE
496          KM   INTERSECTION OF CHAPEL HILLS DR. AND DYNAMIC DR.
497          HC       2

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

504          KK  SB-CS3
505          KM   COMPUTE HYDROGRAPH FOR BASIN CS3
506          BA    .051
507          LS       0    85.5
508          UD    .177

509          KKRR-DFCS3
510          KM   ROUTE FLOW THRU AN ASSUMED DETENTION FACILITY TO REFLECT DETENTION REDUCING
511          KM   THE PEAK 100YR FLOW RATE FROM THE 9 ACRES OF THE BASIN THAT ARE DESIGNATED
512          KM   AS LI/O USE AS ASSUMED IN MDDP FOR BRIARGATE BUSINESS CAMPUS.
513          KM   BECAUSE THE DISCHARGE CONFIGURATION IS UNKNOWN AT THIS TIME ASSUME
514          KM   THAT THE PEAK DISCHARGE RATE MAY BE DISCHARGED AS SOON AS IT IS AVAILABLE
515          KM   AT THE POND TO REFLECT FREE DISCHARGE FROM A PORTION OF THE SUB BASIN.
516          KM   DISCHARGE REDUCTION ASSUMED AT 1.6 cfS x 9=14 cfs
                                  HEC-1 INPUT                                    PAGE 13

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

517          RS       1    STOR       0
518          SV       0    .001       6      10
519          SE     100     102     104     106
520          SQ       0     123     123     123

521          KK    AP15
522          KM   COMBINE ROUTED FLOW RT-AP14 WITH CONTROLLED FLOW FROM BASIN CS3 AT THE
523          KM   INTERSECTION OF CHAPEL HILLS DR. AND BRIARGATE PARKWAY. NOTE A SMALL PORTION
524          KM   OF BASIN CS3 IS LOCATED DOWNSTEAM OF THIS POINT. FOR THIS MODELING PURPOSE
525          KM   THIS IS CONSIDERED INSIGNIFICANT.
526          HC       2

527          KK RT-AP15
528          KM   ROUTE FLOW 1400 LF NORTH IN THE CHAPEL HILLS DR. S.D.
529          KM   NOTE: THE CALCULATED 100 YEAR FLOW IS IN EXCESS OF THE FULL PIPE CAPACITY
530          KM   OF THE STORM DRAIN BETWEEN BRIARGATE PARKWAY AND PINE CREEK. SOME OF
531          KM   THE FLOW MAY BE ON THE SURFACE IN CHAPEL HILLS DRIVE. A SMALL PORTION OF
532          KM   THE SURFACE FLOW MAY BE DIVERTED DOWN BRIARGATE PARKWAY, BUT FOR THE PURPOS
533          KM   OF THIS ANALYSIS ALL OF THE FLOW FROM THE CHAPEL HILLS DRIVE/BRIARGATE PKY.
534          KM   INTERSECTION IS ASSUMED TO REACH PINE CREEK AT CHAPEL HILLS DRIVE.
535          RD    1400     .045    .013             CIR     4.5

536          KK  SB-CS4
537          KM   COMPUTE HYDROGRAPH FOR BASIN CS4
538          BA    .066
539          LS       0    86.0
540          UD    .128

541          KK RR-DFVC
542          KM   ROUTE FLOW THRU THE PROPOSED VILLAGE CENTER DETENTION FACILITY
543          KM   POND VOLUME BASED ON 1/02 SURVEY
544          KM   DISCHARGE BASED ON 18" FES OUTLET WITH AN INVERT ELEV.=70.7
545          KM   BUREAU OF PUBLIC ROADS NOMOGRAPH USED TO ESTIMATE OUTFLOW RATES ASSUMING
546          KM   INLET CONTROL.
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547          RS       1    STOR       0
548          SV       0     .01    0.68     2.11     3.72     5.70      6.8
549          SE    70.7      72      74       76       78       80       81
550          SQ       0       5      15       21       25       28       29

551          KK    AP16
552          KM   COMBINE ROUTED FLOW RT-AP15 WITH THE DISCHARGE FROM THE VILLAGE CENTER POND
553          HC       2

554          KK RT-AP16
555          KM   ROUTE THE FLOW IN THE CHAPEL HILLS DRIVE STORM DRAIN FROM AP16 TO AP19 IN
556          KM   PINE CREEK MAIN CHANNEL ON THE DOWNSTREAM SIDE OF THE CHAPEL HILLS DRIVE
557          KM   CROSSING
558          RD     300     .03    .013             CIR     4.5
559          KM   ********************************************************************************
560          KM   ****BEGIN CALCULATION OF THE NORTH CHAPEL HILLS DR. STORM DRAIN WATERSHED***
561          KM   ********************************************************************************
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

562          KK  SB-CN1
563          KM   COMPUTE RUNOFF FROM BASIN CN1 THE WATERSHED CONTRIBUTING TO THE PARK SITE AT
564          KM   CHAPEL HILLS DRIVE POND (REGIONAL DETENTION FACILITY "A").
565          BA     .11
566          LS       0    78.4
567          UD    .190

568          KK  RR-DFA
569          KM   ROUTE THE FLOW FROM CN1 THROUGH THE DETENTION POND AT THE PARK
570          KM   SITE AT CHAPEL HILLS DRIVE. STAGE STORAGE CURVE PER THE 12/22/97 GRADING PLAN
571          KM   DISCHARGE CURVE REFLECTS 12" DIAMETER OUTLET PIPE CONTROL FOR NORMAL DISCHARG
572          KM   AND A 100' LONG EMERGENGY SPILLWAY SET AT ELEVATION 6805.5
573          KO       3       1
574          RS       1    STOR       0
575          SV       0     .01     .22      .99     1.95     2.80     4.25     5.31     6.51    11.64
576          SV   15.36
577          SQ    2.35    2.54     3.00     3.73     4.35     4.75     5.36     5.50     8.39     9.01
578          SQ     279
579          SE  6796.6  6797.0  6798.0  6800.0  6802.0  6803.5 6803.51     6804  6804.1  6805.5
580          SE  6806.5

581          KK  RT-DFA
582          KM   ROUTE OUTFLOW FROM  REGIONAL DETENTION POND "A" DOWN THE CHAPEL HILLS STORM
583          KM   DRAIN FROM LEXINGTON DRIVE TO TREELAKE DRIVE
584          RD     930     .04    .013             CIRC     1.5

585          KK  SB-CN2
586          KM   COMPUTE RUNOFF FROM BASIN CN2
587          BA    .078
588          LS       0    75.5
589          UD    .214

590          KK    AP17
591          KM   COMBINE ROUTED FLOW RT-DFA AND FLOW FROM BASIN CN2 AT THE INTERSECTION OF
592          KM   CHAPEL HILLS DRIVE AND TREELAKE DRIVE
593          HC       2

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

597          KK  SB-CN3
598          KM   COMPUTE RUNOFF FROM BASIN CN3
599          BA    .043
600          LS       0    80.0
601          UD    .157

602          KK    AP18
603          KM   COMBINE ROUTED FLOW RT-AP17 TO FLOW FROM BASIN CN3 AT INTERSECTION OF CHAPEL
604          KM   HILLS DR. AND MULLIGAN DR.
605          HC       2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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606          KK RT-AP18
607          KM   ROUTE FLOW AT AP18 DOWN THE CHAPEL HILLS DRIVE STORM DRAIN TO AP19 IN THE
608          KM   PINE CREEK MAIN CHANNEL ON THE DOWNSTREAM SIDE OF THE CHAPEL HILLS DRIVE
609          KM   CROSSING. NOTE A SMALL PORTION OF BASIN CHN3 IS LOCATED SOUTH OF AP18. THIS
610          KM   IS CONSIDERED INSIGNIFICANT FOR THE PURPOSE OF THIS ANALYSIS.
611          RD     600     .04    .013            CIRC     3.5

612          KK    AP19
613          KM   COMBINE ROUTED FLOW RT-AP18 FROM THE NORTH CHAPEL HILLS DR. STORM DRAIN
614          KM   WITH THE ROUTED FLOW RT-AP16 FROM THE SOUTH CHAPEL HILLS DRIVE STORM DRAIN
615          KM   AND THE FLOW IN PINE CREEK MAIN CHANNEL (AP13) AT THE WEST SIDE OF THE CHAPEL
616          KM   HILLS DRIVE CROSSING. FLOW THAT IS TAKEN INTO THE PINE CREEK CHANNEL FORM THE
617          KM   STREET AT THIS POINT HAS BEEN ACCOUNTED FOR IN BASINS CN3 AND CS3. THIS WAS
618          KM   DONE TO REDUCE THE COMPLEXITY OF THE MODEL.
619          HC       3

620          KK RT-AP19
621          KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL FROM AP19 AT THE CHAPEL HILLS DRIVE
622          KM   CROSSING TO AP19A AT THE OUTFALL FROM THE SUB-BASIN PM6A, USE AVERAGE SLOPES
623          KM   AND APPROXIMATE CROSS SECTIONS FOR ROUTING.
624          RD     550    .035    .060            TRAP      30       2
625          RD     650    .025    .060            TRAP     120       2

626          KK SB-PM6A
627          KM   COMPUTE HYDROGRAPH FOR BASIN PM6A
628          BA    .042
629          LS       0    90.0
630          UD    .131

631          KK   AP19A
632          KM   COMBINE FLOW FROM BASIN PM6A WITH THE ROUTED FLOW IN PINE CREEK
633          HC       2

634          KKRT-AP19A
635          KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL FROM AP19A AT THE OUTFALL FROM
636          KM   SUB-BASIN PM6A TO AP20 AT REGIONAL DETENTION FACILITY 1 AT BRIARGATE PARKWAY
637          KM   AND HIGHWAY 83. USE AVERAGE SLOPES AND APPROXIMATE CROSS SECTIONS FOR ROUTING
638          RD     450    .025    .060            TRAP     120       2
639          RD    1400    .026    .060            TRAP      60       2

640          KK  SB-PM5
641          KM   COMPUTE HYDROGRAPH FOR BASIN PM5
642          BA    .193
643          LS       0    70.5
644          UD    .185

645          KK    AP20
646          KM   COMBINE FLOW FROM BASIN PM5 WITH THE ROUTED FLOW IN PINE CREEK
647          HC       2
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LINE         ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

648          KK SB-PM6B
649          KM   COMPUTE HYDROGRAPH FOR SUB-BASIN PM6B
650          KM   NOTE:THE MDDP FOR BRIARGATE BUSINESS CAMPUS REQUIRES DETENTION IN THIS
651          KM   SUBBASIN. FOR THE PURPOSE OF THIS ANALYSIS NO DETENTION IS ASSUMED TO ALLOW
652          KM   THE DEVELOPER THE OPTION OF CONSTRUCTING LARGER CONVEYANCE FACILITIES TO
653          KM   DETENTION FACILITY No. 1 AND ALLOWING FREE DISCHARGE FROM THE BASIN.
654          BA    .036
655          LS       0    98.0
656          UD    .115

657          KK    AP21
658          KM   COMBINE FLOW FROM PM6A WITH THE FLOW IN PINE CREEK AT AP21 FOR THE TOTAL FLOW
659          KM   IN PINE CREEK CHANNEL AS IT ENTERS DETENTION FACILITY No 1
660          KO       0       1
661          HC       2

662          KK  SB-PM7
663          KM   COMPUTE HYDROGRAPH FOR BASIN PM7 THE AREA NORTH OF DETENTION FACILITY 1
664          KM   NOTE: THE MDDP FOR THE BRIARGATE BUSINESS CAMPUS REQUIRES DETENTION IN
665          KM   THE NON RESIDENTIAL PORTIONS OF THIS AREA. FOR THE PURPOSE OF THIS ANALYSIS
666          KM   FREE DISCHARGE FROM THE BASIN IS ASSUMED. THE RESIDENTIAL PORTION OF THE
667          KM   BASIN LOCATED IN OUTSIDE THE CITY LIMITS IS ASSUMED TO BE FULLY DEVELOPED
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668          KM   AS 1 DU PER ACRE RESIDENTIAL.
669          BA    .138
670          LS      0    76.3
671          UD    .353
672          KM   ********************************************************************************
673          KM   ****BEGIN CALCULATIONS FOR THE FOCUS ON THE FAMILY STORM DRAIN WATERSHED****
674          KM   ********************************************************************************

675          KK   SB-F1
676          KM   COMPUTE HYDROGRAPH FOR BASIN F1
677          BA    .119
678          LS      0    78.3
679          UD    .208

680          KK   RT-F1
681          KM   ROUTE FLOW IN THE STORM DRAIN 1300 LF WEST FROM THE SAG PT. IN LEXINGTON
682          KM   DRIVE TO SUMMER FIELD POND
683          RD    1300    .036    .013            CIRC       3

684          KK   SB-F2
685          KM   COMPUTE HYDROGRAPH FOR BASIN F2
686          BA    .039
687          LS      0    74.0
688          UD    .171

689          KK AP-DFSF
690          KM   COMBINE ROUTED FLOWS RT-F1 WITH FLOW FROM F2 AT THE SUMMER
691          KM   FIELD POND. THIS IS THE TOTAL FLOW TO THE POND
692          HC      2
                                    HEC-1 INPUT                                          PAGE 17

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

693          KK RR-DFSF
694          KM   ROUTE THE FLOW AT AP-DFSF THROUGH THE SUMMER FIELD DETENTION BASIN.
695          KM   THE INFLOW/OUTFLOW S.D. FOR THIS FACILITY IS BURIED BELOW THE POND BOTTOM.
696          KM   THE POND FILLS WHEN THE CAPACITY OF THE DOWNSTREAM REACH OF S.D. IS
697          KM   EXCEEDED. THIS CONFIGURATION PRESENTS A COMPLEX HYDRAULIC PROBLEM. IT IS
698          KM   ASSUMED THAT UNTIL INFLOW >120cfs FLOW WILL PASS THROUGH THE STORM DRAIN.
699          KM   WHEN INFLOW > 120cfs BACKWATER WILL FORM AT THE OUTLET AND THE LID ON THE
700          KM   UPSTREAM MANHOLE WILL LIKELY BE LIFTED OFF AND SOME FLOW WILL ENTER THE POND
701          KM   FROM THAT POINT. WHEN INFLOW>120cfs IT IS ASSUMED THAT THE HEAD LOSS AT
702          KM   THE OUTLET WILL BE APPOXIMATELY 1*VELOCITY HEAD FOR THE PURPOSE OF
703          KM   CALCULATING THE DISCHARGE CURVE.
704          KO      3       1
705          RS      1    STOR       0
706          SV      0    0.57    4.63    6.87   10.32
707          SE     92      94      96      98     100
708          SQ     80     126     131     137     144

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

712          KK   SB-F3
713          KM   COMPUTE HYDROGRAPH FOR BASIN F3
714          BA    .114
715          LS      0    77.0
716          UD    .215

717          KK    AP22
718          KM   COMBINE ROUTED FLOW RT-DTSF TO FLOW FROM BASIN F3 AT THE INTERSECTION OF
719          KM   RESEARCH PARKWAY AND SUMMERSET DRIVE.
720          HC      2

721          KKRT-AP22P
722          KM   ROUTE THE S.D.FLOW FROM THE BRIARGATE PKWY/ SUMMERSET INTERSECTION TO THE
723          KM   INTERSECTION OF RESEARCH PKWY. AND CHAPEL HILLS DR.
724          RD    2100     .02    .013            CIRC       5

725          KK   SB-F4
726          KM   COMPUTE HYDROGRAPH FOR BASIN F4
727          BA    .038
728          LS      0    83.0
729          UD    .197
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730         KK RR-DFF4
731         KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
732         KM   RATE OF 1.6 CFS/ACRE FROM THE 11.5 AC THAT WILL BE DEVELOPED AS LI/O
733         KM   DISCHARGE REDUCTION PER ACRE IS DETERMINED PER THE RATE AND AREA INCLUDED
734         KM   IN THE MDDP FOR BRIARGATE BUSINESS CAMPUS
735         KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
736         KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE SITE WILL LIKELY
737         KM   FREE DISCHARGE TO THE ADJACENT STREET
738         KM   DISCHARGE REDUCTION = LI/O AREA (acres)11.5 x 1.6 cfs = 18.4 cfs
739         RS      1    STOR       0
740         SV      0    .001       6      10
                                  HEC-1 INPUT                                    PAGE 18

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

741         SE    100     102     104     106
742         SQ      0    70.6    70.6    70.6

743         KK    AP23
744         KM   COMBINE ROUTED FLOW RT-AP22P TO FLOW FROM BASIN F4 AT THE INTERSECTION OF
745         KM   RESEARCH PARKWAY AND CHAPEL HILLS DR.
746         HC      2
747         KM   KK AP23P
748         KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
749         KM   FIRST MANHOLE (MH8) DOWNSTREAM OF THE INTERSECTION OF RESEARCH PARKWAY AND
750         KM   CHAPEL HILLS DRIVE. THE MANHOLE IS LOCATED JUST UPSTREAM OF A PIPE SIZE
751         KM   REDUCTION FROM 54" TO 48" DIA.. IT IS ASSUMED THAT THE MH LID WILL BE PUSHED
752         KM   OFF BY THE HIGH HGL ABOVE THE TRANSITION AT THE ESTIMATED 100 YEAR PEAK
753         KM   FLOW RATE. DOWNSTREAM PIPE CAPACITY IS ESTIMATED AT 298 cfs BASED ON
754         KM   FULL PIPE CONVEYANCE CAPACITY OF 48" DIA RCP, SLOPE = 4.3%
755         KM   DT AP23S
756         KM   DI 298,300,325,350,375,400,425,450,470
757         KM   DQ   0,  2, 27, 52, 77,102,127,152,172

758         KKRT-AP23P
759         KM   ROUTE THE FLOW IN THE STORM DRAIN FROM THE RESEARCH PKWY/CHAPEL HILLS DR.
760         KM   INTERSECTION TO THE INTERSECTION OF EXPLORER DRIVE AND THE FOCUS ON THE
761         KM   FAMILY S.D.
762         RD    2100    .044    .013            CIRC       4
763         KM   KK AP23S
764         KM   RETRIEVE THE DIVERTED FLOW AT MH8 JUST DOWNSTREAM OF THE INTERSECTION OF
765         KM   RESEARCH PARKWAY AND CHAPEL HILLS DRIVE. THIS IS SURFACE FLOW.
766         KM   DR AP23S
767         KM   KK RT-AP23S
768         KM   ROUTE THE SURFACE FLOW AT MH8 ACCROSS THE FOCUS SITE TO EXPLORER DRIVE
769         KM   ASSUME FLOW WILL BE SHALLOW AND WIDE THROUGH THE PARKING LOTS
770         KM   RD 1550,.042,.015,,TRAP,75,50

771         KK   SB-F5
772         KM   COMPUTE HYDROGRAPH FOR BASIN F5
773         BA    .064
774         LS      0    89.0
775         UD    .121

776         KK RR-DFF5
777         KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
778         KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
779         KM   AND HISTORIC PEAK 100 YR FLOW RATE PER THE ORIGINAL DBPS CRITERIA FOR LI/O
780         KM   LAND USE. HISTORIC 100 YR PEAK ESTIMATED AT 1.5 CFS/AC. FULLY DEVELOPED 100
781         KM    YR PEAK ESTIMATED AT 4.9 CFS/AC. ESTIMATED REQUIRED DETENTION =
782         KM   (4.9-1.5)*.35*35AC=41cfs   TOTAL Qin=199cfs
783         KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
784         KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
785         KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
786         RS      1    STOR       0
787         SV      0    .001       6      10
788         SE    100     102     104     106
789         SQ      0     158     158     158
                                  HEC-1 INPUT                                    PAGE 19

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

790         KK    AP24
791         KM   COMBINE THE ROUTED FLOW IN THE S.D.(RTAP23P) TO FLOW FROM FF1
792         KM   AT THE INTERSECTION OF EXPLORER DRIVE AND THE FOCUS ON THE FAMILY STORM DRAIN
793         HC      2
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794          KM   KK AP24P
795          KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
796          KM   INTERSECTION OF EXPLORER DRIVE AND TELSTAR DRIVE. DOWNSTREAM
797          KM   STORM DRAIN IS A 66" DIA RCP @ S=1.1%, FULL FLOW CAPACITY= 350cfs
798          KM   ASSUME THIS DIVERTED FLOW WILL GO WEST DOWN TELSTAR DRIVE
799          KM   DT AP24S
800          KM   DI 350,351,370,390,410,430,450,470,490
801          KM   DQ   0,  1, 20, 40, 60, 80,100,120,140

802          KKRT-AP24P
803          KM   ROUTE THE FLOW IN THE FOCUS STORM DRAIN FROM AP24 AT THE INTERSECTION OF
804          KM   EXPLORER DRIVE AND THE FOCUS S.D. TO AP25 AT THE INTERSECTION OF EXPLORER
805          KM   DRIVE & BRIARGATE PKWY
806          RD    800    .011    .013            CIRC     5.5

807          KK   SB-F6
808          KM   COMPUTE HYDROGRAPH FOR BASIN F6
809          BA    .038
810          LS       0    93.5
811          UD    .106

812          KK RR-DFF6
813          KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
814          KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
815          KM   AND HISTORIC PEAK 100 YR FLOW RATE. HISTORIC ESTIMATED AT 1.5 CFS/AC.
816          KM   FULLY DEVELOPED ESTIMATED AT 5.4 CFS/AC. ESTIMATED REQUIRED DETENTION =
817          KM   (5.4-1.5)*.35*21.5AC=29cfs   TOTAL Qin=131cfs
818          KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
819          KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
820          KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
821          RS       1    STOR       0
822          SV       0    .001       6      10
823          SE     100     102     104     106
824          SQ       0     102     102     102

825          KK   SB-F7
826          KM   COMPUTE HYDROGRAPH FOR BASIN F7
827          BA    .052
828          LS       0    90.5
829          UD    .137

830          KK RR-DFF7
831          KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
832          KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
833          KM   AND HISTORIC PEAK 100 YR FLOW RATE. HISTORIC ESTIMATED AT 1.5 CFS/AC.
834          KM   FULLY DEVELOPED ESTIMATED AT 4.9 CFS/AC. ESTIMATED REQUIRED DETENTION =
835          KM   (4.9-1.5)*.35*29AC=35cfs   TOTAL Qin=164cfs
836          KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
837          KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
838          KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
                                  HEC-1 INPUT                                    PAGE 20

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

839          RS       1    STOR       0
840          SV       0    .001       6      10
841          SE     100     102     104     106
842          SQ       0     129     129     129

843          KK    AP25
844          KM   COMBINE ROUTED FLOW RT-AP25P TO CONTROLLED FLOW FROM BASINS F6 AND F7
845          KM   AT THE INTERSECTION OF EXPLORER DR AND BRIARGATE PKWY.
846          HC       3
847          KM   KK AP25P
848          KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
849          KM   INTERSECTION OF EXPLORER DR. AND BRIARGATE PARKWAY. CONTROL APPEARS TO
850          KM   BE DOWNSTREAM 54" DIA S.D. @ 5.5% SLOPE, FULL PIPE CAPACITY=461cfs
851          KM   DIVERTED FLOW IS ASSUMED TO FLOW DOWM BRIARGATE PARKWAY TO THE SUMP
852          KM   ADJACENT TO FACILITY #1
853          KM   DT AP25S
854          KM   DI 461,464,475,500,525,550,575,600,625
855          KM   DQ   0,  1, 14, 39, 64, 89,114,139,164

856          KKRT-AP25P
857          KM   ROUTE THE FLOW IN THE S.D.FROM THE INTERSECTION OF EXPLORER DR. & BRIARGATE
858          KM   PARKWAY TO DETENTION FACILITY 1 AT BRIARGATE PKWY & HIGHWAY 83
859          RD    1250    .011    .013            CIRC     5.5
```

```
860          KK  SB-PM8
861          KM   COMPUTE HYDROGRAPH FOR BASIN PM8 THE PORTION OF BRIARGATE PARKWAY BETWEEN
862          KM   EXPLORER DR. AND HIGHWAY 83
863          BA    .014
864          LS       0    98.0
865          UD    .100

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

870          KK RR-DF#1
871          KM   MODEL STORAGE VOLUME BASED ON 2001 AREAL TOPOGRAPHY.  OUTLET MODELED
872          KM   ASSUMING THE TOP 7.5' OF THE ENTRANCE TO THE 10'R X 12'S HIGH BOX CULVERT IS
873          KM   BLOCKED AND A NEW 12' WIDE OPENING IS CREATED W/ INVERT AT 67.2
874          KM   OUTFLOW CURVE CALCULATED WITH A SPREADSHEET TREATING THE LOWER OPENING AS
875          KM   A SUBMERGED ORIFICE WITH C=.60, h=POND DEPTH - NORMAL DEPTH IN THE OUTFALL
876          KM   AND THE UPPER OPENING TO ELEVATION 73.0 TREATED AS A SHARP CRESTED WEIR WITH
877          KM   A FULL LENGTH OF 12.77' (THE SKEW LENGTH) ADJUSTED 0.2h FOR END CONTRACTIONS
878          KM   AND C=3.22+0.40(h/P) WHERE P=14.2. ABOVE ELEVATION 73.0 THE TOP OUTLET
879          KM   STRUCTURE IS ASSUMED TO TERMINATE WITHOUT A TOP AND THUS ADDITIONAL FLOW CAN
880          KM   OVER TOP THE SIDES AND BACK OF THE ASSUMED 3 SIDED  STRUCTURE 12.77 x 10
881          KO       3       1
882          RS       1    STOR       0
883          SA       0    0.01    0.02    3.78    4.60    4.95    5.25    5.55    5.85    6.17
884          SA    6.55    6.76    6.98    7.23    7.49
885          SE    54.0    55.0    56.0    58.0    60.0    62.0    64.0    66.0    68.0    70.0
886          SE    72.0    73.0    74.0    75.0    76.0
887          SQ       0      99     184     261     326     380     427     470     532     718
888          SQ     969    1112    1264    1750    2100
```



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

889          KM   SQ    0, 105 ,  194,  275,  344,  401,  451,  496,  560,  747,  998, 1142, 12
890          KM   SQ 1750, 2100
891          KM   KK AP25S
892          KM   RETRIEVE THE DIVERTED FLOW AT THE INTERSECTION OF BRIARGATE PARKWAY AND
893          KM   EXPLORER DRIVE. THIS IS FLOW IN THE STREET.
894          KM   DR AP25S
895          KM   KK RT-AP25S
896          KM   ROUTE THE SURFACE FLOW IN BRIARGATE PARKWAY DOWN BRIARGATE PARKWAY TO PINE
897          KM   CREEK. ASSUME THIS FLOW ENTERS THE CHANNEL AT THE OUTLET FROM DETENTION
898          KM   FACILITY #1.
899          KM   RD 1400,.043,.015,,TRAP,75,.01
900          KM   KK AP26
901          KM   COMBINE ROUTED FLOW RT-AP25S TO THE OUTFLOW FROM DF#1 AT THE INTERSECTION OF
902          KM   BRIARGATE PKWY. AND PINE CREEK. Note:NO FLOW FROM rt-AP25S IN 5 YEAR
903          KM   HC 2

904          KK RT-AP26
905          KM   ROUTE THE COMBINED FLOW FROM AP26 AT BRIARGATE PARKWAY DOWN PINE CREEK TO
906          KM   AP-27 UPSTREM OF THE INTERSECTION OF PINE CREEK AND HIGHWAY 83. USE AVERAGE
907          KM   APPROXIMATE SECTION AND SLOPE FOR ROUTING
908          RD    1450    .019    .060            TRAP      40       2

909          KK  SB-PM9
910          KM   COMPUTE HYDROGRAPH FOR BASIN PM9
911          BA    .068
912          LS       0    83.5
913          UD    .146

914          KK    AP27
915          KM   COMBINE THE FLOW FROM BASIN PM9 AND THE ROUTED FLOW IN PINE CREEK (RT-AP26) A
916          KM   AT THE UPSTREAM SIDE  OF HIGHWAY 83.
917          HC       2

918          KK SB-PM10
919          KM   COMPUTE HYDROGRAPH FOR BASIN PM10
920          BA    .048
921          LS       0    98.0
922          UD     .12

923          KKRRDFPM10
924          KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
```

```
925          KM   RATE TO THE APPROXIMATE PEAK FLOW RATE DISCHARGE GOAL FROM THE BASIN
926          KM   AS SHOWN IN THE FINAL DRAINAGE REPORT FOR BRIARGATE BUSINESS CAMPUS
927          KM   FILING 13 AS APPROVED OCT 31, 1996
928          KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
929          KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN MAY DISCHARGE
930          KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN.
931          KM   DISCHARGE FROM THE BASIN PER THE FINAL DRAINAGE REPORT=140 cfs
932          RS       1    STOR       0
933          SV       0     001      .6     1.5
934          SE     100     102     104     106
935          SQ       0     140     140     140
                                    HEC-1 INPUT                                    PAGE 22

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

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

940          KK SB-PM11
941          KM   COMPUTE HYDROGRAPH FOR BASIN PM11
942          BA    .042
943          LS       0    98.0
944          UD    .121
945          KM   KK AP24S
946          KM   RETRIEVE THE FLOW THAT WAS IN EXCESS OF THE STORM DRAIN CAPACITY AT THE
947          KM   INTERSECTION OF EXPLORER DRIVE AND TELSTAR DRIVE.(AP24S)
948          KM   DR AP24S
949          KM   KK RT-AP24S
950          KM   ROUTE THE RETRIEVED FLOW FROM AP24 DOWN TELSTAR DRIVE TO THE SUMP THEN
951          KM   ACROSS BBC FILING 19 TO AP28 IN PINE CREEK.
952          KM   RD 2200,.05,.015,,TRAP,40,01

953          KK    AP28
954          KM   COMBINE THE FLOW FROM BASIN PM11 WITH THE ROUTED SURFACE FLOW FROM THE
955          KM   INTERSECTION OF TELSTAR DR. AND EXPLORER DRIVE (RT-AP24S), THE FLOW IN
956          KM   PINE CREEK AT AP27, AND THE ROUTED FLOW FROM BASIN PM10.
957          KM   FLOW IS COMBINED IN PINE CREEK AT THE UPSTREAM SIDE OF THE BOX CULVERT
958          KM   UNDER HIGHWAY 83. THIS REPRESENTS THE TOTAL FLOW TO PINE CREEK FROM THE
959          KM   BRIARGATE AREA
960          KO       3       1
961          HC       3
962          ZZ

          SCHEMATIC DIAGRAM OF STREAM NETWORK

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

  NO.      (.) CONNECTOR        (<---) RETURN OF DIVERTED OR PUMPED FLOW

   15     SB-IPN1
               V
               V
   32     RT-IPN1
               .
               .
   35          .     SB-IPN2
               .           .
               .           .
   40        API1.............
               V
               V
   43     RT-API1
               .
               .
   46          .     SB-IPN3
               .           .
               .           .
   51        API2.............
               .
               .
   54          .     SB-IPN4
               .           .
               .           .
   59          .           .     SB-IPN5
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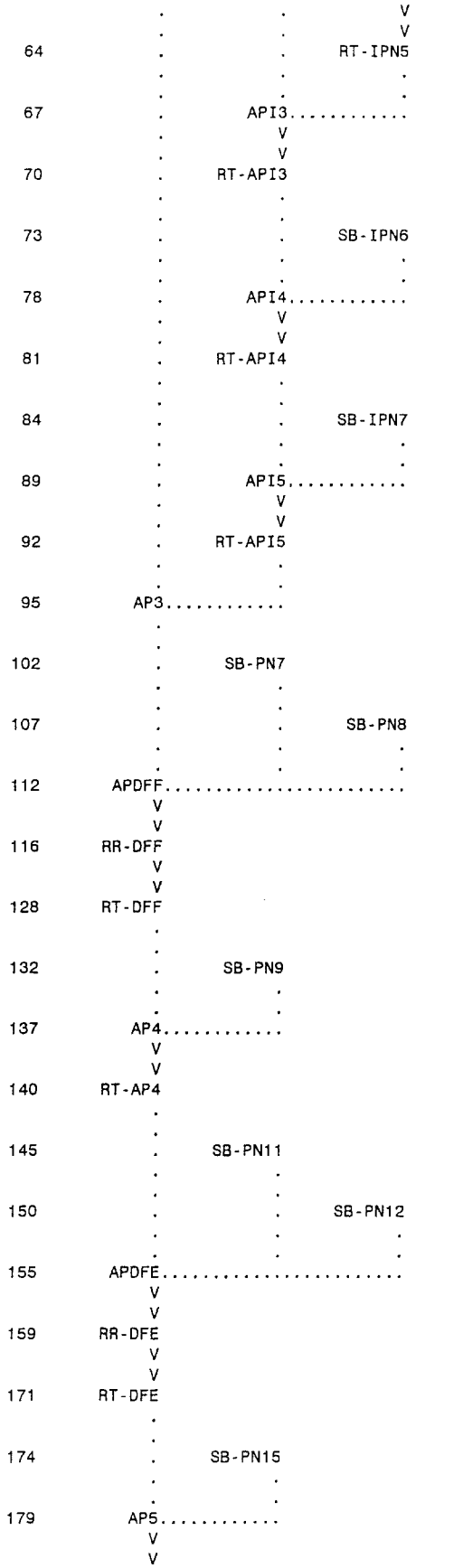
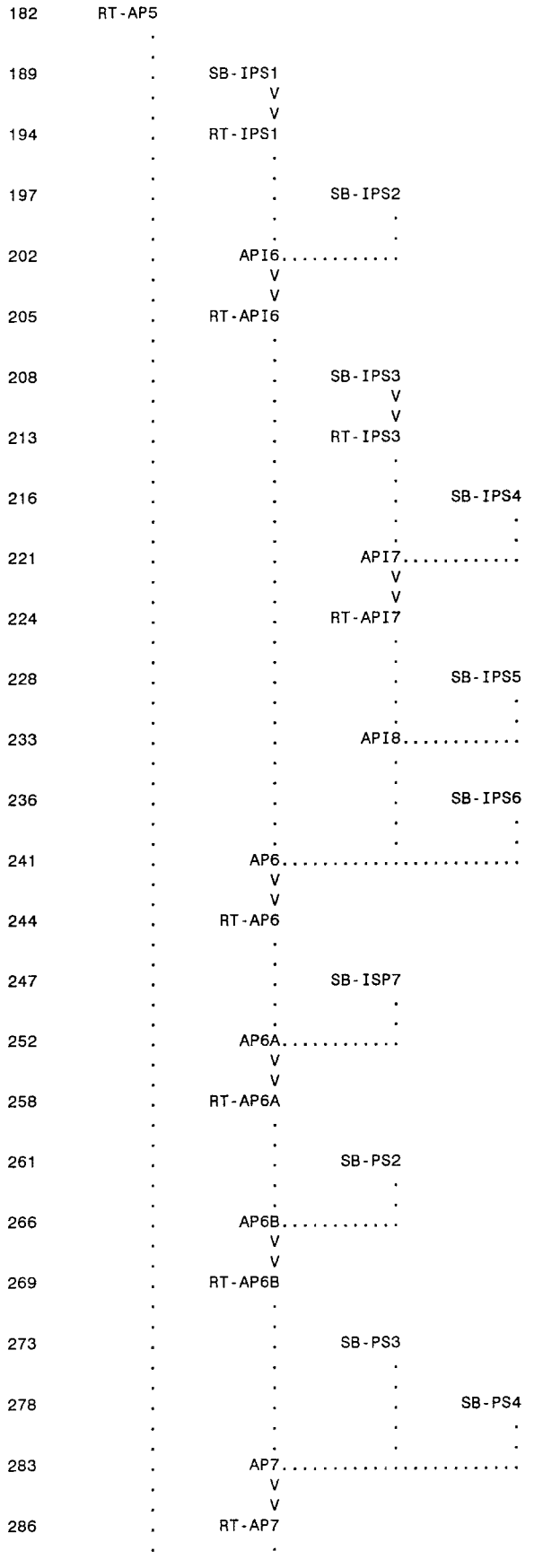
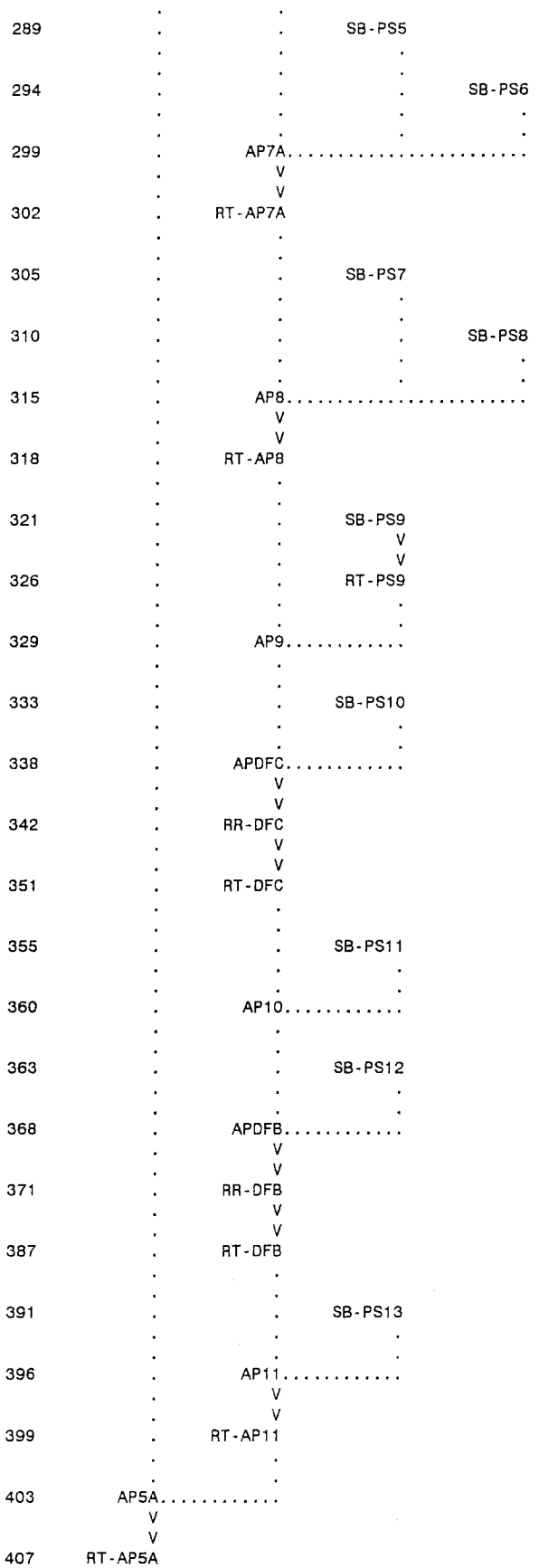
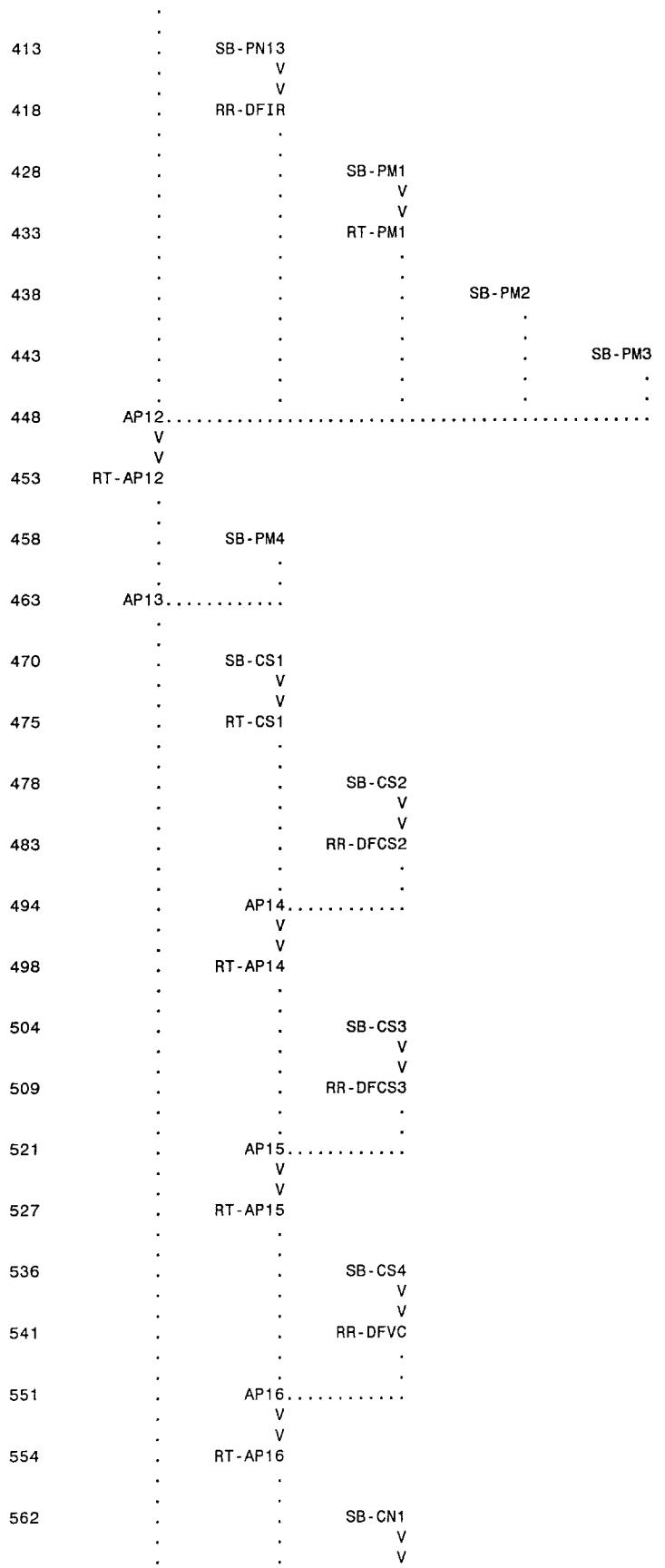
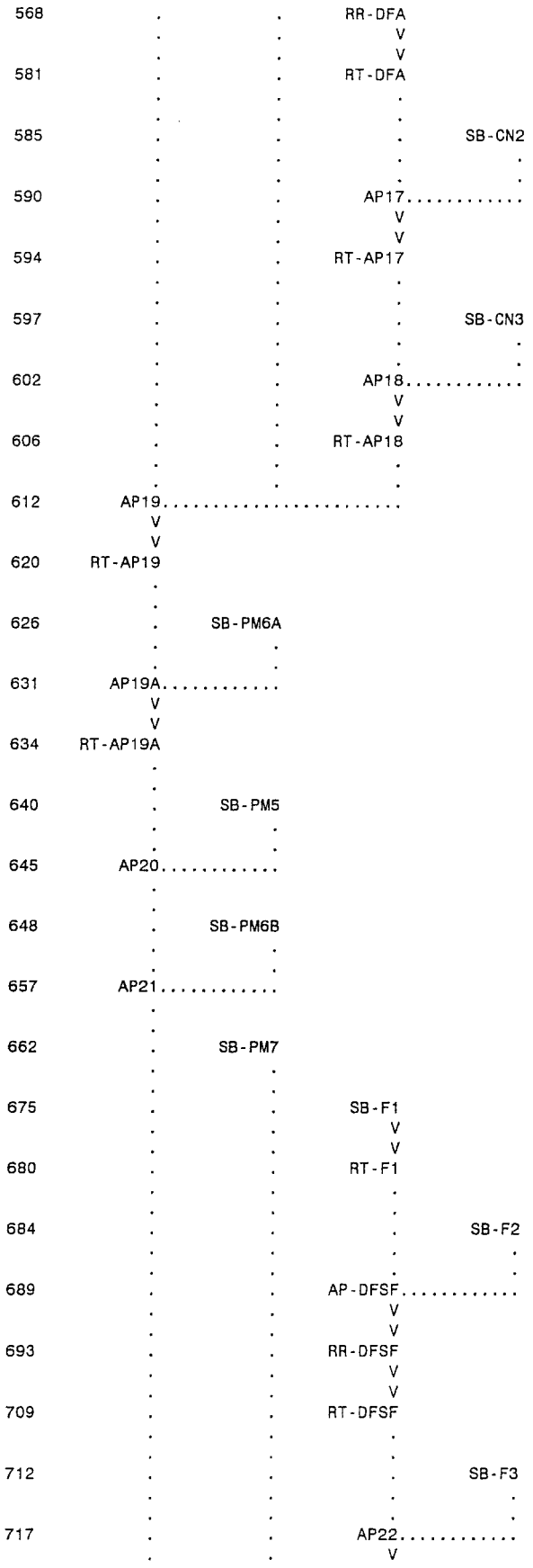
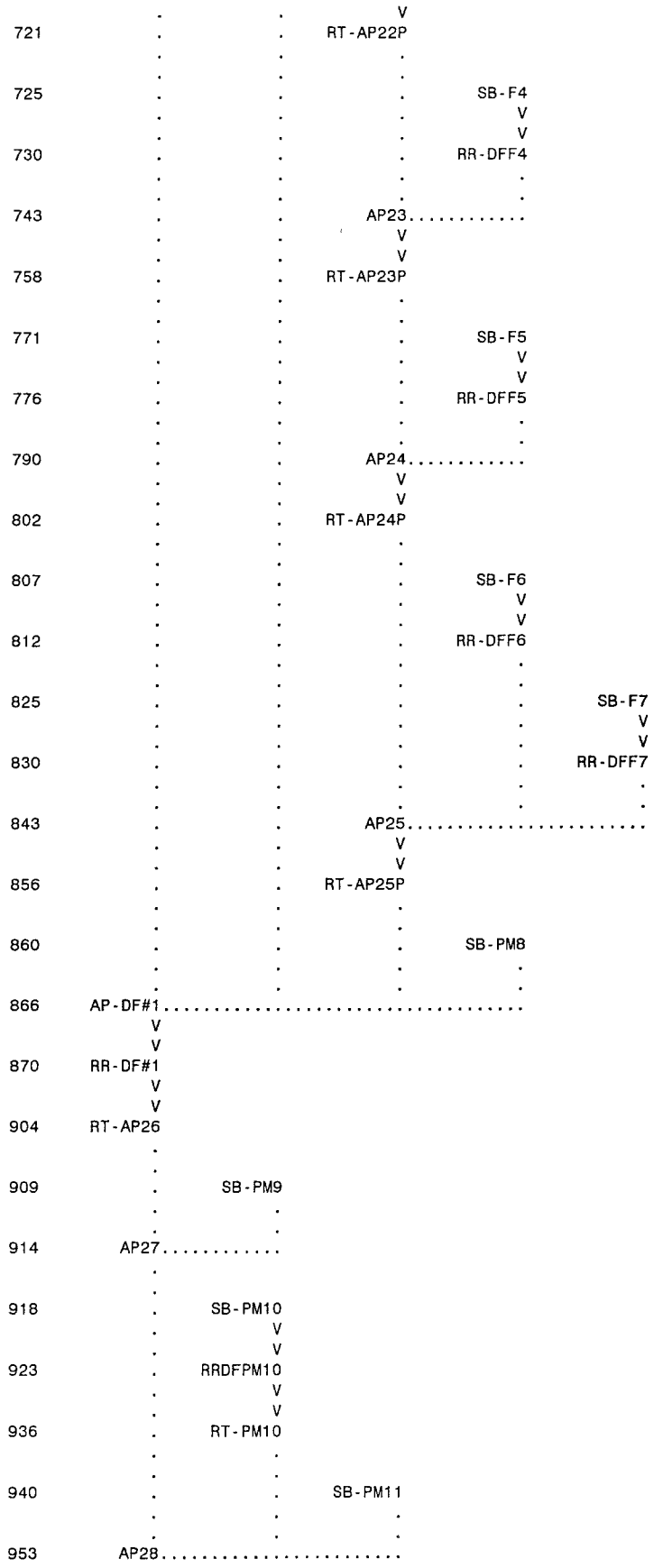

64 RT-IPN5
67 API3
70 RT-API3
73 SB-IPN6
78 API4
81 RT-API4
84 SB-IPN7
89 API5
92 RT-API5
95 AP3
102 SB-PN7
107 SB-PN8
112 APDFF
116 RR-DFF
128 RT-DFF
132 SB-PN9
137 AP4
140 RT-AP4
145 SB-PN11
150 SB-PN12
155 APDFE
159 RR-DFE
171 RT-DFE
174 SB-PN15
179 AP5


182 RT-AP5
189 SB-IPS1
194 RT-IPS1
197 SB-IPS2
202 API6
205 RT-API6
208 SB-IPS3
213 RT-IPS3
216 SB-IPS4
221 API7
224 RT-API7
228 SB-IPS5
233 API8
236 SB-IPS6
241 AP6
244 RT-AP6
247 SB-ISP7
252 AP6A
258 RT-AP6A
261 SB-PS2
266 AP6B
269 RT-AP6B
273 SB-PS3
278 SB-PS4
283 AP7
286 RT-AP7


289
SB-PS5
294
SB-PS6
299
AP7A
302
RT-AP7A
305
SB-PS7
310
SB-PS8
315
AP8
318
RT-AP8
321
SB-PS9
326
RT-PS9
329
AP9
333
SB-PS10
338
APDFC
342
RR-DFC
351
RT-DFC
355
SB-PS11
360
AP10
363
SB-PS12
368
APDFB
371
RR-DFB
387
RT-DFB
391
SB-PS13
396
AP11
399
RT-AP11
403
AP5A
407
RT-AP5A


413
SB-PN13
418
RR-DFIR
428
SB-PM1
433
RT-PM1
438
SB-PM2
443
SB-PM3
448
AP12
453
RT-AP12
458
SB-PM4
463
AP13
470
SB-CS1
475
RT-CS1
478
SB-CS2
483
RR-DFCS2
494
AP14
498
RT-AP14
504
SB-CS3
509
RR-DFCS3
521
AP15
527
RT-AP15
536
SB-CS4
541
RR-DFVC
551
AP16
554
RT-AP16
562
SB-CN1


568
RR-DFA
581
RT-DFA
585
SB-CN2
590
AP17
594
RT-AP17
597
SB-CN3
602
AP18
606
RT-AP18
612
AP19
620
RT-AP19
626
SB-PM6A
631
AP19A
634
RT-AP19A
640
SB-PM5
645
AP20
648
SB-PM6B
657
AP21
662
SB-PM7
675
SB-F1
680
RT-F1
684
SB-F2
689
AP-DFSF
693
RR-DFSF
709
RT-DFSF
712
SB-F3
717
AP22


721 RT-AP22P
725 SB-F4
730 RR-DFF4
743 AP23
758 RT-AP23P
771 SB-F5
776 RR-DFF5
790 AP24
802 RT-AP24P
807 SB-F6
812 RR-DFF6
825 SB-F7
830 RR-DFF7
843 AP25
856 RT-AP25P
860 SB-PM8
866 AP-DF#1
870 RR-DF#1
904 RT-AP26
909 SB-PM9
914 AP27
918 SB-PM10
923 RRDFPM10
936 RT-PM10
940 SB-PM11
953 AP28

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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
HEC1 S/N: 1343000062        HMVersion: 6.33    Data File: pcint5.dat

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*                                       *                                                  *
*
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                                  *    U.S. ARMY CORPS OF ENGINEERS
*
*              MAY    1991              *                                                  *    HYDROLOGIC ENGINEERING CENTER
*
*           VERSION 4.0.1E              *                                                  *          609 SECOND STREET
*
*                                       *                                                  *       DAVIS, CALIFORNIA 95616
*
*  RUN DATE  09/27/2002  TIME  16:46:41 *                                                  *           (916) 756-1104
*
*                                       *                                                  *
*
*****************************************
**************************************



                        PINE CREEK DRAINAGE BASIN - 24HR, INTERIM CONDITION (TYPE IIa,5 YEAR)
                        INTERIM CONDITION MODEL
                        ASSUMES POWERS BOULEVARD AND DOWNSTREAM AREA IN FULLY DEVELOPED CONDITION
                        AND LAND EAST OF POWERS IN THE EXISTING CONDITION
                        THIS IS A MODIFIED VERSION OF THE DBPS AMENDMENT 2 MODEL. THE MODEL HAS BEEN
                        REVISED IN AREAS THAT HAVE CHANGED SIGNIFICANTLY FROM THE AMENDMENT 2
                        ASSUMPTIONS. OTHER AREAS HAVE NOT BEEN CHANGED
                        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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          **************
          *            *
116 KK    *    RR-DFF  *
          *            *
          **************

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

               HYDROGRAPH ROUTING DATA

124 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

125 SV            STORAGE        0.0       0.2       2.6       8.1      15.4      23.7      32.6      42.4      53.1      64.8

126 SE            ELEVATION     13.00     14.00     16.00     18.00     20.00     22.00     24.00     26.00     28.00     30.00

127 SQ            DISCHARGE       5.       30.       93.      122.      146.      166.      184.      201.      216.      230.

                                                              ***

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

                         HYDROGRAPH AT STATION   RR-DFF

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR     14.95-HR
   (CFS)       (HR)
                             (CFS)
     90.       6.35                30.          16.          16.          16.
                           (INCHES)     0.345        0.451        0.451        0.451
                            (AC-FT)       15.          19.          19.          19.

PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                    6-HR        24-HR        72-HR     14.95-HR
   (AC-FT)     (HR)
      2.       6.35                 1.           0.           0.           0.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                    6-HR        24-HR        72-HR     14.95-HR
   (FEET)      (HR)
    15.90      6.35               13.90        13.39        13.39        13.39

                         CUMULATIVE AREA =    0.81 SQ MI


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


          **************
          *            *
159 KK    *    RR-DFE  *
          *            *
          **************

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

               HYDROGRAPH ROUTING DATA

167 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

168 SV          STORAGE          0.0       0.3       2.0       4.9       8.3      12.0      16.1      20.6      25.5      30.9

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

170 SQ          DISCHARGE        0.        26.       80.       133.      173.      208.      238.      260.      278.      1441.

                                                                  ***

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

                        HYDROGRAPH AT STATION   RR-DFE

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                  6-HR        24-HR        72-HR      14.95-HR
   (CFS)       (HR)
                          (CFS)
     111.      6.75                47.          24.          24.          24.
                         (INCHES)   0.400        0.495        0.495        0.495
                         (AC-FT)    23.          29.          29.          29.

PEAK STORAGE   TIME                          MAXIMUM AVERAGE STORAGE
                                  6-HR        24-HR        72-HR      14.95-HR
   (AC-FT)     (HR)
       4.      6.75                1.           1.           1.           1.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                  6-HR        24-HR        72-HR      14.95-HR
   (FEET)      (HR)
    789.16     6.75              786.61       785.40       785.40       785.40

                        CUMULATIVE AREA =     1.10 SQ MI


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

            **************
            *            *
342 KK      *    RR-DFC  *
            *            *
            **************

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

                HYDROGRAPH ROUTING DATA

347 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

348 SV          STORAGE          0.0       1.1       7.7       16.9      26.9      37.7      49.2      61.5      74.5      88.4

349 SE          ELEVATION       63.00     64.00     66.00     68.00     70.00     72.00     74.00     76.00     78.00     80.00

350 SQ          DISCHARGE        6.        23.       70.       110.      140.      168.      190.      215.      232.      245.

                                                                  ***

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

HYDROGRAPH AT STATION RR-DFC

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	14.95-HR
(CFS)	(HR)					
		(CFS)				
131.	6.60		87.	43.	43.	43.
		(INCHES)	0.700	0.853	0.853	0.853
		(AC-FT)	43.	53.	53.	53.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	14.95-HR
(AC-FT)	(HR)				
24.	6.60	13.	5.	5.	5.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	14.95-HR
(FEET)	(HR)				
69.43	6.60	66.97	64.82	64.82	64.82

CUMULATIVE AREA = 1.15 SQ MI

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          **************
          *            *
371 KK    *    RR-DFB  *
          *            *
          **************
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379 KO OUTPUT CONTROL VARIABLES

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

HYDROGRAPH ROUTING DATA

380 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

381 SV	STORAGE	0.0	0.1	0.7	2.5	5.1	8.1	11.4	15.2	19.5	23.2
		24.8	30.0								
383 SE	ELEVATION	70.60	72.00	74.00	76.00	78.00	80.00	82.00	84.00	86.00	87.60
		88.00	90.00								
385 SQ	DISCHARGE	0.	20.	86.	117.	142.	163.	181.	198.	213.	225.
		289.	1133.								

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

HYDROGRAPH AT STATION RR-DFB

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	14.95-HR
(CFS)	(HR)					
		(CFS)				
135.	7.20		98.	48.	48.	48.
		(INCHES)	0.672	0.813	0.813	0.813
		(AC-FT)	49.	59.	59.	59.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	14.95-HR
(AC-FT)	(HR)				
4.	7.20	2.	1.	1.	1.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	14.95-HR
(FEET)	(HR)				
77.43	7.20	75.24	72.98	72.98	72.98

CUMULATIVE AREA = 1.36 SQ MI

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              **************
              *            *
418 KK        *   RR-DFIR  *
              *            *
              **************

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

                HYDROGRAPH ROUTING DATA

424 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

425 SV              STORAGE          0.0        3.5       10.0

426 SE            ELEVATION       899.50     902.00     903.00

427 SQ            DISCHARGE           0.         1.         2.
                                                                      ***

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

                             HYDROGRAPH AT STATION   RR-DFIR

PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                           6-HR          24-HR        72-HR        14.95-HR

  (CFS)        (HR)
                              (CFS)
       0.      14.95                         0.             0.           0.              0.
                           (INCHES)       0.033          0.044        0.044           0.044
                            (AC-FT)          0.             0.           0.              0.

PEAK STORAGE   TIME                               MAXIMUM AVERAGE STORAGE
                                           6-HR          24-HR        72-HR        14.95-HR

 (AC-FT)       (HR)
       1.      14.90                         1.             0.           0.              0.

PEAK STAGE     TIME                                MAXIMUM AVERAGE STAGE
                                           6-HR          24-HR        72-HR        14.95-HR

  (FEET)       (HR)
   899.94      14.95                     899.90         899.71       899.71          899.71

                            CUMULATIVE AREA =       0.05 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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              **************
              *            *
568 KK        *   RR-DFA   *
              *            *
              **************

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

                HYDROGRAPH ROUTING DATA

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

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

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

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

                                                                ***

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

                        HYDROGRAPH AT STATION   RR-DFA

 PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
                                    6-HR        24-HR        72-HR      14.95-HR
   (CFS)       (HR)
                          (CFS)
      5.       7.70                 5.           4.           4.           4.
                         (INCHES)   0.397        0.777        0.777        0.777
                          (AC-FT)     2.           5.           5.           5.

PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                    6-HR        24-HR        72-HR      14.95-HR
   (AC-FT)     (HR)
      3.       7.90                 3.           1.           1.           1.

 PEAK STAGE    TIME                          MAXIMUM AVERAGE STAGE
                                    6-HR        24-HR        72-HR      14.95-HR
   (FEET)      (HR)
   6803.50     7.25              6803.20      6800.32      6800.32      6800.32

                        CUMULATIVE AREA =    0.11 SQ MI


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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            **************
            *            *
 657 KK     *      AP21  *
            *            *
            **************

 660 KO           OUTPUT CONTROL VARIABLES
                        IPRNT          5  PRINT CONTROL
                        IPLOT          1  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE


*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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            **************
            *            *
 693 KK     *   RR-DFSF  *
            *            *
            **************

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

               HYDROGRAPH ROUTING DATA

 705 RS           STORAGE ROUTING
                        NSTPS          1  NUMBER OF SUBREACHES
                         ITYP       STOR  TYPE OF INITIAL CONDITION
```

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                    RSVRIC        0.00  INITIAL CONDITION
                         X        0.00 WORKING R AND D COEFFICIENT

706 SV            STORAGE         0.0       0.6       4.6       6.9      10.3

707 SE          ELEVATION       92.00     94.00     96.00     98.00    100.00

708 SQ          DISCHARGE         80.      126.      131.      137.      144.
                                                                ***

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

                       HYDROGRAPH AT STATION  RR-DFSF

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

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

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

                       CUMULATIVE AREA =    0.16 SQ MI
*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
              **************
              *            *
870 KK        *   RR-DF#1  *
              *            *
              **************

881 KO             OUTPUT CONTROL VARIABLES
                        IPRNT          3  PRINT CONTROL
                        IPLOT          1  PLOT CONTROL
                        QSCAL          0.  HYDROGRAPH PLOT SCALE
                            SQ    0, 105 ,  194,  275,  344,  401,  451,  496,  560,  747,  998, 1142, 12
                            SQ 1750, 2100
                            KK AP25S
                            RETRIEVE THE DIVERTED FLOW AT THE INTERSECTION OF BRIARGATE PARKWAY AND
                            EXPLORER DRIVE. THIS IS FLOW IN THE STREET.
                            DR AP25S
                            KK RT-AP25S
                            ROUTE THE SURFACE FLOW IN BRIARGATE PARKWAY DOWN BRIARGATE PARKWAY TO PINE
                            CREEK. ASSUME THIS FLOW ENTERS THE CHANNEL AT THE OUTLET FROM DETENTION
                            FACILITY #1.
                            RD 1400,.043,.015,,TRAP,75,.01
                            KK AP26
                            COMBINE ROUTED FLOW RT-AP25S TO THE OUTFLOW FROM DF#1 AT THE INTERSECTION OF
                            BRIARGATE PKWY. AND PINE CREEK. Note:NO FLOW FROM rt-AP25S IN 5 YEAR
                            HC 2

                   HYDROGRAPH ROUTING DATA

882 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

883 SA                   AREA        0.0       0.0       0.0       3.8       4.6       4.9       5.3       5.6       5.8       6.2
                                     6.6       6.8       7.0       7.2       7.5

885 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

887 SQ                 DISCHARGE     0.       99.      184.      261.      326.      380.      427.      470.      532.      718.
                                   969.     1112.     1264.     1750.     2100.
```

COMPUTED STORAGE-ELEVATION DATA

STORAGE	0.00	0.00	0.02	2.73	11.10	20.65	30.85	41.65	53.04	65.06
ELEVATION	54.00	55.00	56.00	58.00	60.00	62.00	64.00	66.00	68.00	70.00
STORAGE	77.78	84.44	91.31	98.41	105.77					
ELEVATION	72.00	73.00	74.00	75.00	76.00					

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 0. TO 184.
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			
			6-HR	24-HR	72-HR	14.95-HR
(CFS)	(HR)					
		(CFS)				
446.	7.15		373.	220.	220.	220.
		(INCHES)	0.786	1.158	1.158	1.158
		(AC-FT)	185.	272.	272.	272.

PEAK STORAGE	TIME	MAXIMUM AVERAGE STORAGE			
		6-HR	24-HR	72-HR	14.95-HR
(AC-FT)	(HR)				
36.	7.15	21.	9.	9.	9.

PEAK STAGE	TIME	MAXIMUM AVERAGE STAGE			
		6-HR	24-HR	72-HR	14.95-HR
(FEET)	(HR)				
64.90	7.15	61.97	57.95	57.95	57.95

CUMULATIVE AREA = 4.41 SQ MI

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         **************
         *            *
953 KK   *     AP28   *
         *            *
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960 KO OUTPUT CONTROL VARIABLES

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

961 HC HYDROGRAPH COMBINATION

ICOMP	3	NUMBER OF HYDROGRAPHS TO COMBINE

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

HYDROGRAPH AT STATION AP28

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	14.95-HR
(CFS)	(HR)					
		(CFS)				
563.	6.05		399.	232.	232.	232.
		(INCHES)	0.812	1.177	1.177	1.177
		(AC-FT)	198.	287.	287.	287.

CUMULATIVE AREA = 4.57 SQ MI

5 YEAR, 24 HOUR, INTERIM
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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT	SB-IPN1	21.	6.30	4.	2.	2.	0.16		
ROUTED TO	RT-IPN1	23.	6.55	4.	2.	2.	0.16		
HYDROGRAPH AT	SB-IPN2	23.	6.35	5.	2.	2.	0.23		
2 COMBINED AT	API1	42.	6.50	9.	4.	4.	0.38		
ROUTED TO	RT-API1	41.	6.65	9.	4.	4.	0.38		
HYDROGRAPH AT	SB-IPN3	22.	6.20	3.	1.	1.	0.10		
2 COMBINED AT	API2	47.	6.60	12.	6.	6.	0.49		
HYDROGRAPH AT	SB-IPN4	12.	6.25	2.	1.	1.	0.10		
HYDROGRAPH AT	SB-IPN5	6.	6.20	1.	0.	0.	0.05		
ROUTED TO	RT-IPN5	6.	6.20	1.	0.	0.	0.05		
2 COMBINED AT	API3	18.	6.25	3.	2.	2.	0.15		
ROUTED TO	RT-API3	18.	6.25	3.	2.	2.	0.15		
HYDROGRAPH AT	SB-IPN6	32.	6.05	3.	1.	1.	0.03		
2 COMBINED AT	API4	41.	6.10	6.	3.	3.	0.18		
ROUTED TO	RT-API4	40.	6.15	6.	3.	3.	0.18		
HYDROGRAPH AT	SB-IPN7	13.	6.15	2.	1.	1.	0.03		
2 COMBINED AT	API5	53.	6.15	8.	4.	4.	0.21		
ROUTED TO	RT-API5	53.	6.15	8.	4.	4.	0.21		
2 COMBINED AT	AP3	76.	6.25	20.	10.	10.	0.70		
HYDROGRAPH AT	SB-PN7	40.	6.10	4.	2.	2.	0.07		
HYDROGRAPH AT	SB-PN8	54.	6.00	5.	2.	2.	0.04		
3 COMBINED AT	APDFF	155.	6.10	30.	14.	14.	0.81		
ROUTED TO									

	RR-DFF	90.	6.35	30.	16.	16.	0.81	15.90	6.35
ROUTED TO	RT-DFF	90.	6.50	30.	16.	16.	0.81		
HYDROGRAPH AT	SB-PN9	44.	6.15	5.	2.	2.	0.11		
2 COMBINED AT	AP4	105.	6.35	35.	18.	18.	0.92		
ROUTED TO	RT-AP4	105.	6.40	35.	18.	18.	0.92		
HYDROGRAPH AT	SB-PN11	67.	6.10	7.	3.	3.	0.08		
HYDROGRAPH AT	SB-PN12	42.	6.15	5.	2.	2.	0.10		
3 COMBINED AT	APDFE	180.	6.15	47.	24.	24.	1.10		
ROUTED TO	RR-DFE	111.	6.75	47.	24.	24.	1.10	789.16	6.75
ROUTED TO	RT-DFE	111.	6.75	47.	24.	24.	1.10		
HYDROGRAPH AT	SB-PN15	37.	6.10	4.	2.	2.	0.07		
2 COMBINED AT	AP5	116.	6.65	51.	25.	25.	1.17		
ROUTED TO	RT-AP5	116.	6.65	51.	25.	25.	1.17		
HYDROGRAPH AT	SB-IPS1	13.	6.30	3.	1.	1.	0.13		
ROUTED TO	RT-IPS1	13.	6.50	3.	1.	1.	0.13		
HYDROGRAPH AT	SB-IPS2	11.	6.25	2.	1.	1.	0.08		
2 COMBINED AT	API6	21.	6.45	5.	2.	2.	0.21		
ROUTED TO	RT-API6	21.	6.45	5.	2.	2.	0.21		
HYDROGRAPH AT	SB-IPS3	15.	6.20	2.	1.	1.	0.11		
ROUTED TO	RT-IPS3	16.	6.40	2.	1.	1.	0.11		
HYDROGRAPH AT	SB-IPS4	20.	6.25	4.	2.	2.	0.17		
2 COMBINED AT	API7	32.	6.40	6.	3.	3.	0.28		
ROUTED TO	RT-API7	32.	6.45	6.	3.	3.	0.28		
HYDROGRAPH AT	SB-IPS5	5.	6.25	1.	0.	0.	0.04		
2 COMBINED AT	API8	36.	6.45	7.	3.	3.	0.32		
HYDROGRAPH AT									

	SB-IPS6	15.	6.30	3.	1.	1.	0.12
3 COMBINED AT	AP6	70.	6.45	15.	7.	7.	0.64
ROUTED TO	RT-AP6	68.	6.45	15.	7.	7.	0.64
HYDROGRAPH AT	SB-ISP7	31.	6.10	4.	2.	2.	0.03
2 COMBINED AT	AP6A	77.	6.45	18.	9.	9.	0.67
ROUTED TO	RT-AP6A	76.	6.45	18.	9.	9.	0.67
HYDROGRAPH AT	SB-PS2	35.	6.05	4.	2.	2.	0.02
2 COMBINED AT	AP6B	89.	6.15	22.	10.	10.	0.69
ROUTED TO	RT-AP6B	89.	6.15	22.	10.	10.	0.69
HYDROGRAPH AT	SB-PS3	146.	6.00	16.	7.	7.	0.07
HYDROGRAPH AT	SB-PS4	48.	6.10	5.	2.	2.	0.06
3 COMBINED AT	AP7	261.	6.05	43.	19.	19.	0.82
ROUTED TO	RT-AP7	259.	6.05	43.	19.	19.	0.82
HYDROGRAPH AT	SB-PS5	60.	6.00	6.	3.	3.	0.03
HYDROGRAPH AT	SB-PS6	110.	6.00	12.	5.	5.	0.05
3 COMBINED AT	AP7A	422.	6.05	61.	27.	27.	0.90
ROUTED TO	RT-AP7A	422.	6.05	61.	27.	27.	0.90
HYDROGRAPH AT	SB-PS7	65.	6.00	7.	3.	3.	0.03
HYDROGRAPH AT	SB-PS8	118.	6.05	12.	5.	5.	0.11
3 COMBINED AT	AP8	601.	6.05	80.	36.	36.	1.05
ROUTED TO	RT-AP8	600.	6.05	80.	36.	36.	1.05
HYDROGRAPH AT	SB-PS9	87.	6.00	9.	4.	4.	0.05
ROUTED TO	RT-PS9	86.	6.05	9.	4.	4.	0.05
2 COMBINED AT	AP9	686.	6.05	89.	40.	40.	1.10
HYDROGRAPH AT	SB-PS10	30.	6.10	3.	1.	1.	0.05
2 COMBINED AT	APDFC	715.	6.05	92.	41.	41.	1.15

ROUTED TO	RR-DFC	131.	6.60	87.	43.	43.	1.15	69.43	6.60
ROUTED TO	RT-DFC	131.	6.65	87.	43.	43.	1.15		
HYDROGRAPH AT	SB-PS11	49.	6.05	5.	2.	2.	0.05		
2 COMBINED AT	AP10	158.	6.15	92.	45.	45.	1.21		
HYDROGRAPH AT	SB-PS12	52.	6.15	7.	3.	3.	0.15		
2 COMBINED AT	APDFB	209.	6.15	99.	48.	48.	1.36		
ROUTED TO	RR-DFB	135.	7.20	98.	48.	48.	1.36	77.43	7.20
ROUTED TO	RT-DFB	135.	7.20	98.	48.	48.	1.36		
HYDROGRAPH AT	SB-PS13	43.	6.05	4.	2.	2.	0.06		
2 COMBINED AT	AP11	141.	6.10	103.	50.	50.	1.43		
ROUTED TO	RT-AP11	141.	6.15	103.	50.	50.	1.43		
2 COMBINED AT	AP5A	252.	6.70	154.	75.	75.	2.60		
ROUTED TO	RT-AP5A	252.	6.75	154.	75.	75.	2.60		
HYDROGRAPH AT	SB-PN13	8.	6.20	1.	1.	1.	0.05		
ROUTED TO	RR-DFIR	0.	14.95	0.	0.	0.	0.05	899.94	14.95
HYDROGRAPH AT	SB-PM1	41.	6.10	5.	2.	2.	0.05		
ROUTED TO	RT-PM1	40.	6.15	5.	2.	2.	0.05		
HYDROGRAPH AT	SB-PM2	49.	6.25	8.	4.	4.	0.19		
HYDROGRAPH AT	SB-PM3	23.	6.15	3.	1.	1.	0.06		
5 COMBINED AT	AP12	346.	6.20	169.	82.	82.	2.94		
ROUTED TO	RT-AP12	347.	6.30	169.	81.	81.	2.94		
HYDROGRAPH AT	SB-PM4	57.	6.10	6.	3.	3.	0.11		
2 COMBINED AT	AP13	373.	6.25	174.	84.	84.	3.05		
HYDROGRAPH AT	SB-CS1	31.	6.10	3.	1.	1.	0.05		
ROUTED TO	RT-CS1	30.	6.15	3.	1.	1.	0.05		

					7.	7.	0.07				
HYDROGRAPH AT	SB-CS2	149.	6.00	16.							
					7.	7.	0.07	101.53	6.00		
ROUTED TO	RR-DFCS2	149.	6.00	16.							
					9.	9.	0.12				
2 COMBINED AT	AP14	167.	6.00	20.							
					9.	9.	0.12				
ROUTED TO	RT-AP14	166.	6.00	20.							
					3.	3.	0.05				
HYDROGRAPH AT	SB-CS3	61.	6.05	6.							
					3.	3.	0.05	100.99	6.05		
ROUTED TO	RR-DFCS3	61.	6.05	6.							
					11.	11.	0.17				
2 COMBINED AT	AP15	224.	6.05	26.							
					11.	11.	0.17				
ROUTED TO	RT-AP15	223.	6.05	26.							
					4.	4.	0.07				
HYDROGRAPH AT	SB-CS4	88.	6.05	9.							
					4.	4.	0.07	75.96	6.30		
ROUTED TO	RR-DFVC	21.	6.30	9.							
					15.	15.	0.24				
2 COMBINED AT	AP16	242.	6.05	35.							
					15.	15.	0.24				
ROUTED TO	RT-AP16	242.	6.05	35.							
					4.	4.	0.11				
HYDROGRAPH AT	SB-CN1	86.	6.10	9.							
					4.	4.	0.11	6803.50	7.25		
ROUTED TO	RR-DFA	5.	7.70	5.							
					4.	4.	0.11				
ROUTED TO	RT-DFA	5.	8.05	5.							
					2.	2.	0.08				
HYDROGRAPH AT	SB-CN2	47.	6.10	5.							
					6.	6.	0.19				
2 COMBINED AT	AP17	51.	6.10	10.							
					6.	6.	0.19				
ROUTED TO	RT-AP17	50.	6.15	10.							
					2.	2.	0.04				
HYDROGRAPH AT	SB-CN3	40.	6.05	4.							
					8.	8.	0.23				
2 COMBINED AT	AP18	88.	6.10	14.							
					8.	8.	0.23				
ROUTED TO	RT-AP18	87.	6.10	14.							
					107.	107.	3.52				
3 COMBINED AT	AP19	599.	6.15	220.							
					107.	107.	3.52				
ROUTED TO	RT-AP19	589.	6.20	220.							
					3.	3.	0.04				
HYDROGRAPH AT	SB-PM6A	67.	6.00	7.							

2 COMBINED AT	AP19A	630.	6.15	227.	110.	110.	3.56		
ROUTED TO	RT-AP19A	633.	6.20	227.	109.	109.	3.56		
HYDROGRAPH AT	SB-PM5	86.	6.10	9.	4.	4.	0.19		
2 COMBINED AT	AP20	700.	6.20	236.	114.	114.	3.76		
HYDROGRAPH AT	SB-PM6B	76.	6.00	8.	4.	4.	0.04		
2 COMBINED AT	AP21	723.	6.20	243.	117.	117.	3.79		
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-F1	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	99.	6.00	10.	4.	4.	0.06		
ROUTED TO	RR-DFF5	99.	6.00	10.	4.	4.	0.06	101.25	6.00
2 COMBINED AT	AP24	274.	6.05	103.	90.	90.	0.37		
ROUTED TO	RT-AP24P	270.	6.05	103.	90.	90.	0.37		
HYDROGRAPH AT	SB-F6	72.	6.00	7.	3.	3.	0.04		

ROUTED TO	RR-DFF6	72.	6.00	7.	3.	3.	0.04	101.40	6.00
HYDROGRAPH AT	SB-F7	83.	6.05	9.	4.	4.	0.05		
ROUTED TO	RR-DFF7	84.	6.05	9.	4.	4.	0.05	101.29	6.05
3 COMBINED AT	AP25	421.	6.05	119.	97.	97.	0.46		
ROUTED TO	RT-AP25P	417.	6.05	119.	97.	97.	0.46		
HYDROGRAPH AT	SB-PM8	30.	6.00	3.	1.	1.	0.01		
4 COMBINED AT	AP-DF#1	1140.	6.15	375.	220.	220.	4.41		
ROUTED TO	RR-DF#1	446.	7.15	373.	220.	220.	4.41	64.90	7.15
ROUTED TO	RT-AP26	446.	7.20	373.	219.	219.	4.41		
HYDROGRAPH AT	SB-PM9	78.	6.05	8.	3.	3.	0.07		
2 COMBINED AT	AP27	451.	7.10	380.	223.	223.	4.48		
HYDROGRAPH AT	SB-PM10	101.	6.00	11.	5.	5.	0.05		
ROUTED TO	RRDFPM10	97.	6.05	11.	5.	5.	0.05	101.39	6.05
ROUTED TO	RT-PM10	97.	6.05	11.	5.	5.	0.05		
HYDROGRAPH AT	SB-PM11	88.	6.00	10.	4.	4.	0.04		
3 COMBINED AT	AP28	563.	6.05	399.	232.	232.	4.57		

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-IPN1	MANE	1.65	26.52	389.40	0.29	3.00	23.03	393.00	0.29

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2453E+01 EXCESS=0.0000E+00 OUTFLOW=0.2393E+01 BASIN STORAGE=0.1025E+00 PERCENT ERROR= -1.7

RT-API1	MANE	2.25	42.13	398.25	0.26	3.00	40.57	399.00	0.26

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5394E+01 EXCESS=0.0000E+00 OUTFLOW=0.5337E+01 BASIN STORAGE=0.7549E-01 PERCENT ERROR= -0.3

RT-IPN5	MANE	0.56	6.35	372.32	0.25	3.00	6.32	372.00	0.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6086E+00 EXCESS=0.0000E+00 OUTFLOW=0.6081E+00 BASIN STORAGE=0.5019E-03 PERCENT ERROR= 0.0

RT-API3	MANE	0.55	17.81	375.59	0.25	3.00	17.76	375.00	0.25

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1939E+01 EXCESS=0.0000E+00 OUTFLOW=0.1938E+01 BASIN STORAGE=0.1521E-02 PERCENT ERROR= 0.0

RT-API4	MANE	1.65	40.34	367.95	0.38	3.00	39.85	369.00	0.38

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3658E+01 EXCESS=0.0000E+00 OUTFLOW=0.3647E+01 BASIN STORAGE=0.1034E-01 PERCENT ERROR= 0.0

RT-API5	MANE	0.29	52.55	369.08	0.41	3.00	52.53	369.00	0.41

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4563E+01 EXCESS=0.0000E+00 OUTFLOW=0.4561E+01 BASIN STORAGE=0.1622E-02 PERCENT ERROR= 0.0

RT-DFF	MANE	2.10	89.95	390.60	0.45	3.00	89.90	390.00	0.45

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1941E+02 EXCESS=0.0000E+00 OUTFLOW=0.1935E+02 BASIN STORAGE=0.6430E-01 PERCENT ERROR= 0.0

RT-AP4	MANE	2.10	105.07	384.30	0.46	3.00	104.95	384.00	0.46

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2238E+02 EXCESS=0.0000E+00 OUTFLOW=0.2234E+02 BASIN STORAGE=0.4803E-01 PERCENT ERROR= 0.0

RT-DFE	MANE	1.18	110.60	405.92	0.49	3.00	110.60	405.00	0.49

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2906E+02 EXCESS=0.0000E+00 OUTFLOW=0.2903E+02 BASIN STORAGE=0.3147E-01 PERCENT ERROR= 0.0

RT-AP5	MANE	0.11	115.70	399.22	0.50	3.00	115.69	399.00	0.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3126E+02 EXCESS=0.0000E+00 OUTFLOW=0.3126E+02 BASIN STORAGE=0.3244E-02 PERCENT ERROR= 0.0

RT-IPS1	MANE	1.65	13.65	391.05	0.24	3.00	13.50	390.00	0.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1656E+01 EXCESS=0.0000E+00 OUTFLOW=0.1623E+01 BASIN STORAGE=0.4529E-01 PERCENT ERROR= -0.7

RT-API6	MANE	0.25	20.70	387.41	0.26	3.00	20.61	387.00	0.26

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2799E+01 EXCESS=0.0000E+00 OUTFLOW=0.2798E+01 BASIN STORAGE=0.9657E-03 PERCENT ERROR= 0.0

RT-IPS3	MANE	1.35	17.01	387.45	0.24	3.00	16.04	384.00	0.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1442E+01 EXCESS=0.0000E+00 OUTFLOW=0.1408E+01 BASIN STORAGE=0.4835E-01 PERCENT ERROR= -1.0

RT-API7	MANE	1.80	32.19	387.00	0.24	3.00	32.19	387.00	0.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3625E+01 EXCESS=0.0000E+00 OUTFLOW=0.3614E+01 BASIN STORAGE=0.1336E-01 PERCENT ERROR= -0.1

RT-AP6	MANE	0.55	69.06	387.36	0.26	3.00	68.30	387.00	0.26

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8745E+01 EXCESS=0.0000E+00 OUTFLOW=0.8739E+01 BASIN STORAGE=0.6635E-02 PERCENT ERROR= 0.0

RT-AP6A	MANE	0.54	76.94	387.38	0.30	3.00	76.41	387.00	0.30

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1067E+02 EXCESS=0.0000E+00 OUTFLOW=0.1066E+02 BASIN STORAGE=0.7209E-02 PERCENT ERROR= 0.0

RT-AP6B	MANE	0.67	89.37	369.63	0.34	3.00	88.83	369.00	0.34

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1257E+02 EXCESS=0.0000E+00 OUTFLOW=0.1256E+02 BASIN STORAGE=0.9912E-02 PERCENT ERROR= 0.0

RT-AP7	MANE	0.66	259.71	363.40	0.55	3.00	259.05	363.00	0.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2399E+02 EXCESS=0.0000E+00 OUTFLOW=0.2397E+02 BASIN STORAGE=0.3717E-01 PERCENT ERROR= -0.1

RT-AP7A	MANE	0.45	421.77	363.06	0.70	3.00	421.71	363.00	0.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3395E+02 EXCESS=0.0000E+00 OUTFLOW=0.3394E+02 BASIN STORAGE=0.3458E-01 PERCENT ERROR= -0.1

RT-AP8	MANE	0.14	600.33	363.07	0.80	3.00	600.22	363.00	0.80

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4450E+02 EXCESS=0.0000E+00 OUTFLOW=0.4449E+02 BASIN STORAGE=0.1439E-01 PERCENT ERROR= 0.0

RT-PS9	MANE	0.74	86.55	361.42	1.61	3.00	85.79	363.00	1.62

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4653E+01 EXCESS=0.0000E+00 OUTFLOW=0.4651E+01 BASIN STORAGE=0.2819E-02 PERCENT ERROR= 0.0

RT-DFC	MANE	1.61	131.50	399.21	0.85	3.00	131.49	399.00	0.85

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5256E+02 EXCESS=0.0000E+00 OUTFLOW=0.5253E+02 BASIN STORAGE=0.3220E-01 PERCENT ERROR= 0.0

RT-DFB	MANE	0.80	134.85	432.95	0.81	3.00	134.84	432.00	0.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5902E+02 EXCESS=0.0000E+00 OUTFLOW=0.5898E+02 BASIN STORAGE=0.3311E-01 PERCENT ERROR= 0.0

RT-AP11	MANE	0.48	141.37	366.93	0.81	3.00	140.88	369.00	0.81

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6133E+02 EXCESS=0.0000E+00 OUTFLOW=0.6131E+02 BASIN STORAGE=0.2059E-01 PERCENT ERROR= 0.0

RT-AP5A	MANE	3.00	252.08	405.00	0.67	3.00	252.08	405.00	0.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9264E+02 EXCESS=0.0000E+00 OUTFLOW=0.9222E+02 BASIN STORAGE=0.5896E+00 PERCENT ERROR= -0.2

RT-PM1	MANE	1.65	40.70	367.95	0.87	3.00	40.30	369.00	0.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2514E+01 EXCESS=0.0000E+00 OUTFLOW=0.2510E+01 BASIN STORAGE=0.1094E-01 PERCENT ERROR= -0.3

RT-AP12	MANE	3.00	346.87	378.00	0.64	3.00	346.87	378.00	0.64

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1009E+03 EXCESS=0.0000E+00 OUTFLOW=0.1005E+03 BASIN STORAGE=0.6164E+00 PERCENT ERROR= -0.2

RT-CS1	MANE	1.50	30.63	367.50	0.65	3.00	30.41	369.00	0.65

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1844E+01 EXCESS=0.0000E+00 OUTFLOW=0.1838E+01 BASIN STORAGE=0.1506E-01 PERCENT ERROR= -0.5

RT-AP14	MANE	0.61	166.72	360.40	1.63	3.00	165.90	360.00	1.63

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1067E+02 EXCESS=0.0000E+00 OUTFLOW=0.1066E+02 BASIN STORAGE=0.1314E-01 PERCENT ERROR= -0.1

RT-AP15	MANE	0.57	223.43	362.50	1.53	3.00	223.32	363.00	1.53

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1417E+02 EXCESS=0.0000E+00 OUTFLOW=0.1416E+02 BASIN STORAGE=0.1694E-01 PERCENT ERROR= -0.1

RT-AP16	MANE	0.13	241.53	363.05	1.47	3.00	241.50	363.00	1.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1882E+02 EXCESS=0.0000E+00 OUTFLOW=0.1882E+02 BASIN STORAGE=0.4982E-02 PERCENT ERROR= 0.0

RT-DFA	MANE	1.22	4.83	484.05	0.78	3.00	4.83	483.00	0.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4559E+01 EXCESS=0.0000E+00 OUTFLOW=0.4556E+01 BASIN STORAGE=0.3081E-02 PERCENT ERROR= 0.0

RT-AP17	MANE	1.00	50.95	367.58	0.75	3.00	50.37	369.00	0.76

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7578E+01 EXCESS=0.0000E+00 OUTFLOW=0.7573E+01 BASIN STORAGE=0.5807E-02 PERCENT ERROR= 0.0

RT-AP18	MANE	0.42	87.59	366.38	0.79	3.00	87.27	366.00	0.79

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9759E+01 EXCESS=0.0000E+00 OUTFLOW=0.9756E+01 BASIN STORAGE=0.3303E-02 PERCENT ERROR= 0.0

RT-AP19	MANE	2.07	597.93	370.81	0.70	3.00	589.15	372.00	0.70

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1324E+03 EXCESS=0.0000E+00 OUTFLOW=0.1322E+03 BASIN STORAGE=0.3783E+00 PERCENT ERROR= -0.1

RT-AP19A	MANE	3.00	632.71	372.00	0.71	3.00	632.71	372.00	0.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1358E+03 EXCESS=0.0000E+00 OUTFLOW=0.1354E+03 BASIN STORAGE=0.6358E+00 PERCENT ERROR= -0.2

RT-F1	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	0.68	273.02	363.87	5.58	3.00	270.26	363.00	5.58

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1114E+03 EXCESS=0.0000E+00 OUTFLOW=0.1114E+03 BASIN STORAGE=0.3731E-02 PERCENT ERROR= 0.0

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          RT-AP25P  MANE         0.99    418.39    363.69      4.84      3.00    416.58    363.00        4.84

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1199E+03 EXCESS=0.0000E+00 OUTFLOW=0.1199E+03 BASIN STORAGE=0.8877E-02 PERCENT ERROR=   0.0

          RT-AP26  MANE         3.00    446.35    432.00      1.15      3.00    446.35    432.00        1.15

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2726E+03 EXCESS=0.0000E+00 OUTFLOW=0.2713E+03 BASIN STORAGE=0.1445E+01 PERCENT ERROR=  -0.1

          RT-PM10  MANE         0.82     97.08    363.46      2.36      3.00     96.97    363.00        2.36

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6046E+01 EXCESS=0.0000E+00 OUTFLOW=0.6043E+01 BASIN STORAGE=0.3163E-02 PERCENT ERROR=   0.0


*** NORMAL END OF HEC-1 ***
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C-4

HEC-1 MODEL OUTPUT

100-YEAR STORM, INTERIM CONDITION

HEC1 S/N: 1343000062 HMVersion: 6.33 Data File: PCINT100.DAT

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*                                       *                                       *
*                                       *                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                       *    U.S. ARMY CORPS OF ENGINEERS
*                                       *                                       *
*              MAY   1991               *                                       *    HYDROLOGIC ENGINEERING CENTER
*                                       *                                       *
*           VERSION 4.0.1E              *                                       *         609 SECOND STREET
*                                       *                                       *
*                                       *                                       *       DAVIS, CALIFORNIA 95616
*                                       *                                       *
*  RUN DATE  09/27/2002  TIME  15:36:20 *                                       *           (916) 756-1104
*                                       *                                       *
*                                       *                                       *
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X     X  XXXXXXX   XXXXX          X
X     X  X        X     X        XX
X     X  X        X               X
XXXXXXX  XXXX     X        XXXXX  X
X     X  X        X               X
X     X  X        X     X         X
X     X  XXXXXXX   XXXXX          XXX
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::::::::::::::::::::::::::::::::::::::::::::::
:::                                        :::
:::  Full Microcomputer Implementation     :::
:::                  by                    :::
:::        Haestad Methods, Inc.           :::
:::                                        :::
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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

HEC-1 INPUT PAGE 1

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LINE          ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10
   1          ID   PINE CREEK DRAINAGE BASIN - 24HR, INTERIM CONDITION (TYPE IIa100 YEAR)
   2          ID   INTERIM CONDITION MODEL
   3          ID   ASSUMES POWERS BOULEVARD AND DOWNSTREAM AREA IN FULLY DEVELOPED CONDITION
   4          ID   AND LAND EAST OF POWERS IN THE EXISTING CONDITION
   5          ID   THIS IS A MODIFIED VERSION OF THE DBPS AMENDMENT 2 MODEL. THE MODEL HAS BEEN
   6          ID   REVISED IN AREAS THAT HAVE CHANGED SIGNIFICANTLY FROM THE AMENDMENT 2
   7          ID   ASSUMPTIONS. OTHER AREAS HAVE NOT BEEN CHANGED
   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
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          12          ID   **********************************************************************************
*** FREE ***
                      *DIAGRAM
          13          IT       3       0       0     300
          14          IO       5

          15          KK SB-IPN1
          16          KM   COMPUTE HYDROGRAPH FOR BASIN IPN1
          17          BA    .156
          18          IN      15
          19          PB     4.4
          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    63.8
          31          UD    .360

          32          KK RT-IPN1
          33          KM   ROUTE THE FLOW FROM BASIN IPN1 THROUGH BASIN IPN2 TO API1
          34          RD    2500    .033    .045            TRAP     100      15

          35          KK SB-IPN2
          36          KM   COMPUTE HYDROGRAPH FOR BASIN IPN2
          37          BA    .229
          38          LS       0    62.0
          39          UD    .377

          40          KK    API1
          41          KM   COMBINE ROUTED FLOW FROM BASIN IPN1 WITH FLOW FROM BASIN IPN2
          42          HC       2

          43          KK RT-API1
          44          KM   ROUTE THE FLOW IN THE NORTH FORK OF PINE CREEK FROM API1 TO API2
          45          RD    2100    .034    .045            TRAP      12     2.5
                                              HEC-1 INPUT                                          PAGE   2

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

          46          KK SB-IPN3
          47          KM   COMPUTE HYDROGRAPH FOR BASIN IPN3
          48          BA    .104
          49          LS       0    65.0
          50          UD    .249

          51          KK    API2
          52          KM   COMBINE THE ROUTED FLOW FROM API1 WITH THE FLOW FROM BASIN IPN3
          53          HC       2

          54          KK SB-IPN4
          55          KM   COMPUTE HYDROGRAPH FOR BASIN IPN4
          56          BA    .101
          57          LS       0    62.0
          58          UD    .313

          59          KK SB-IPN5
          60          KM   COMPUTE HYDROGRAPH FOR BASIN IPN5
          61          BA    .046
          62          LS       0      62
          63          UD    .248

          64          KK RT-IPN5
          65          KM   ROUTE THE FLOW FROM BASIN IPN5 TO API3
          66          RD     400     .03    .013            CIRC     2.5

          67          KK    API3
          68          KM   COMBINE THE FLOW FROM BASIN IPN4 WITH THE ROUTED FLOW FROM BASIN IPN5
          69          HC       2

          70          KK RT-API3
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 71          KM   ROUTE THE FLOW FROM API3 TO API4
 72          RD    440     .02    .013            CIRC     4.5

 73          KK SB-IPN6
 74          KM   COMPUTE HYDROGRAPH FOR BASIN IPN6
 75          BA    .034
 76          LS      0    79.9
 77          UD    .146

 78          KK    API4
 79          KM   COMBINE THE FLOW FROM BASIN IPN6 WITH THE ROUTED FLOW FROM API3
 80          HC      2

 81          KK RT-API4
 82          KM   ROUTE THE FLOW FROM API4 TO API5
 83          RD    900    .002    .013            CIRC     6.0

 84          KK SB-IPN7
 85          KM   COMPUTE HYDROGRAPH FOR BASIN IPN7
 86          BA    .029
 87          LS      0    72.4
 88          UD    .248
                                  HEC-1 INPUT                                    PAGE  3

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


 89          KK    API5
 90          KM   COMBINE THE FLOW FROM BASIN IPN7 WITH THE ROUTED FLOW FROM API4
 91          HC      2

 92          KK RT-API5
 93          KM   ROUTE THE FLOW FROM API5 TO AP3
 94          RD    500     .07    .013            CIRC     6.0

 95          KK     AP3
 96          KM   COMBINE ROUTED FLOW FROM API5 WITH ROUTED FLOW IN THE NATURAL CHANNEL(API2).
 97          KM   THIS IS THE TOTAL FLOW TO THE DF-F RUNDOWN CHANNEL IN THE INTERIM CONDITION
 98          HC      2
 99          KM   ********************************************************************************
100          KM   ****DOWNSTREAM AREA MODELED IN THE ASSUMED FULLY DEVELOPED CONDITION
101          KM   ********************************************************************************

102          KK  SB-PN7
103          KM   COMPUTE HYDROGRAPH FOR BASIN PN7
104          BA    .071
105          LS      0    74.0
106          UD    .200

107          KK  SB-PN8
108          KM   COMPUTE HYDROGRAPH FOR BASIN PN8
109          BA    .036
110          LS      0    88.5
111          UD    .125

112          KK   APDFF
113          KM   COMBINE THE FLOW FROM BASINS PN7 AND PN8 AND AP3. THIS IS THE TOTAL
114          KM   INFLOW TO DETENTION FACILITY F
115          HC      3

116          KK  RR-DFF
117          KM   ROUTE FLOW THRU A PROPOSED REGIONAL DETENTION FACILITY.
118          KM   VOLUME REFLECTS CURRENT DRAFT DESIGN
119          KM   DISCHARGE ASSUMES THE 54" DIA OUTLET SET AT INVERT ELEV. 11.5 IS RESTRICTED
120          KM   TO A 11.7 SF OPENING BY A STEEL PLATE COVERING THE TOP 1.4' OF THE PIPE.
121          KM   DISCHARGE CALCULATED WITH THE ORIFICE EQUATION WITH HEAD CALCULATED TO
122          KM   THE CENTER OF THE OPENING AREA @ ELEVATION 13.28
123          KO      3       1
124          RS      1    STOR       0
125          SV      0     .18     2.6     8.1    15.4   23.70    32.6    42.4    53.1    64.8
126          SE     13      14      16      18      20      22      24      26      28      30
127          SQ      5      30      93     122     146     166     184     201     216     230

128          KK  RT-DFF
129          KM   ROUTE THE OUTFLOW FROM DETENTION FACILITY F DOWN PINE CREEK NORTH FORK FROM
130          KM   ROYAL PINE DRIVE TO AP-4
131          RD   2400     .02    .060            TRAP      20       3
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 132      KK  SB-PN9
 133      KM   COMPUTE HYDROGRAPH FOR BASIN PN9
 134      BA    .110
 135      LS       0    70.5
 136      UD    .219

 137      KK     AP4
 138      KM   COMBINE ROUTED FLOW RT-DFF WITH FLOW FROM BASIN PN9 AT AP-4
 139      HC       2

 140      KK  RT-AP4
 141      KM   ROUTE THE FLOW IN PINE CREEK NORTH FORK CHANNEL FROM AP4
 142      KM   TO DETENTION FACILITY "E" ABOVE STONEGLEN DR.
 143      RD    1400    .032    .060            TRAP      20       3
 144      KM   PN10 DESCRIPTOR NOT USED

 145      KK SB-PN11
 146      KM   COMPUTE HYDROGRAPH FOR BASIN PN11
 147      BA    .083
 148      LS       0    79.0
 149      UD    .194

 150      KK SB-PN12
 151      KM   COMPUTE HYDROGRAPH FOR BASIN PN12
 152      BA   0.101
 153      LS       0    71.0
 154      UD    .222

 155      KK   APDFE
 156      KM   COMBINE ROUTED FLOW FROM AP4 WITH FLOW FROM BASINS PN11 AND PN12
 157      KM   THIS IS THE TOTAL INFLOW TO DETENTION FACILITY E
 158      HC       3

 159      KK  RR-DFE
 160      KM   NOTE: THE INPUT POND VOLUME REFLECTS THE AS-BUILT SURVEY FOR THE PC 200 LOMR
 161      KM   ROUTE FLOW THRU THE THE EXISTING DETENTION FACILITY. ASSUME
 162      KM   THE EXISTING 54" DIA IS UN-RESTRICTED INVERT AT ELEVATION 84.
 163      KM   OUTLET Q ESTIMATED WITH BUREAU OF PUBLIC ROADS NOMOGRAPH FOR
 164      KM   INLET CONTROL OF CULVERTS. DISCHARGE ABOVE EL 800 INCLUDES FLOW
 165      KM   OVER EMERGENCY SPILLWAY
 166      KO       3       1
 167      RS       1    STOR       0
 168      SV       0    0.29    1.95    4.92    8.27   11.99   16.09   20.60   25.51   30.89
 169      SE     784     786     788     790     792     794     796     798     800     802
 170      SQ       0      26      80     133     173     208     238     260     278    1441

 171      KK  RT-DFE
 172      KM   ROUTE THE OUTFLOW FROM DETENTION FACILITY "E" IN A STORM DRAIN TO AP-5
 173      RD    1500    .025    .013            CIRC     4.5
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LINE      ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

 174      KK SB-PN15
 175      KM   COMPUTE HYDROGRAPH FOR BASIN PN15
 176      BA    .069
 177      LS       0    72.7
 178      UD    .186

 179      KK     AP5
 180      KM   COMBINE ROUTED FLOW FROM DFE WITH FLOW FROM BASIN PN15
 181      HC       2

 182      KK  RT-AP5
 183      KM   ROUTE THE FLOW AT AP5 TO AP5A AT THE CONFLUENCE OF THE FLOWS FROM THE
 184      KM   NORTH AND SOUTH FORKS OF PINE CREEK
 185      RD     150    .025    .013            CIRC     5.5
 186      KM   ************************************************************************
 187      KM   ***** BEGIN CALCULATIONS FOR THE SOUTH FORK OF PINE CREEK WATERSHED ****
 188      KM   ************************************************************************
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 189          KK SB-IPS1
 190          KM   COMPUTE HYDROGRAPH FOR BASIN IPS1
 191          BA    .126
 192          LS       0    62.0
 193          UD    .352

 194          KK RT-IPS1
 195          KM   ROUTE THE FLOW FROM BASIN IPS1 THROUGH BASIN IPS2 TO API6
 196          RD    2200    .028    .045            TRAP      25       10

 197          KK SB-IPS2
 198          KM   COMPUTE HYDROGRAPH FOR BASIN IPS2
 199          BA    .079
 200          LS       0    63.2
 201          UD    .300

 202          KK    API6
 203          KM   COMBINE FLOW FROM BASIN IPS2 WITH THE ROUTED FLOW FROM BASIN IPS1
 204          HC       2

 205          KK RT-API6
 206          KM   ROUTE FLOW FROM API6 TO AP6
 207          RD     300     .05    .013            CIRC     4.5

 208          KK SB-IPS3
 209          KM   COMPUTE HYDROGRAPH FOR BASIN IPS3
 210          BA    .109
 211          LS       0      62
 212          UD    .250

 213          KK RT-IPS3
 214          KM   ROUTE THE FLOW FROM BASIN IPS3 THROUGH BASIN IPS4 TO API7
 215          RD    3250    .033    .045            TRAP      10       15
                                    HEC-1 INPUT                                                    PAGE  6

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

 216          KK SB-IPS4
 217          KM   COMPUTE HYDROGRAPH FOR BASIN IPS4
 218          BA    .168
 219          LS       0      62
 220          UD    .305

 221          KK    API7
 222          KM   COMBINE THE ROUTED FLOW FROM BASIN IPS3 TO THE FLOW FROM BASIN IPS4
 223          HC       2

 224          KK RT-API7
 225          KM   ROUTE THE FLOW FROM API7 THROUGH BASIN IPS5 TO API8
 226          RD    1650    .032    .045            TRAP      10       35
 227          RD     600    .015    .032            TRAP       4        3

 228          KK SB-IPS5
 229          KM   COMPUTE HYDROGRAPH FOR BASIN IPS5
 230          BA    .041
 231          LS       0    62.0
 232          UD    .307

 233          KK    API8
 234          KM   COMBINE THE ROUTED FLOW FROM API7 TO THE FLOW FROM BASIN IPS5
 235          HC       2

 236          KK SB-IPS6
 237          KM   COMPUTE HYDROGRAPH FOR BASIN IPS6
 238          BA    .115
 239          LS       0    63.7
 240          UD    .363

 241          KK     AP6
 242          KM   COMBINE THE ROUTED FLOW FROM API8 AND API6 WITH THE FLOW FROM BASIN IPS6
 243          HC       3

 244          KK  RT-AP6
 245          KM   ROUTE THE FLOW FROM AP6 TO AP6A
 246          RD     600     .02    .013            CIRC     6.0
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 247          KK SB-ISP7
 248          KM   COMPUTE HYDROGRAPH FOR BASIN ISP7
 249          BA    .030
 250          LS       0    84.3
 251          UD    .227

 252          KK    AP6A
 253          KM   COMBINE THE ROUTED FLOW FROM BASIN IPS7 WITH THE ROUTED FLOW FROM API6
 254          HC       2
 255          KM   ********************************************************************************
 256          KM   ****DOWNSTREAM AREA MODELED IN THE ASSUMED FULLY DEVELOPED CONDITION
 257          KM   ********************************************************************************
                                        HEC-1 INPUT                                          PAGE  7

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

 258          KK RT-AP6A
 259          KM   ROUTE FLOW FROM AP6A AT THE WEST SIDE OF POWERS BLVD TO AP6B.
 260          RD     600     .02    .013            CIRC     6.0

 261          KK  SB-PS2
 262          KM   COMPUTE HYDROGRAPH FOR BASIN PS2
 263          BA    .024
 264          LS       0    88.4
 265          UD    .150

 266          KK    AP6B
 267          KM   COMBINE FLOW FROM PS2 TO THE ROUTED FLOW AT AP6B
 268          HC       2

 269          KK RT-AP6B
 270          KM   ROUTE FLOW FROM AP6B TO AP7 AT THE BRIARGATE
 271          KM   PKWY./ AUSTIN BLUFFS PKWY. INTERSECTION
 272          RD     780     .02    .013            CIRC     6.5

 273          KK  SB-PS3
 274          KM   COMPUTE HYDROGRAPH FOR BASIN PS3
 275          BA    .070
 276          LS       0    97.5
 277          UD    .117

 278          KK  SB-PS4
 279          KM   COMPUTE HYDROGRAPH FOR BASIN PS4
 280          BA    .060
 281          LS       0    78.5
 282          UD    .178

 283          KK     AP7
 284          KM   COMBINE ROUTED FLOW AT AP7 WITH FLOW FROM BASINS PS3 AND PS4
 285          HC       3

 286          KK  RT-AP7
 287          KM   ROUTE THE COMBINED FLOW AT AP7 TO AP7A
 288          RD    1050    .022    .013            TRAP       9

 289          KK  SB-PS5
 290          KM   COMPUTE HYDROGRAPH FOR BASIN PS5
 291          BA    .030
 292          LS       0    96.0
 293          UD     .13

 294          KK  SB-PS6
 295          KM   COMPUTE HYDROGRAPH FOR BASIN PS6
 296          BA    .053
 297          LS       0    97.5
 298          UD    .126
                                        HEC-1 INPUT                                          PAGE  8

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

 299          KK    AP7A
 300          KM   COMBINE ROUTED FLOW AT AP7A WITH FLOW FROM BASINS PS5 AND PS6
 301          HC       3

 302          KK RT-AP7A
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303          KM   ROUTE THE COMBINED FLOW AT AP7A TO AP8
304          RD     800    .022    .013            TRAP      11

305          KK  SB-PS7
306          KM   COMPUTE HYDROGRAPH FOR BASIN PS7
307          BA    .031
308          LS       0    97.5
309          UD    .118

310          KK  SB-PS8
311          KM   COMPUTE HYDROGRAPH FOR BASIN PS8
312          BA    .112
313          LS       0    83.0
314          UD    .174

315          KK     AP8
316          KM   COMBINE ROUTED FLOW AT AP8 WITH FLOW FROM BASINS PS7 AND PS8
317          HC       3

318          KK  RT-AP8
319          KM   ROUTE THE COMBINED FLOW AT AP8 TO AP9, AT DF C
320          RD     250    .022    .013            TRAP      16

321          KK  SB-PS9
322          KM   COMPUTE HYDROGRAPH FOR BASIN PS9
323          BA    .054
324          LS       0    90.0
325          UD    .125

326          KK  RT-PS9
327          KM   ROUTE THE FLOW FROM BASIN PS9 TO AP9, AT DF C
328          RD     880    .025    .013            CIRC     4.0

329          KK     AP9
330          KM   COMBINE ROUTED FLOW AT AP9 WITH FLOW FROM BASIN PS3. THIS IS THE TOTAL FLOW
331          KM   DETENTION FACILITY C FROM UNION BLVD AND UPSTREAM AREAS
332          HC       2

333          KK SB-PS10
334          KM   COMPUTE HYDROGRAPH FOR BASIN PS10
335          BA    .053
336          LS       0    73.4
337          UD    .177
                                        HEC-1 INPUT                                        PAGE  9

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


338          KK   APDFC
339          KM   COMBINE FLOW AT AP-9 TO FLOW FROM SB-PS10 IN REGIONAL DETENTION FACILITY "C"
340          KM   THIS IS THE TOTAL INFLOW TO DETENTION FACILITY "C"
341          HC       2

342          KK  RR-DFC
343          KM   ROUTE FLOW THRU REGIONAL DETENTION FACILITY C.  ASSUME THE PLANNED 48" DIA
344          KM   OUTLET WITH THE INVERT AT EL 62.  OUTLET Q ESTIMATED WITH BUREAU OF PUBLIC
345          KM   ROADS NOMOGRAPH FOR INLET CONTROL OF CULVERTS, SCALE 1.
346          KO       3       1
347          RS       1    STOR       0
348          SV       0     1.1     7.7    16.9    26.9    37.7    49.2    61.5    74.5    88.4
349          SE      63      64      66      68      70      72      74      76      78      80
350          SQ       6      23      70     110     140     168     190     215     232     245

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

355          KK SB-PS11
356          KM   COMPUTE HYDROGRAPH FOR BASIN PS11
357          BA    .054
358          LS       0    80.3
359          UD    .172

360          KK    AP10
361          KM   COMBINE ROUTED FLOW RT-DFC TO FLOW FROM SB-PS11
362          HC       2
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363          KK SB-PS12
364          KM   COMPUTE HYDROGRAPH FOR BASIN PS12
365          BA    .153
366          LS       0    69.0
367          UD    .233

368          KK   APDFB
369          KM   COMBINE FLOW AT AP10 TO FLOW FROM BASIN PS12
370          HC       2

371          KK  RR-DFB
372          KM   ROUTE FLOW THROUGH REGIONAL DETENTION POND "B"
373          KM   VOLUME REFLECTS 11-99 AS-BUILT DATA
374          KM   DISCHARGE ASSUMES THE 54" DIA OUTLET SET AT INVERT ELEV. 69.9 IS RESTRICTED
375          KM   TO A 11.7 SF OPENING BY A STEEL PLATE COVERING THE TOP 1.4' OF THE PIPE
376          KM   DISCHARGE CALCULATED WITH THE ORIFICE EQUATION WITH HEAD CALCULATED TO
377          KM   THE CENTER OF THE OPENING AREA @ ELEVATION 71.68 DISCHARGE ABOVE 87.6
378          KM   INCLUDES FLOW OVER 80' LONG EMERGENCY SPILLWAY
379          KO       3       1
380          RS       1    STOR       0
381          SV       0    0.06    0.66    2.51    5.08    8.05   11.42   15.22   19.49   23.24
382          SV   24.76   29.96
383          SE    70.6    72.0      74      76      78      80      82      84      86    87.6
384          SE      88      90
                                    HEC-1 INPUT                                          PAGE 10

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

385          SQ       0      20      86     117     142     163     181     198     213     225
386          SQ     289    1133

387          KK  RT-DFB
388          KM   ROUTE FLOW 1000 LF NORTHWEST IN A STORM DRAIN FROM DETENTION FACILITY "B"
389          KM   TO AP-11
390          RD    1000    .021    .013            CIRC     5.0

391          KK SB-PS13
392          KM   COMPUTE HYDROGRAPH FOR BASIN PS13
393          BA    .065
394          LS       0    74.3
395          UD    .149

396          KK    AP11
397          KM   COMBINE ROUTED FLOW RT-DFB TO FLOW FROM BASIN PS13 AT AP11
398          HC       2

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

403          KK    AP5A
404          KM   COMBINE ROUTED FLOW AP5 (FLOW FROM THE NORTH FORK OF PINE CREEK) TO ROUTED
405          KM   FLOW RT-AP11 (FLOW FROM THE SOUTH FORK OF PINE CREEK)
406          HC       2

407          KK RT-AP5A
408          KM   ROUTE THE FLOW AT AP5A IN THE PLANNED 84" STORM SEWER TO PI9NE CREEK THE
409          KM   DOWN PINE CREEK MAIN CHANNEL TO AP12. USE AN APPROXIMATE AVERAGE CHANNEL
410          KM   SECTION AND SLOPE FOR ROUTING.
411          RD     300     .02    .013            CIRC     7.0
412          RD    1500    .023    .060            TRAP      50       2

413          KK SB-PN13
414          KM   COMPUTE HYDROGRAPH FOR BASIN PN13
415          BA   0.045
416          LS       0    64.0
417          UD    .241

418          KK RR-DFIR
419          KM   ROUTE FLOW FROM BASIN PN13 THRU THE EXISTING IRRIGATION POND AS A EXTENDED
420          KM   RELEASE DETENTION POND
421          KM   START STORAGE AT EL 6899.5, SURFACE AREA 55012 SF
422          KM   H.W.S.E. = 6902.0, SURFACE AREA 65,931 SF
423          KO       3       1
424          RS       1    STOR       0
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 425          SV       0     3.5      10
 426          SE   899.5     902     903
 427          SQ       0     1.0     2.0
                                    HEC-1 INPUT                                    PAGE 11

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

 428          KK  SB-PM1
 429          KM   COMPUTE HYDROGRAPH FOR BASIN PM1
 430          BA    .054
 431          LS       0    78.5
 432          UD    .203

 433          KK  RT-PM1
 434          KM   ROUTE THE FLOW FROM BASIN PM1 1200 LF NORTH IN THE LEXINGTON DR. S.D. TO
 435          KM   PINE CREEK MAIN CHANNEL THEN IN THE PINE CREEK CHANNEL TO AP12.
 436          RD    1200     .08    .013             CIR      3.5
 437          RD     400     .03    .060            TRAP       30        2

 438          KK  SB-PM2
 439          KM   COMPUTE HYDROGRAPH FOR BASIN PM2, AN AREA OF THE GOLF COURSE
 440          BA    .187
 441          LS       0    68.5
 442          UD    .310

 443          KK  SB-PM3
 444          KM   COMPUTE HYDROGRAPH FOR BASIN PM3
 445          BA    .058
 446          LS       0    71.0
 447          UD    .248

 448          KK    AP12
 449          KM   COMBINE ROUTED FLOW RT-PM1 WITH THE ROUTED FLOW IN PINE CREEK MAIN CHANNEL
 450          KM   AND THE FLOW FROM BASINS PM2, PM3, AND THE OUTFLOW FROM DFIR
 451          KM   NOTE OUTFLOW FROM DFIR IS INSIGNIFICANT IN THE  100 YEAR DESIGN STORM
 452          HC       5

 453          KK RT-AP12
 454          KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL DOWN THE CHANNEL FROM AP12
 455          KM   TO THE CROSSING AT CHAPEL HILLS DRIVE.
 456          KM   USE AN APPROXIMATE AVERAGE CHANNEL SECTION AND SLOPE FOR ROUTING.
 457          RD    1600    .018    .060            TRAP       30        2

 458          KK  SB-PM4
 459          KM   COMPUTE HYDROGRAPH FOR BASIN PM4
 460          BA    .111
 461          LS       0    71.9
 462          UD    .170

 463          KK    AP13
 464          KM   COMBINE FLOW FROM BASIN PM4 TO THE ROUTED FLOW RT-AP12 IN PINE CREEK MAIN
 465          KM   CHANNEL ON THE EAST SIDE OF THE CHAPEL HILLS DRIVE CROSSING
 466          HC       2
 467          KM   ********************************************************************************
 468          KM   ********BEGIN SOUTH CHAPEL HILLS DRIVE STORM DRAIN WATERSHED*****************
 469          KM   ********************************************************************************
                                    HEC-1 INPUT                                    PAGE 12

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

 470          KK  SB-CS1
 471          KM   COMPUTE HYDROGRAPH FOR BASIN CS1
 472          BA    .053
 473          LS       0    73.8
 474          UD    .181

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

 478          KK  SB-CS2
 479          KM   COMPUTE HYDROGRAPH FOR BASIN CS2
 480          BA    .070
 481          LS       0    98.0
 482          UD    .101
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KKRR-DFCS2
KM   ROUTE FLOW THRU AN ASSUMED DETENTION FACILITY TO REFLECT DETENTION OF 1.6cfs
KM   /ACRE FROM THE LI/O PROPERTY AS ASSUMED IN THE MDDP FOR BRIARGATE BUSINESS
KM   CAMPUS. BECAUSE THE DISCHARGE CONFIGURATION IS UNKNOWN AT THIS TIME ASSUME
KM   THAT THE PEAK DISCHARGE RATE MAY BE DISCHARGED AS SOON AS IT IS AVAILABLE AT
KM   THE POND TO REFLECT POTENTIAL FREE DISCHARGE FROM A PORTION OF THE SUBBASIN
KM   DISCHARGE REDUCTION ASSUMED AT 1.6 cfS x 37ac=60 cfs
RS       1    STOR       0
SV       0    .001       6      10
SE     100     102     104     106
SQ       0     194     194     194

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

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

KK  SB-CS3
KM   COMPUTE HYDROGRAPH FOR BASIN CS3
BA    .051
LS       0    85.5
UD    .177

KKRR-DFCS3
KM   ROUTE FLOW THRU AN ASSUMED DETENTION FACILITY TO REFLECT DETENTION REDUCING
KM   THE PEAK 100YR FLOW RATE FROM THE 9 ACRES OF THE BASIN THAT ARE DESIGNATED
KM   AS LI/O USE AS ASSUMED IN MDDP FOR BRIARGATE BUSINESS CAMPUS.
KM   BECAUSE THE DISCHARGE CONFIGURATION IS UNKNOWN AT THIS TIME ASSUME
KM   THAT THE PEAK DISCHARGE RATE MAY BE DISCHARGED AS SOON AS IT IS AVAILABLE
KM   AT THE POND TO REFLECT FREE DISCHARGE FROM A PORTION OF THE SUB BASIN.
KM   DISCHARGE REDUCTION ASSUMED AT 1.6 cfS x 9=14 cfs
                              HEC-1 INPUT                                  PAGE 13

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

RS       1    STOR       0
SV       0    .001       6      10
SE     100     102     104     106
SQ       0     123     123     123

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

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

KK  SB-CS4
KM   COMPUTE HYDROGRAPH FOR BASIN CS4
BA    .066
LS       0    86.0
UD    .128

KK RR-DFVC
KM   ROUTE FLOW THRU THE PROPOSED VILLAGE CENTER DETENTION FACILITY
KM   POND VOLUME BASED ON 1/02 SURVEY
KM   DISCHARGE BASED ON 18" FES OUTLET WITH AN INVERT ELEV.=70.7
KM   BUREAU OF PUBLIC ROADS NOMOGRAPH USED TO ESTIMATE OUTFLOW RATES ASSUMING
KM   INLET CONTROL.
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547          RS       1    STOR       0
548          SV       0     .01    0.68    2.11    3.72    5.70     6.8
549          SE    70.7      72      74      76      78      80      81
550          SQ       0       5      15      21      25      28      29

551          KK    AP16
552          KM    COMBINE ROUTED FLOW RT-AP15 WITH THE DISCHARGE FROM THE VILLAGE CENTER POND
553          HC       2

554          KK RT-AP16
555          KM    ROUTE THE FLOW IN THE CHAPEL HILLS DRIVE STORM DRAIN FROM AP16 TO AP19 IN
556          KM    PINE CREEK MAIN CHANNEL ON THE DOWNSTREAM SIDE OF THE CHAPEL HILLS DRIVE
557          KM    CROSSING
558          RD     300     .03    .013             CIR     4.5
559          KM    ********************************************************************************
560          KM    ****BEGIN CALCULATION OF THE NORTH CHAPEL HILLS DR. STORM DRAIN WATERSHED***
561          KM    ********************************************************************************
                                        HEC-1 INPUT                                          PAGE 14

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


562          KK  SB-CN1
563          KM    COMPUTE RUNOFF FROM BASIN CN1 THE WATERSHED CONTRIBUTING TO THE PARK SITE AT
564          KM    CHAPEL HILLS DRIVE POND (REGIONAL DETENTION FACILITY "A").
565          BA      .11
566          LS       0    78.4
567          UD    .190

568          KK  RR-DFA
569          KM    ROUTE THE FLOW FROM CN1 THROUGH THE DETENTION POND AT THE PARK
570          KM    SITE AT CHAPEL HILLS DRIVE. STAGE STORAGE CURVE PER THE 12/22/97 GRADING PLAN
571          KM    DISCHARGE CURVE REFLECTS 12" DIAMETER OUTLET PIPE CONTROL FOR NORMAL DISCHARG
572          KM    AND A 100' LONG EMERGENGY SPILLWAY SET AT ELEVATION 6805.5
573          KO       3       1
574          RS       1    STOR       0
575          SV       0     .01     .22     .99    1.95    2.80    4.25    5.31    6.51   11.64
576          SV   15.36
577          SQ    2.35    2.54    3.00    3.73    4.35    4.75    5.36    5.50    8.39    9.01
578          SQ     279
579          SE  6796.6  6797.0  6798.0  6800.0  6802.0  6803.5 6803.51    6804  6804.1  6805.5
580          SE  6806.5

581          KK  RT-DFA
582          KM    ROUTE OUTFLOW FROM  REGIONAL DETENTION POND "A" DOWN THE CHAPEL HILLS STORM
583          KM    DRAIN FROM LEXINGTON DRIVE TO TREELAKE DRIVE
584          RD     930     .04    .013             CIRC     1.5

585          KK  SB-CN2
586          KM    COMPUTE RUNOFF FROM BASIN CN2
587          BA     .078
588          LS       0    75.5
589          UD    .214

590          KK    AP17
591          KM    COMBINE ROUTED FLOW RT-DFA AND FLOW FROM BASIN CN2 AT THE INTERSECTION OF
592          KM    CHAPEL HILLS DRIVE AND TREELAKE DRIVE
593          HC       2

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

597          KK  SB-CN3
598          KM    COMPUTE RUNOFF FROM BASIN CN3
599          BA     .043
600          LS       0    80.0
601          UD    .157

602          KK    AP18
603          KM    COMBINE ROUTED FLOW RT-AP17 TO FLOW FROM BASIN CN3 AT INTERSECTION OF CHAPEL
604          KM    HILLS DR. AND MULLIGAN DR.
605          HC       2
                                        HEC-1 INPUT                                          PAGE 15

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

612          KK    AP19
613          KM   COMBINE ROUTED FLOW RT-AP18 FROM THE NORTH CHAPEL HILLS DR. STORM DRAIN
614          KM   WITH THE ROUTED FLOW RT-AP16 FROM THE SOUTH CHAPEL HILLS DRIVE STORM DRAIN
615          KM   AND THE FLOW IN PINE CREEK MAIN CHANNEL (AP13) AT THE WEST SIDE OF THE CHAPEL
616          KM   HILLS DRIVE CROSSING. FLOW THAT IS TAKEN INTO THE PINE CREEK CHANNEL FORM THE
617          KM   STREET AT THIS POINT HAS BEEN ACCOUNTED FOR IN BASINS CN3 AND CS3. THIS WAS
618          KM   DONE TO REDUCE THE COMPLEXITY OF THE MODEL.
619          HC      3

620          KK RT-AP19
621          KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL FROM AP19 AT THE CHAPEL HILLS DRIVE
622          KM   CROSSING TO AP19A AT THE OUTFALL FROM THE SUB-BASIN PM6A, USE AVERAGE SLOPES
623          KM   AND APPROXIMATE CROSS SECTIONS FOR ROUTING.
624          RD    550    .035    .060            TRAP     30       2
625          RD    650    .025    .060            TRAP    120       2

626          KK SB-PM6A
627          KM   COMPUTE HYDROGRAPH FOR BASIN PM6A
628          BA    .042
629          LS      0    90.0
630          UD    .131

631          KK   AP19A
632          KM   COMBINE FLOW FROM BASIN PM6A WITH THE ROUTED FLOW IN PINE CREEK
633          HC      2

634          KKRT-AP19A
635          KM   ROUTE THE FLOW IN PINE CREEK MAIN CHANNEL FROM AP19A AT THE OUTFALL FROM
636          KM   SUB-BASIN PM6A TO AP20 AT REGIONAL DETENTION FACILITY 1 AT BRIARGATE PARKWAY
637          KM   AND HIGHWAY 83. USE AVERAGE SLOPES AND APPROXIMATE CROSS SECTIONS FOR ROUTING
638          RD    450    .025    .060            TRAP     120      2
639          RD   1400    .026    .060            TRAP      60      2

640          KK  SB-PM5
641          KM   COMPUTE HYDROGRAPH FOR BASIN PM5
642          BA    .193
643          LS      0    70.5
644          UD    .185

645          KK    AP20
646          KM   COMBINE FLOW FROM BASIN PM5 WITH THE ROUTED FLOW IN PINE CREEK
647          HC      2
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

648          KK SB-PM6B
649          KM   COMPUTE HYDROGRAPH FOR SUB-BASIN PM6B
650          KM   NOTE:THE MDDP FOR BRIARGATE BUSINESS CAMPUS REQUIRES DETENTION IN THIS
651          KM   SUBBASIN. FOR THE PURPOSE OF THIS ANALYSIS NO DETENTION IS ASSUMED TO ALLOW
652          KM   THE DEVELOPER THE OPTION OF CONSTRUCTING LARGER CONVEYANCE FACILITIES TO
653          KM   DETENTION FACILITY No. 1 AND ALLOWING FREE DISCHARGE FROM THE BASIN.
654          BA    .036
655          LS      0    98.0
656          UD    .115

657          KK    AP21
658          KM   COMBINE FLOW FROM PM6A WITH THE FLOW IN PINE CREEK AT AP21 FOR THE TOTAL FLOW
659          KM   IN PINE CREEK CHANNEL AS IT ENTERS DETENTION FACILITY No 1
660          KO      0       1
661          HC      2

662          KK  SB-PM7
663          KM   COMPUTE HYDROGRAPH FOR BASIN PM7 THE AREA NORTH OF DETENTION FACILITY 1
664          KM   NOTE: THE MDDP FOR THE BRIARGATE BUSINESS CAMPUS REQUIRES DETENTION IN
665          KM   THE NON RESIDENTIAL PORTIONS OF THIS AREA. FOR THE PURPOSE OF THIS ANALYSIS
666          KM   FREE DISCHARGE FROM THE BASIN IS ASSUMED. THE RESIDENTIAL PORTION OF THE
667          KM   BASIN LOCATED IN OUTSIDE THE CITY LIMITS IS ASSUMED TO BE FULLY DEVELOPED
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668          KM   AS 1 DU PER ACRE RESIDENTIAL.
669          BA    .138
670          LS       0    76.3
671          UD    .353
672          KM   ********************************************************************************
673          KM   ****BEGIN CALCULATIONS FOR THE FOCUS ON THE FAMILY STORM DRAIN WATERSHED****
674          KM   ********************************************************************************

675          KK   SB-F1
676          KM   COMPUTE HYDROGRAPH FOR BASIN F1
677          BA    .119
678          LS       0    78.3
679          UD    .208

680          KK     F1P
681          KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY ASSUMING
682          KM   FULL PIPE FLOW IN 36" DIA @3.44% FROM THE SAG POINT IN LEXINGTON DRIVE.
683          KM   FULL FLOW CAPACITY= 123cfs
684          DT     F1S
685          DI     123     150     200     250
686          DQ       0      27      77     127

687          KK  RT-F1P
688          KM   ROUTE FLOW IN THE STORM DRAIN 1300 LF WEST FROM THE SAG PT. IN LEXINGTON
689          KM   DRIVE TO SUMMER FIELD POND
690          RD    1300    .036    .013            CIRC       3
                                      HEC-1 INPUT                                                PAGE 17

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


691          KK   SB-F2
692          KM   COMPUTE HYDROGRAPH FOR BASIN F2
693          BA    .039
694          LS       0    74.0
695          UD    .171

696          KK  SB-F1S
697          KM   RETRIEVE FLOW THAT WILL NOT FIT IN THE STORM DRAIN AT LEXINGTON DRIVE
698          DR     F1S

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

703          KK AP-DFSF
704          KM   COMBINE ROUTED FLOWS RT-F1S AND RT-F1P WITH FLOW FROM F2 AT THE SUMMER
705          KM   FIELD POND. THIS IS THE TOTAL FLOW TO THE POND
706          HC       3

707          KK RR-DFSF
708          KM   ROUTE THE FLOW AT AP-DFSF THROUGH THE SUMMER FIELD DETENTION BASIN.
709          KM   THE INFLOW/OUTFLOW S.D. FOR THIS FACILITY IS BURIED BELOW THE POND BOTTOM.
710          KM   THE POND FILLS WHEN THE CAPACITY OF THE DOWNSTREAM REACH OF S.D. IS
711          KM   EXCEEDED. THIS CONFIGURATION PRESENTS A COMPLEX HYDRAULIC PROBLEM. IT IS
712          KM   ASSUMED THAT UNTIL INFLOW >120cfs FLOW WILL PASS THROUGH THE STORM DRAIN.
713          KM   WHEN INFLOW > 120cfs BACKWATER WILL FORM AT THE OUTLET AND THE LID ON THE
714          KM   UPSTREAM MANHOLE WILL LIKELY BE LIFTED OFF AND SOME FLOW WILL ENTER THE POND
715          KM   FROM THAT POINT. WHEN INFLOW>120cfs IT IS ASSUMED THAT THE HEAD LOSS AT
716          KM   THE OUTLET WILL BE APPOXIMATELY 1*VELOCITY HEAD FOR THE PURPOSE OF
717          KM   CALCULATING THE DISCHARGE CURVE.
718          KO       3       1
719          RS       1    STOR       0
720          SV       0    0.57    4.63    6.87   10.32
721          SE      92      94      96      98     100
722          SQ     120     126     131     137     144

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

726          KK   SB-F3
727          KM   COMPUTE HYDROGRAPH FOR BASIN F3
728          BA    .114
729          LS       0    77.0
730          UD    .215
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731          KK    AP22
732          KM    COMBINE ROUTED FLOW RT-DTSF TO FLOW FROM BASIN F3 AT THE INTERSECTION OF
733          KM    RESEARCH PARKWAY AND SUMMERSET DRIVE.
734          HC       2
                                        HEC-1 INPUT                                    PAGE 18

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

735          KK    AP22P
736          KM    DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
737          KM    INTERSECTION OF RESEARCH PARKWAY AND SUMMERSET DRIVE. CONTROLLING
738          KM    DOWNSTREAM STORM DRAIN IS A 60" DIA RCP @ S=1%, FULL FLOW CAPACITY= 260cfs
739          KM    THE DIVERTED FLOW IS ASSUMED TO RUN DOWN SUMMERSET DR. SOUTH OF RESEARCH
740          KM    PARKWAY AND EVENTUALLY TO COTTONWOOD CREEK.
741          DT    AP22S
742          DI     260     261     280     300     320     340     360     380
743          DQ       0       1      20      40      60      80     100     120

744          KKRT-AP22P
745          KM    ROUTE THE S.D.FLOW FROM THE BRIARGATE PKWY/ SUMMERSET INTERSECTION TO THE
746          KM    INTERSECTION OF RESEARCH PKWY. AND CHAPEL HILLS DR.
747          RD    2100     .02    .013            CIRC       5

748          KK    SB-F4
749          KM    COMPUTE HYDROGRAPH FOR BASIN F4
750          BA     .038
751          LS        0    83.0
752          UD     .197

753          KK RR-DFF4
754          KM    ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
755          KM    RATE OF 1.6 CFS/ACRE FROM THE 11.5 AC THAT WILL BE DEVELOPED AS LI/O
756          KM    DISCHARGE REDUCTION PER ACRE IS DETERMINED PER THE RATE AND AREA INCLUDED
757          KM    IN THE MDDP FOR BRIARGATE BUSINESS CAMPUS
758          KM    THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
759          KM    THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE SITE WILL LIKELY
760          KM    FREE DISCHARGE TO THE ADJACENT STREET
761          KM    DISCHARGE REDUCTION = LI/O AREA (acres)11.5 x 1.6 cfs = 18.4 cfs
762          RS        1    STOR       0
763          SV        0    .001       6      10
764          SE      100     102     104     106
765          SQ        0    70.6    70.6    70.6

766          KK    AP23
767          KM    COMBINE ROUTED FLOW RT-AP22P TO FLOW FROM BASIN F4 AT THE INTERSECTION OF
768          KM    RESEARCH PARKWAY AND CHAPEL HILLS DR.
769          HC       2

770          KK    AP23P
771          KM    DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
772          KM    FIRST MANHOLE (MH8) DOWNSTREAM OF THE INTERSECTION OF RESEARCH PARKWAY AND
773          KM    CHAPEL HILLS DRIVE. THE MANHOLE IS LOCATED JUST UPSTREAM OF A PIPE SIZE
774          KM    REDUCTION FROM 54" TO 48" DIA.. IT IS ASSUMED THAT THE MH LID WILL BE PUSHED
775          KM    OFF BY THE HIGH HGL ABOVE THE TRANSITION AT THE ESTIMATED 100 YEAR PEAK
776          KM    FLOW RATE. DOWNSTREAM PIPE CAPACITY IS ESTIMATED AT 298 cfs BASED ON
777          KM    FULL PIPE CONVEYANCE CAPACITY OF 48" DIA RCP, SLOPE = 4.3%
778          DT    AP23S
779          DI     298     300     325     350     375     400     425     450     470
780          DQ       0       2      27      52      77     102     127     152     172
                                        HEC-1 INPUT                                    PAGE 19

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

781          KKRT-AP23P
782          KM    ROUTE THE FLOW IN THE STORM DRAIN FROM THE RESEARCH PKWY/CHAPEL HILLS DR.
783          KM    INTERSECTION TO THE INTERSECTION OF EXPLORER DRIVE AND THE FOCUS ON THE
784          KM    FAMILY S.D.
785          RD    2100     .044    .013            CIRC       4

786          KK    AP23S
787          KM    RETRIEVE THE DIVERTED FLOW AT MH8 JUST DOWNSTREAM OF THE INTERSECTION OF
788          KM    RESEARCH PARKWAY AND CHAPEL HILLS DRIVE. THIS IS SURFACE FLOW.
789          DR    AP23S
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790         KKRT-AP23S
791         KM   ROUTE THE SURFACE FLOW AT MH8 ACCROSS THE FOCUS SITE TO EXPLORER DRIVE
792         KM   ASSUME FLOW WILL BE SHALLOW AND WIDE THROUGH THE PARKING LOTS
793         RD    1550    .042    .015            TRAP      75       50

794         KK   SB-F5
795         KM   COMPUTE HYDROGRAPH FOR BASIN F5
796         BA    .064
797         LS       0    89.0
798         UD    .121

799         KK RR-DFF5
800         KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
801         KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
802         KM   AND HISTORIC PEAK 100 YR FLOW RATE PER THE ORIGINAL DBPS CRITERIA FOR LI/O
803         KM   LAND USE. HISTORIC 100 YR PEAK ESTIMATED AT 1.5 CFS/AC. FULLY DEVELOPED 100
804         KM    YR PEAK ESTIMATED AT 4.9 CFS/AC. ESTIMATED REQUIRED DETENTION =
805         KM   (4.9-1.5)*.35*35AC=41cfs   TOTAL Qin=199cfs
806         KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
807         KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
808         KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
809         RS       1    STOR        0
810         SV       0    .001        6       10
811         SE     100     102      104      106
812         SQ       0     158      158      158

813         KK    AP24
814         KM   COMBINE THE ROUTED FLOW IN THE S.D.(RTAP23P) TO FLOW FROM FF1 AND THE SURFACE
815         KM   FLOW THAT WAS DIVERTED THROUGH THE FOCUS SITE FROM MH8(RP102A) AT THE
816         KM   INTERSECTION OF EXPLORER DRIVE AND THE FOCUS ON THE FAMILY STORM DRAIN.
817         HC       3

818         KK   AP24P
819         KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
820         KM   INTERSECTION OF EXPLORER DRIVE AND TELSTAR DRIVE. DOWNSTREAM
821         KM   STORM DRAIN IS A 66" DIA RCP @ S=1.1%, FULL FLOW CAPACITY= 350cfs
822         KM   ASSUME THIS DIVERTED FLOW WILL GO WEST DOWN TELSTAR DRIVE
823         DT   AP24S
824         DI     350      351      370      390      410      430      450      470      490
825         DQ       0        1       20       40       60       80      100      120      140
                                          HEC-1 INPUT                                          PAGE 20

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

826         KKRT-AP24P
827         KM   ROUTE THE FLOW IN THE FOCUS STORM DRAIN FROM AP24 AT THE INTERSECTION OF
828         KM   EXPLORER DRIVE AND THE FOCUS S.D. TO AP25 AT THE INTERSECTION OF EXPLORER
829         KM   DRIVE & BRIARGATE PKWY
830         RD     800    .011    .013             CIRC      5.5

831         KK   SB-F6
832         KM   COMPUTE HYDROGRAPH FOR BASIN F6
833         BA    .038
834         LS       0    93.5
835         UD    .106

836         KK RR-DFF6
837         KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
838         KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
839         KM   AND HISTORIC PEAK 100 YR FLOW RATE. HISTORIC ESTIMATED AT 1.5 CFS/AC.
840         KM   FULLY DEVELOPED ESTIMATED AT 5.4 CFS/AC. ESTIMATED REQUIRED DETENTION =
841         KM   (5.4-1.5)*.35*21.5AC=29cfs   TOTAL Qin=131cfs
842         KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
843         KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
844         KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
845         RS       1    STOR        0
846         SV       0    .001        6       10
847         SE     100     102      104      106
848         SQ       0     102      102      102

849         KK   SB-F7
850         KM   COMPUTE HYDROGRAPH FOR BASIN F7
851         BA    .052
852         LS       0    90.5
853         UD    .137
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854         KK RR-DFF7
855         KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
856         KM   RATE BASED ON APPROXIMATELY 35% OF THE DIFFERENCE BETWEEN THE DEVELOPED
857         KM   AND HISTORIC PEAK 100 YR FLOW RATE. HISTORIC ESTIMATED AT 1.5 CFS/AC.
858         KM   FULLY DEVELOPED ESTIMATED AT 4.9 CFS/AC. ESTIMATED REQUIRED DETENTION =
859         KM   (4.9-1.5)*.35*29AC=35cfs   TOTAL Qin=164cfs
860         KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
861         KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN DISCHARGES
862         KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN
863         RS      1    STOR       0
864         SV      0    .001       6      10
865         SE    100     102     104     106
866         SQ      0     129     129     129

867         KK    AP25
868         KM   COMBINE ROUTED FLOW RT-AP25P TO CONTROLLED FLOW FROM BASINS F6 AND F7
869         KM   AT THE INTERSECTION OF EXPLORER DR AND BRIARGATE PKWY.
870         HC      3
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                                    HEC-1 INPUT

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


871         KK   AP25P
872         KM   DIVERT FLOW IN EXCESS OF THE DOWNSTREAM STORM DRAIN CAPACITY AT THE
873         KM   INTERSECTION OF EXPLORER DR. AND BRIARGATE PARKWAY. CONTROL APPEARS TO
874         KM   BE DOWNSTREAM 54" DIA S.D. @ 5.5% SLOPE, FULL PIPE CAPACITY=461cfs
875         KM   DIVERTED FLOW IS ASSUMED TO FLOW DOWM BRIARGATE PARKWAY TO THE SUMP
876         KM   ADJACENT TO FACILITY #1
877         DT   AP25S
878         DI     461     464     475     500     525     550     575     600     625
879         DQ       0       1      14      39      64      89     114     139     164

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

884         KK  SB-PM8
885         KM   COMPUTE HYDROGRAPH FOR BASIN PM8 THE PORTION OF BRIARGATE PARKWAY BETWEEN
886         KM   EXPLORER DR. AND HIGHWAY 83
887         BA    .014
888         LS       0    98.0
889         UD    .100

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

894         KK RR-DF#1
895         KM   MODEL STORAGE VOLUME BASED ON 2001 AREAL TOPOGRAPHY.  OUTLET MODELED
896         KM   ASSUMING THE TOP 7.5' OF THE ENTRANCE TO THE 10'R X 12'S HIGH BOX CULVERT IS
897         KM   BLOCKED AND A NEW 12' WIDE OPENING IS CREATED W/ INVERT AT 67.2
898         KM   OUTFLOW CURVE CALCULATED WITH A SPREADSHEET TREATING THE LOWER OPENING AS
899         KM   A SUBMERGED ORIFICE WITH C=.60, h=POND DEPTH - NORMAL DEPTH IN THE OUTFALL
900         KM   AND THE UPPER OPENING TO ELEVATION 73.0 TREATED AS A SHARP CRESTED WEIR WITH
901         KM   A FULL LENGTH OF 12.77' (THE SKEW LENGTH) ADJUSTED 0.2h FOR END CONTRACTIONS
902         KM   AND C=3.22+0.40(h/P) WHERE P=14.2. ABOVE ELEVATION 73.0 THE TOP OUTLET
903         KM   STRUCTURE IS ASSUMED TO TERMINATE WITHOUT A TOP AND THUS ADDITIONAL FLOW CAN
904         KM   OVER TOP THE SIDES AND BACK OF THE ASSUMED 3 SIDED  STRUCTURE 12.77 x 10
905         KO       3       1
906         RS       1    STOR       0
907         SA       0    0.01    0.02    3.78    4.60    4.95    5.25    5.55    5.85    6.17
908         SA    6.55    6.76    6.98    7.23    7.49
909         SE    54.0    55.0    56.0    58.0    60.0    62.0    64.0    66.0    68.0    70.0
910         SE    72.0    73.0    74.0    75.0    76.0
911         SQ       0      99     184     261     326     380     427     470     532     718
912         SQ     969    1112    1264    1750    2100
913         KM   SQ    0, 105 ,  194,  275,  344,  401,  451,  496,  560,  747,  998, 1142, 12
914         KM   SQ 1750, 2100
```
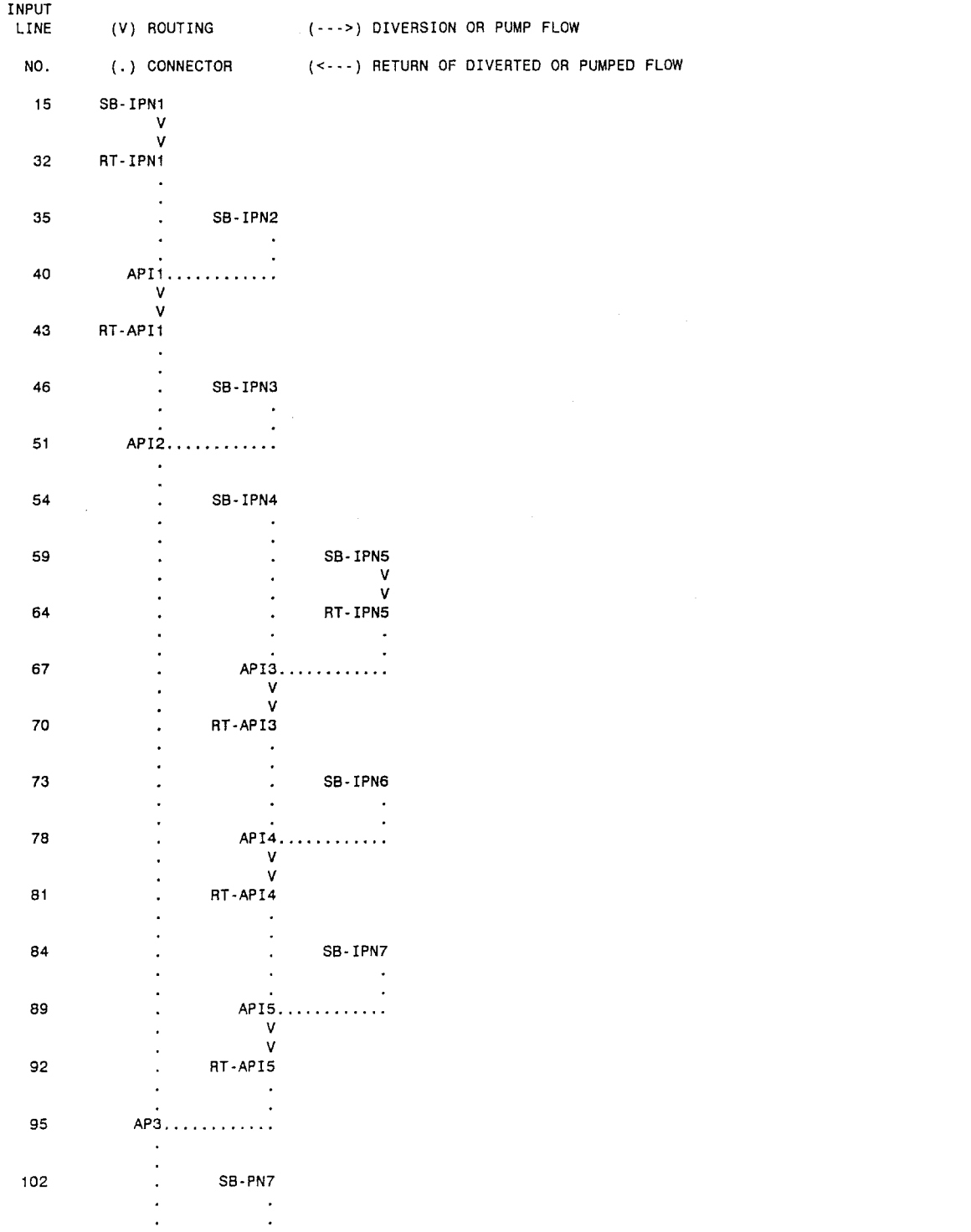


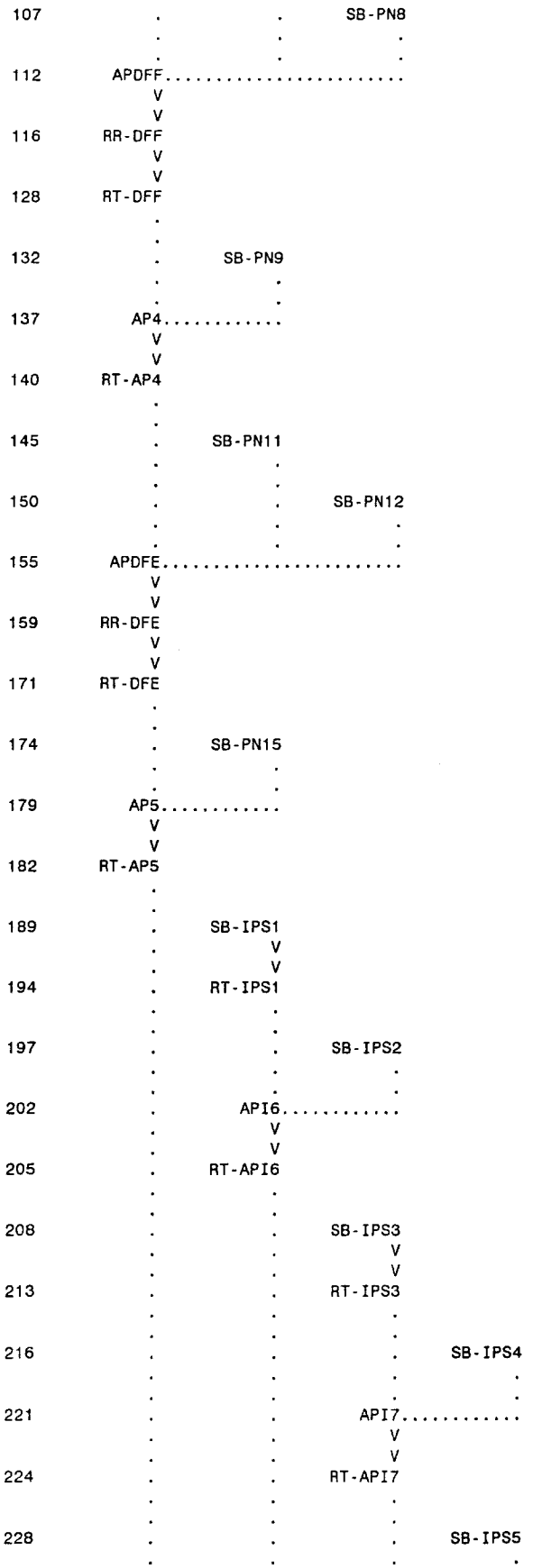

```
                                    HEC-1 INPUT

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


915         KK   AP25S
```

```
916          KM   RETRIEVE THE DIVERTED FLOW AT THE INTERSECTION OF BRIARGATE PARKWAY AND
917          KM   EXPLORER DRIVE. THIS IS FLOW IN THE STREET.
918          DR   AP25S

919          KKRT-AP25S
920          KM   ROUTE THE SURFACE FLOW IN BRIARGATE PARKWAY DOWN BRIARGATE PARKWAY TO PINE
921          KM   CREEK. ASSUME THIS FLOW ENTERS THE CHANNEL AT THE OUTLET FROM DETENTION
922          KM   FACILITY #1.
923          RD    1400    .043    .015            TRAP      75     .01

924          KK    AP26
925          KM   COMBINE ROUTED FLOW RT-AP25S TO THE OUTFLOW FROM DF#1 AT THE INTERSECTION OF
926          KM   BRIARGATE PKWY. AND PINE CREEK
927          HC      2

928          KK RT-AP26
929          KM   ROUTE THE COMBINED FLOW FROM AP26 AT BRIARGATE PARKWAY DOWN PINE CREEK TO
930          KM   AP-27 UPSTREM OF THE INTERSECTION OF PINE CREEK AND HIGHWAY 83. USE AVERAGE
931          KM   APPROXIMATE SECTION AND SLOPE FOR ROUTING
932          RD    1450    .019    .060            TRAP      40      2

933          KK  SB-PM9
934          KM   COMPUTE HYDROGRAPH FOR BASIN PM9
935          BA    .068
936          LS       0    83.5
937          UD    .146

938          KK    AP27
939          KM   COMBINE THE FLOW FROM BASIN PM9 AND THE ROUTED FLOW IN PINE CREEK (RT-AP26) A
940          KM   AT THE UPSTREAM SIDE  OF HIGHWAY 83.
941          HC      2

942          KK SB-PM10
943          KM   COMPUTE HYDROGRAPH FOR BASIN PM10
944          BA    .048
945          LS       0    98.0
946          UD     .12

947          KKRRDFPM10
948          KM   ROUTE FLOW THRU A POND ROUTING ROUTINE TO REFLECT REDUCTION IN PEAK FLOW
949          KM   RATE TO THE APPROXIMATE PEAK FLOW RATE DISCHARGE GOAL FROM THE BASIN
950          KM   AS SHOWN IN THE FINAL DRAINAGE REPORT FOR BRIARGATE BUSINESS CAMPUS
951          KM   FILING 13 AS APPROVED OCT 31, 1996
952          KM   THE ROUTING ROUTINE ONLY REGULATES THE PEAK DISCHARGE AND DOES NOT LAG
953          KM   THE DISCHARGE. THIS IS APPROPRIATE AS A PORTION OF THE BASIN MAY DISCHARGE
954          KM   DIRECTLY TO THE ADJACENT STREET AND STORM DRAIN.
955          KM   DISCHARGE FROM THE BASIN PER THE FINAL DRAINAGE REPORT=140 cfs
956          RS       1    STOR       0
957          SV       0     001      .6     1.5
958          SE     100     102     104     106
959          SQ       0     140     140     140                                          PAGE 23
                                    HEC-1 INPUT

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


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

964          KK SB-PM11
965          KM   COMPUTE HYDROGRAPH FOR BASIN PM11
966          BA    .042
967          LS       0    98.0
968          UD    .121

969          KK   AP24S
970          KM   RETRIEVE THE FLOW THAT WAS IN EXCESS OF THE STORM DRAIN CAPACITY AT THE
971          KM   INTERSECTION OF EXPLORER DRIVE AND TELSTAR DRIVE.(AP24S)
972          DR   AP24S

973          KKRT-AP24S
974          KM   ROUTE THE RETRIEVED FLOW FROM AP24 DOWN TELSTAR DRIVE TO THE SUMP THEN
975          KM   ACROSS BBC FILING 19 TO AP28 IN PINE CREEK.
976          RD    2200     .05    .015            TRAP      40      01
```

```
977           KK    AP28
978           KM    COMBINE THE FLOW FROM BASIN PM11 WITH THE ROUTED SURFACE FLOW FROM THE
979           KM    INTERSECTION OF TELSTAR DR. AND EXPLORER DRIVE (RT-AP24S), THE FLOW IN
980           KM    PINE CREEK AT AP27, AND THE ROUTED FLOW FROM BASIN PM10.
981           KM    FLOW IS COMBINED IN PINE CREEK AT THE UPSTREAM SIDE OF THE BOX CULVERT
982           KM    UNDER HIGHWAY 83. THIS REPRESENTS THE TOTAL FLOW TO PINE CREEK FROM THE
983           KM    BRIARGATE AREA
984           KO        3       1
985           HC        4
986           ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

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112 APDFF
116 RR-DFF
128 RT-DFF
132 SB-PN9
137 AP4
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159 RR-DFE
171 RT-DFE
174 SB-PN15
179 AP5
182 RT-AP5
189 SB-IPS1
194 RT-IPS1
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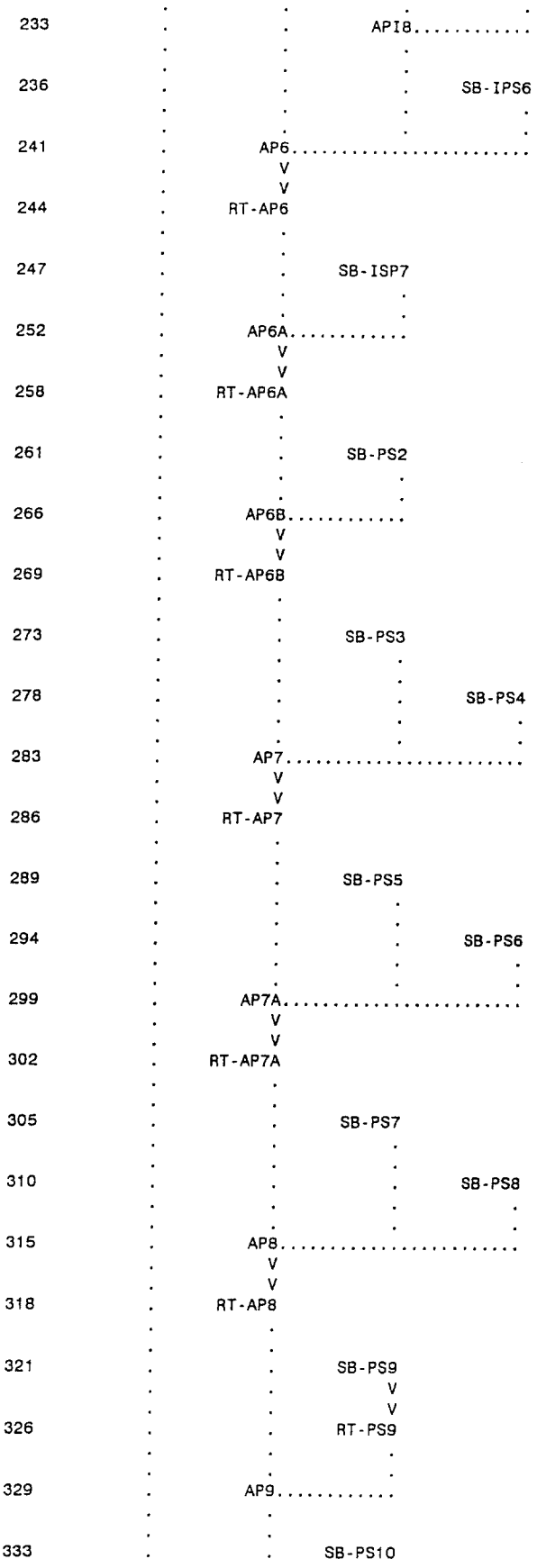
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API8
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SB-IPS6
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AP6
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RT-AP6
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261
SB-PS2
266
AP6B
269
RT-AP6B
273
SB-PS3
278
SB-PS4
283
AP7
286
RT-AP7
289
SB-PS5
294
SB-PS6
299
AP7A
302
RT-AP7A
305
SB-PS7
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SB-PS8
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AP8
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RT-AP8
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SB-PS9
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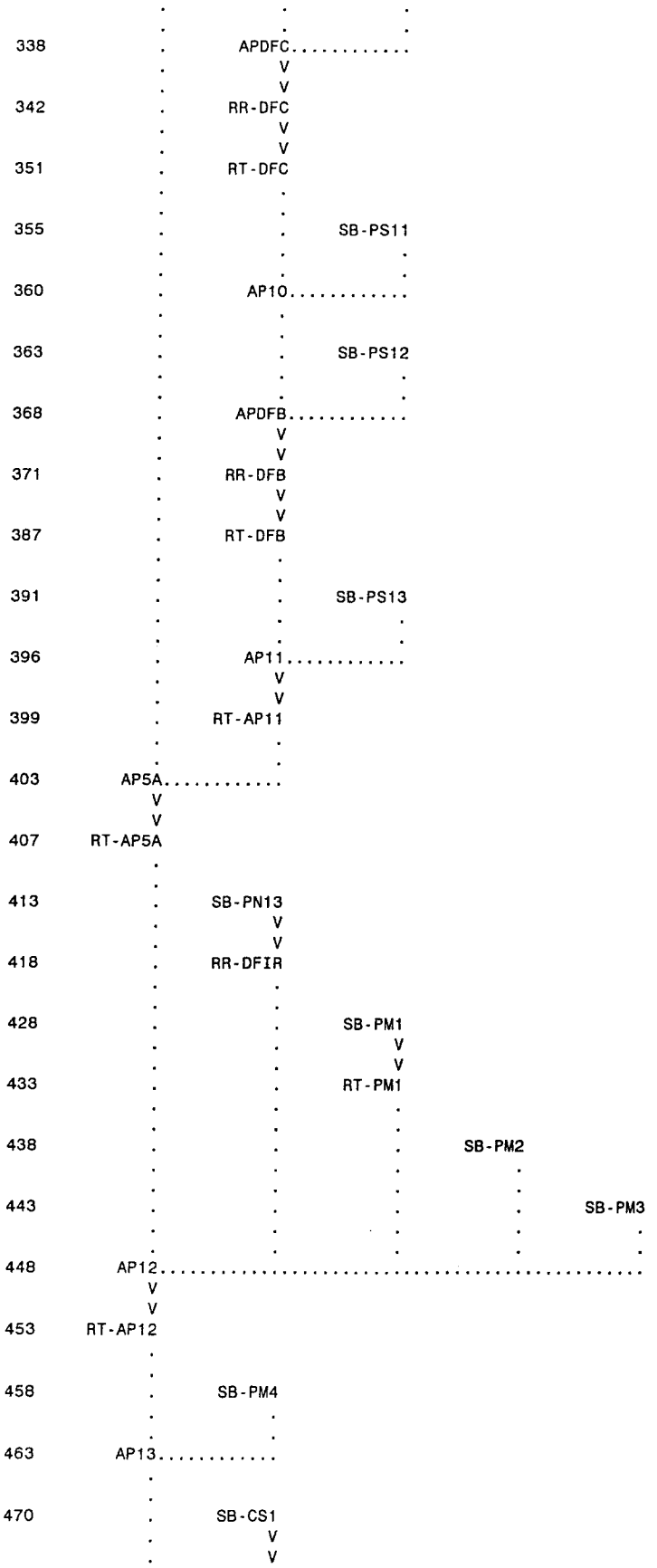
RT-PS9
329
AP9
333
SB-PS10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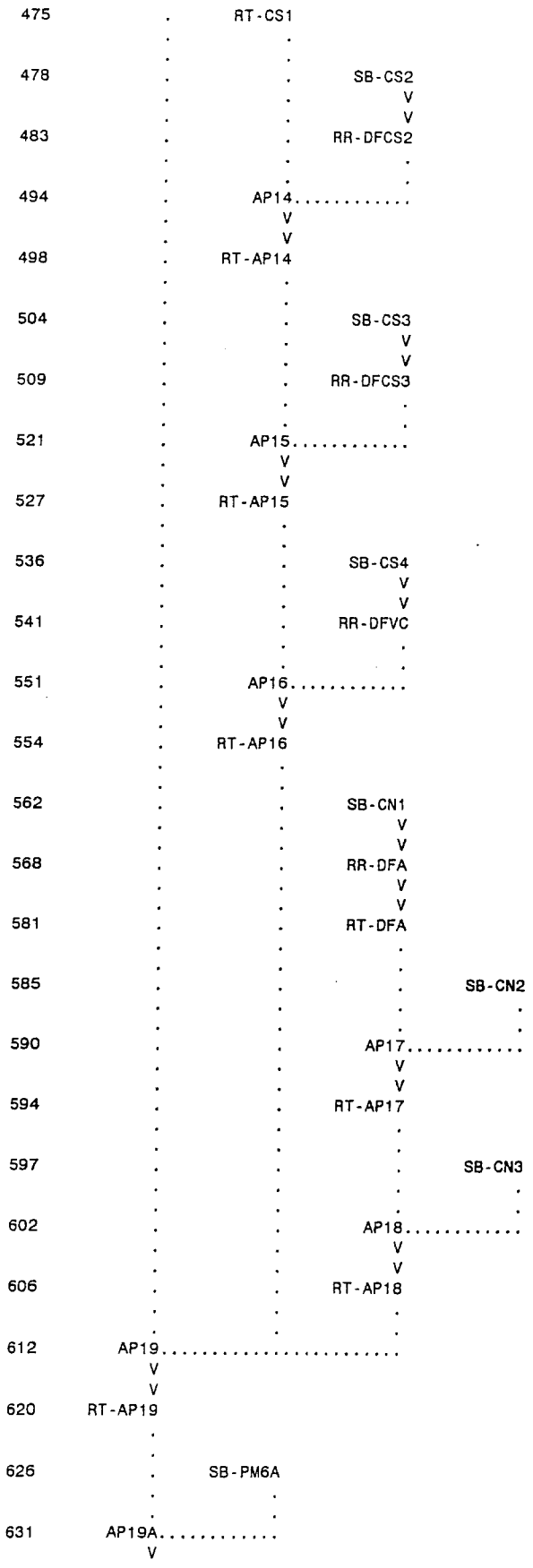
351 RT-DFC
355 SB-PS11
360 AP10
363 SB-PS12
368 APDFB
371 RR-DFB
387 RT-DFB
391 SB-PS13
396 AP11
399 RT-AP11
403 AP5A
407 RT-AP5A
413 SB-PN13
418 RR-DFIR
428 SB-PM1
433 RT-PM1
438 SB-PM2
443 SB-PM3
448 AP12
453 RT-AP12
458 SB-PM4
463 AP13
470 SB-CS1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SB-CS2
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AP14
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521
AP15
527
RT-AP15
536
SB-CS4
541
RR-DFVC
551
AP16
554
RT-AP16
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SB-CN1
568
RR-DFA
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RT-DFA
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AP17
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RT-AP17
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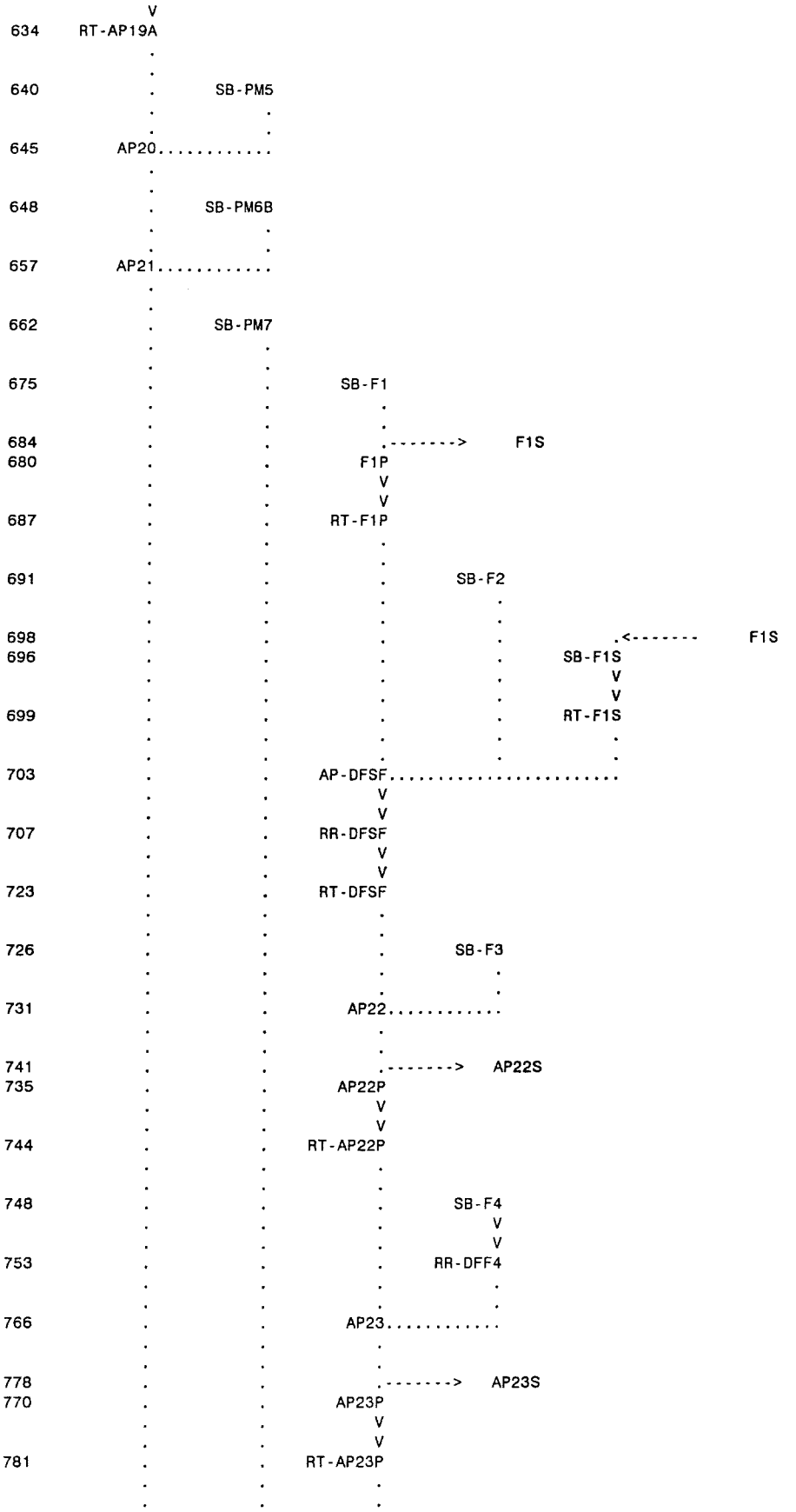
SB-PM6A
631
AP19A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691 SB-F2
698 F1S
696 SB-F1S
699 RT-F1S
703 AP-DFSF
707 RR-DFSF
723 RT-DFSF
726 SB-F3
731 AP22
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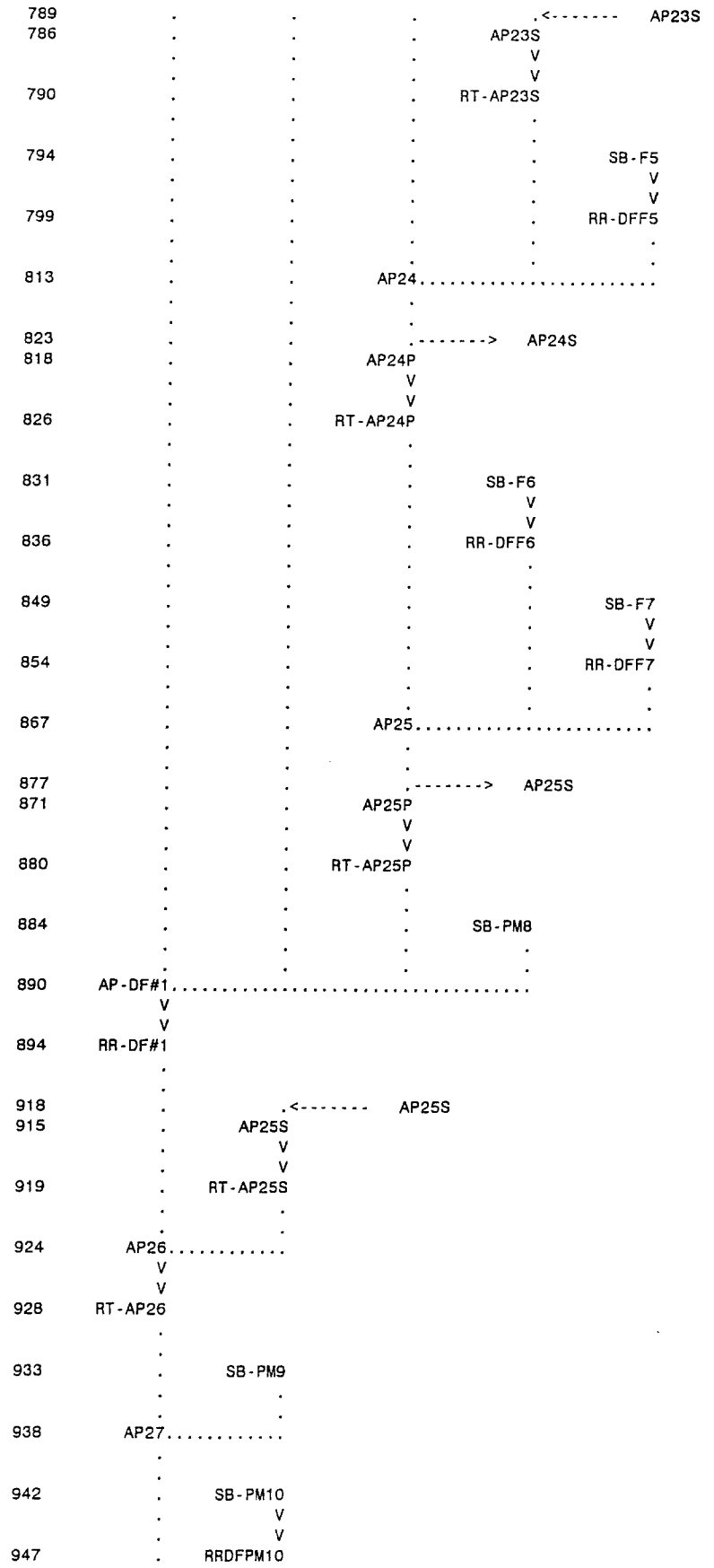
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RT-AP23S
SB-F5
RR-DFF5
AP24
AP24S
AP24P
RT-AP24P
SB-F6
RR-DFF6
SB-F7
RR-DFF7
AP25
AP25S
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RT-AP25P
SB-PM8
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AP26
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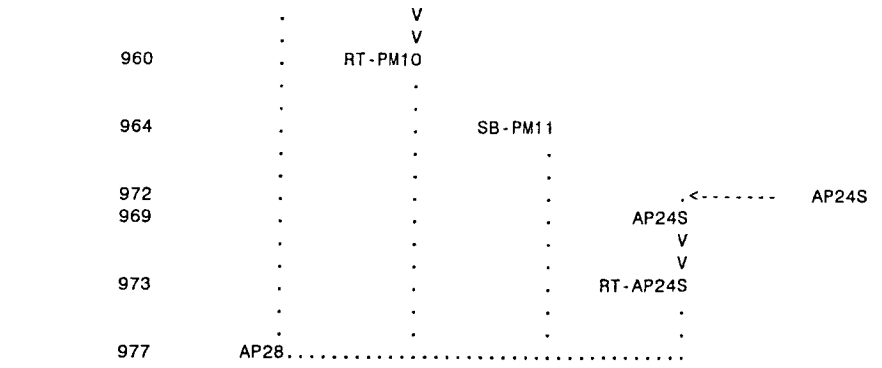
SB-PM9
AP27
SB-PM10
RRDFPM10



(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
HEC1 S/N: 1343000062 HMVersion: 6.33 Data File: PCINT100.DAT

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*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *                                       *    U.S. ARMY CORPS OF ENGINEERS
*                                       *                                       *
*              MAY   1991               *                                       *    HYDROLOGIC ENGINEERING CENTER
*                                       *                                       *
*            VERSION 4.0.1E             *                                       *         609 SECOND STREET
*                                       *                                       *
*                                       *                                       *       DAVIS, CALIFORNIA 95616
*                                       *                                       *
*  RUN DATE  09/27/2002  TIME  15:36:20 *                                       *           (916) 756-1104
*                                       *                                       *
*                                       *                                       *
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```

```
                    PINE CREEK DRAINAGE BASIN - 24HR, INTERIM CONDITION (TYPE IIa100 YEAR)
                    INTERIM CONDITION MODEL
                    ASSUMES POWERS BOULEVARD AND DOWNSTREAM AREA IN FULLY DEVELOPED CONDITION
                    AND LAND EAST OF POWERS IN THE EXISTING CONDITION
                    THIS IS A MODIFIED VERSION OF THE DBPS AMENDMENT 2 MODEL. THE MODEL HAS BEEN
                    REVISED IN AREAS THAT HAVE CHANGED SIGNIFICANTLY FROM THE AMENDMENT 2
                    ASSUMPTIONS. OTHER AREAS HAVE NOT BEEN CHANGED
                    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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          **************
          *            *
116 KK    *   RR-DFF   *
          *            *
          **************
```

123 KO OUTPUT CONTROL VARIABLES

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

HYDROGRAPH ROUTING DATA

124 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

125 SV	STORAGE	0.0	0.2	2.6	8.1	15.4	23.7	32.6	42.4	53.1	64.8
126 SE	ELEVATION	13.00	14.00	16.00	18.00	20.00	22.00	24.00	26.00	28.00	30.00
127 SQ	DISCHARGE	5.	30.	93.	122.	146.	166.	184.	201.	216.	230.

***

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

HYDROGRAPH AT STATION RR-DFF

PEAK FLOW	TIME		MAXIMUM AVERAGE FLOW			
			6-HR	24-HR	72-HR	14.95-HR
(CFS)	(HR)					
		(CFS)				
162.	6.90		105.	49.	49.	49.
		(INCHES)	1.211	1.402	1.402	1.402
		(AC-FT)	52.	60.	60.	60.

PEAK STORAGE	TIME		MAXIMUM AVERAGE STORAGE			
			6-HR	24-HR	72-HR	14.95-HR
(AC-FT)	(HR)					
22.	6.90		9.	4.	4.	4.

PEAK STAGE	TIME		MAXIMUM AVERAGE STAGE			
			6-HR	24-HR	72-HR	14.95-HR
(FEET)	(HR)					
21.63	6.90		17.68	15.02	15.02	15.02

CUMULATIVE AREA = 0.81 SQ MI

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***

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                **************
                *            *
   159 KK       *   RR-DFE   *
                *            *
                **************

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

                   HYDROGRAPH ROUTING DATA

   167 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

   168 SV              STORAGE         0.0       0.3       2.0       4.9       8.3      12.0      16.1      20.6      25.5      30.9

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

   170 SQ            DISCHARGE          0.       26.       80.      133.      173.      208.      238.      260.      278.     1441.

                                                                  ***

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

                              HYDROGRAPH AT STATION   RR-DFE

   PEAK FLOW      TIME                               MAXIMUM AVERAGE FLOW
                                            6-HR        24-HR        72-HR      14.95-HR
     (CFS)        (HR)
                               (CFS)
       217.       6.75                       155.          71.          71.          71.
                             (INCHES)       1.314        1.501        1.501        1.501
                              (AC-FT)         77.          88.          88.          88.

 PEAK STORAGE     TIME                               MAXIMUM AVERAGE STORAGE
                                            6-HR        24-HR        72-HR      14.95-HR
   (AC-FT)        (HR)
       13.        6.75                         8.           3.           3.           3.

   PEAK STAGE     TIME                               MAXIMUM AVERAGE STAGE
                                            6-HR        24-HR        72-HR      14.95-HR
    (FEET)        (HR)
    794.62        6.75                     791.43       787.61       787.61       787.61

                             CUMULATIVE AREA =     1.10 SQ MI


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

                **************
                *            *
   342 KK       *   RR-DFC   *
                *            *
                **************

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

                   HYDROGRAPH ROUTING DATA

   347 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

348 SV          STORAGE          0.0       1.1       7.7      16.9      26.9      37.7      49.2      61.5      74.5      88.4

349 SE          ELEVATION       63.00     64.00     66.00     68.00     70.00     72.00     74.00     76.00     78.00     80.00

350 SQ          DISCHARGE        6.        23.       70.      110.      140.      168.      190.      215.      232.      245.

                                                                ***

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

                        HYDROGRAPH AT STATION   RR-DFC

 PEAK FLOW     TIME                                MAXIMUM AVERAGE FLOW
                                        6-HR        24-HR        72-HR      14.95-HR
   (CFS)       (HR)
                          (CFS)
     222.      6.90                     182.         96.          96.          96.
                          (INCHES)     1.462        1.916        1.916        1.916
                          (AC-FT)       90.         118.         118.         118.

PEAK STORAGE   TIME                              MAXIMUM AVERAGE STORAGE
                                        6-HR        24-HR        72-HR      14.95-HR
   (AC-FT)     (HR)
      67.      6.90                      46.         21.          21.          21.

 PEAK STAGE    TIME                              MAXIMUM AVERAGE STAGE
                                        6-HR        24-HR        72-HR      14.95-HR
   (FEET)      (HR)
     76.85      6.90                    73.34       68.07        68.07        68.07

                        CUMULATIVE AREA =    1.15 SQ MI


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

              **************
              *            *
371 KK        *   RR-DFB   *
              *            *
              **************

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

                HYDROGRAPH ROUTING DATA

380 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

381 SV            STORAGE         0.0       0.1       0.7       2.5       5.1       8.1      11.4      15.2      19.5      23.2
                                 24.8      30.0

383 SE            ELEVATION      70.60     72.00     74.00     76.00     78.00     80.00     82.00     84.00     86.00     87.60
                                 88.00     90.00

385 SQ            DISCHARGE       0.        20.       86.      117.      142.      163.      181.      198.      213.      225.
                                289.      1133.

                                                                ***

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

```
                    HYDROGRAPH AT STATION   RR-DFB

 PEAK FLOW      TIME                         MAXIMUM AVERAGE FLOW
                                  6-HR        24-HR        72-HR       14.95-HR
   (CFS)        (HR)
                        (CFS)
    210.        8.50               198.         110.         110.          110.
                      (INCHES)    1.352        1.876        1.876         1.876
                       (AC-FT)      98.         136.         136.          136.

PEAK STORAGE    TIME                         MAXIMUM AVERAGE STORAGE
                                  6-HR        24-HR        72-HR       14.95-HR
  (AC-FT)       (HR)
     19.        8.45                16.           7.           7.            7.

 PEAK STAGE     TIME                         MAXIMUM AVERAGE STAGE
                                  6-HR        24-HR        72-HR       14.95-HR
   (FEET)       (HR)
   85.61        8.50              84.08        77.64        77.64         77.64

                       CUMULATIVE AREA =     1.36 SQ MI

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

              **************
              *            *
 418 KK       *   RR-DFIR  *
              *            *
              **************

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

                 HYDROGRAPH ROUTING DATA

 424 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

 425 SV              STORAGE          0.0        3.5        10.0

 426 SE            ELEVATION       899.50     902.00      903.00

 427 SQ            DISCHARGE           0.         1.          2.

                                                                   ***

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

                    HYDROGRAPH AT STATION  RR-DFIR

 PEAK FLOW      TIME                         MAXIMUM AVERAGE FLOW
                                  6-HR        24-HR        72-HR       14.95-HR
   (CFS)        (HR)
                        (CFS)
      1.       14.90                 1.           0.           0.            0.
                      (INCHES)    0.136        0.187        0.187         0.187
                       (AC-FT)       0.           0.           0.            0.

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

 PEAK STAGE     TIME                         MAXIMUM AVERAGE STAGE
                                  6-HR        24-HR        72-HR       14.95-HR
   (FEET)       (HR)
  901.23       14.95             901.14       900.41       900.41        900.41

                       CUMULATIVE AREA =     0.05 SQ MI
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          *            *
568 KK    *   RR-DFA   *
          *            *
          **************

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

            HYDROGRAPH ROUTING DATA

574 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

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

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

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

                                                             ***

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

                        HYDROGRAPH AT STATION   RR-DFA

PEAK FLOW      TIME                        MAXIMUM AVERAGE FLOW
                                  6-HR        24-HR        72-HR      14.95-HR
  (CFS)        (HR)
                          (CFS)
     9.        8.15                 9.           6.           6.            6.
                       (INCHES)  0.729        1.278        1.278         1.278
                        (AC-FT)     4.           7.           7.            7.

PEAK STORAGE   TIME                        MAXIMUM AVERAGE STORAGE
                                  6-HR        24-HR        72-HR      14.95-HR
 (AC-FT)       (HR)
     9.        8.20                 8.           5.           5.            5.

PEAK STAGE     TIME                        MAXIMUM AVERAGE STAGE
                                  6-HR        24-HR        72-HR      14.95-HR
  (FEET)       (HR)
 6804.78       8.20            6804.62      6801.41      6801.41       6801.41

                        CUMULATIVE AREA =     0.11 SQ MI
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          **************
          *            *
657 KK    *    AP21    *
          *            *
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660 KO        OUTPUT CONTROL VARIABLES
                    IPRNT          5  PRINT CONTROL
                    IPLOT          1  PLOT CONTROL
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                 QSCAL          0.  HYDROGRAPH PLOT SCALE

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          *            *
 707 KK   *   RR-DFSF  *
          *            *
          **************

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

              HYDROGRAPH ROUTING DATA

 719 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

 720 SV             STORAGE        0.0        0.6        4.6        6.9       10.3

 721 SE           ELEVATION      92.00      94.00      96.00      98.00     100.00

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

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

                        HYDROGRAPH AT STATION  RR-DFSF

 PEAK FLOW      TIME                               MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      14.95-HR
   (CFS)        (HR)
                            (CFS)
    130.        6.35                  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
                                      6-HR        24-HR        72-HR      14.95-HR
  (AC-FT)       (HR)
       4.       6.35                    0.           0.           0.           0.

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

                      CUMULATIVE AREA =     0.16 SQ MI

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              *            *
 894 KK       *   RR-DF#1  *
              *            *
              **************

 905 KO            OUTPUT CONTROL VARIABLES
                         IPRNT            3  PRINT CONTROL
                         IPLOT            1  PLOT CONTROL
                         QSCAL           0.  HYDROGRAPH PLOT SCALE
                             SQ    0, 105 ,  194,  275,  344,  401,  451,  496,  560,  747,  998, 1142, 12
                             SQ 1750, 2100

                 HYDROGRAPH ROUTING DATA

 906 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

 907 SA                 AREA        0.0        0.0        0.0        3.8        4.6        4.9        5.3        5.6        5.8        6.2
                                    6.6        6.8        7.0        7.2        7.5

 909 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

 911 SQ            DISCHARGE         0.        99.       184.       261.       326.       380.       427.       470.       532.       718.
                                   969.      1112.      1264.      1750.      2100.

                                                                 ***

                                                   COMPUTED STORAGE-ELEVATION DATA

            STORAGE       0.00       0.00       0.02       2.73      11.10      20.65      30.85      41.65      53.04      65.06
          ELEVATION      54.00      55.00      56.00      58.00      60.00      62.00      64.00      66.00      68.00      70.00

            STORAGE      77.78      84.44      91.31      98.41     105.77
          ELEVATION      72.00      73.00      74.00      75.00      76.00

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN        0. TO       184.
                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.)

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

                            HYDROGRAPH AT STATION  RR-DF#1

 PEAK FLOW      TIME                                MAXIMUM AVERAGE FLOW
                                       6-HR         24-HR         72-HR       14.95-HR
   (CFS)        (HR)
                             (CFS)
    1143.       6.60                    721.          437.          437.          437.
                          (INCHES)     1.520         2.297         2.297         2.297
                           (AC-FT)      357.          540.          540.          540.

PEAK STORAGE    TIME                              MAXIMUM AVERAGE STORAGE
                                       6-HR         24-HR         72-HR       14.95-HR
  (AC-FT)       (HR)
      86.       6.60                     64.           33.           33.           33.

 PEAK STAGE     TIME                               MAXIMUM AVERAGE STAGE
                                       6-HR         24-HR         72-HR       14.95-HR
   (FEET)       (HR)
   73.20        6.60                   69.74         63.18         63.18         63.18

                            CUMULATIVE AREA =     4.41 SQ MI


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          *            *
977 KK    *      AP28  *
          *            *
          **************

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

985 HC          HYDROGRAPH COMBINATION
                     ICOMP           4  NUMBER OF HYDROGRAPHS TO COMBINE

                                                                  ***

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

                       HYDROGRAPH AT STATION     AP28

PEAK FLOW     TIME                              MAXIMUM AVERAGE FLOW
                                      6-HR        24-HR        72-HR      14.95-HR
  (CFS)       (HR)
                        (CFS)
   1188.      6.60                    776.         466.         466.         466.
                       (INCHES)      1.581        2.364        2.364        2.364
                        (AC-FT)        385.         576.         576.         576.

                       CUMULATIVE AREA =    4.57 SQ MI
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100 YEAR, 24 HOUR, INTERIM
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			BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
				6-HOUR	24-HOUR	72-HOUR			
HYDROGRAPH AT	SB-IPN1	111.	6.25	18.	8.	8.	0.16		
ROUTED TO	RT-IPN1	110.	6.40	18.	8.	8.	0.16		
HYDROGRAPH AT	SB-IPN2	140.	6.30	23.	11.	11.	0.23		
2 COMBINED AT	API1	239.	6.35	41.	18.	18.	0.38		
ROUTED TO	RT-API1	240.	6.40	41.	18.	18.	0.38		
HYDROGRAPH AT	SB-IPN3	101.	6.15	13.	6.	6.	0.10		
2 COMBINED AT	API2	287.	6.40	53.	24.	24.	0.49		
HYDROGRAPH AT	SB-IPN4	70.	6.20	10.	5.	5.	0.10		
HYDROGRAPH AT	SB-IPN5	37.	6.15	5.	2.	2.	0.05		
ROUTED TO	RT-IPN5	37.	6.15	5.	2.	2.	0.05		
2 COMBINED AT	API3	106.	6.20	15.	7.	7.	0.15		
ROUTED TO	RT-API3	106.	6.20	15.	7.	7.	0.15		
HYDROGRAPH AT	SB-IPN6	79.	6.05	8.	3.	3.	0.03		
2 COMBINED AT	API4	162.	6.10	23.	10.	10.	0.18		
ROUTED TO	RT-API4	158.	6.15	23.	10.	10.	0.18		
HYDROGRAPH AT	SB-IPN7	41.	6.15	5.	2.	2.	0.03		
2 COMBINED AT	API5	199.	6.15	28.	12.	12.	0.21		
ROUTED TO	RT-API5	199.	6.15	28.	12.	12.	0.21		
2 COMBINED AT	AP3	426.	6.30	81.	36.	36.	0.70		
HYDROGRAPH AT	SB-PN7	119.	6.10	13.	6.	6.	0.07		
HYDROGRAPH AT	SB-PN8	110.	6.00	11.	5.	5.	0.04		
3 COMBINED AT	APDFF	556.	6.15	105.	47.	47.	0.81		
ROUTED TO									

	RR-DFF	162.	6.90	105.	49.	49.	0.81	21.63	6.90
ROUTED TO	RT-DFF	162.	7.00	105.	49.	49.	0.81		
HYDROGRAPH AT	SB-PN9	152.	6.10	17.	8.	8.	0.11		
2 COMBINED AT	AP4	254.	6.15	122.	56.	56.	0.92		
ROUTED TO	RT-AP4	253.	6.20	122.	56.	56.	0.92		
HYDROGRAPH AT	SB-PN11	170.	6.10	19.	8.	8.	0.08		
HYDROGRAPH AT	SB-PN12	142.	6.10	16.	7.	7.	0.10		
3 COMBINED AT	APDFE	541.	6.15	157.	72.	72.	1.10		
ROUTED TO	RR-DFE	217.	6.75	155.	71.	71.	1.10	794.62	6.75
ROUTED TO	RT-DFE	217.	6.75	155.	71.	71.	1.10		
HYDROGRAPH AT	SB-PN15	112.	6.10	12.	5.	5.	0.07		
2 COMBINED AT	AP5	261.	6.15	167.	77.	77.	1.17		
ROUTED TO	RT-AP5	261.	6.15	167.	77.	77.	1.17		
HYDROGRAPH AT	SB-IPS1	81.	6.25	13.	6.	6.	0.13		
ROUTED TO	RT-IPS1	80.	6.40	13.	6.	6.	0.13		
HYDROGRAPH AT	SB-IPS2	61.	6.20	9.	4.	4.	0.08		
2 COMBINED AT	API6	129.	6.30	21.	10.	10.	0.21		
ROUTED TO	RT-API6	129.	6.30	21.	10.	10.	0.21		
HYDROGRAPH AT	SB-IPS3	88.	6.15	11.	5.	5.	0.11		
ROUTED TO	RT-IPS3	86.	6.30	11.	5.	5.	0.11		
HYDROGRAPH AT	SB-IPS4	119.	6.20	17.	8.	8.	0.17		
2 COMBINED AT	API7	194.	6.25	28.	13.	13.	0.28		
ROUTED TO	RT-API7	194.	6.30	28.	13.	13.	0.28		
HYDROGRAPH AT	SB-IPS5	29.	6.20	4.	2.	2.	0.04		
2 COMBINED AT	API8	220.	6.30	32.	15.	15.	0.32		
HYDROGRAPH AT									

	SB-IPS6	81.	6.25	13.	6.	6.	0.12
3 COMBINED AT	AP6	429.	6.30	67.	30.	30.	0.64
ROUTED TO	RT-AP6	428.	6.30	67.	30.	30.	0.64
HYDROGRAPH AT	SB-ISP7	70.	6.10	8.	4.	4.	0.03
2 COMBINED AT	AP6A	466.	6.30	75.	34.	34.	0.67
ROUTED TO	RT-AP6A	466.	6.30	75.	34.	34.	0.67
HYDROGRAPH AT	SB-PS2	71.	6.05	8.	3.	3.	0.02
2 COMBINED AT	AP6B	486.	6.25	82.	37.	37.	0.69
ROUTED TO	RT-AP6B	484.	6.30	82.	37.	37.	0.69
HYDROGRAPH AT	SB-PS3	252.	6.00	28.	12.	12.	0.07
HYDROGRAPH AT	SB-PS4	125.	6.05	13.	6.	6.	0.06
3 COMBINED AT	AP7	659.	6.10	123.	55.	55.	0.82
ROUTED TO	RT-AP7	659.	6.10	123.	55.	55.	0.82
HYDROGRAPH AT	SB-PS5	105.	6.00	12.	5.	5.	0.03
HYDROGRAPH AT	SB-PS6	190.	6.00	21.	9.	9.	0.05
3 COMBINED AT	AP7A	936.	6.05	155.	69.	69.	0.90
ROUTED TO	RT-AP7A	932.	6.05	155.	69.	69.	0.90
HYDROGRAPH AT	SB-PS7	112.	6.00	13.	5.	5.	0.03
HYDROGRAPH AT	SB-PS8	274.	6.05	29.	13.	13.	0.11
3 COMBINED AT	AP8	1312.	6.05	197.	88.	88.	1.05
ROUTED TO	RT-AP8	1311.	6.05	197.	88.	88.	1.05
HYDROGRAPH AT	SB-PS9	171.	6.00	18.	8.	8.	0.05
ROUTED TO	RT-PS9	169.	6.00	18.	8.	8.	0.05
2 COMBINED AT	AP9	1477.	6.05	215.	95.	95.	1.10
HYDROGRAPH AT	SB-PS10	90.	6.05	10.	4.	4.	0.05
2 COMBINED AT	APDFC	1567.	6.05	224.	100.	100.	1.15

ROUTED TO	RR-DFC	222.	6.90	182.	96.	96.	1.15	76.85	6.90
ROUTED TO	RT-DFC	222.	6.90	182.	95.	95.	1.15		
HYDROGRAPH AT	SB-PS11	121.	6.05	13.	6.	6.	0.05		
2 COMBINED AT	AP10	286.	6.10	193.	101.	101.	1.21		
HYDROGRAPH AT	SB-PS12	189.	6.10	23.	10.	10.	0.15		
2 COMBINED AT	APDFB	474.	6.10	216.	111.	111.	1.36		
ROUTED TO	RR-DFB	210.	8.50	198.	110.	110.	1.36	85.61	8.50
ROUTED TO	RT-DFB	210.	8.50	198.	110.	110.	1.36		
HYDROGRAPH AT	SB-PS13	123.	6.05	12.	5.	5.	0.06		
2 COMBINED AT	AP11	260.	6.10	207.	116.	116.	1.43		
ROUTED TO	RT-AP11	260.	6.10	207.	116.	116.	1.43		
2 COMBINED AT	AP5A	513.	6.10	373.	192.	192.	2.60		
ROUTED TO	RT-AP5A	513.	6.15	373.	191.	191.	2.60		
HYDROGRAPH AT	SB-PN13	42.	6.15	5.	2.	2.	0.05		
ROUTED TO	RR-DFIR	1.	14.90	1.	0.	0.	0.05	901.23	14.95
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	193.	6.20	27.	12.	12.	0.19		
HYDROGRAPH AT	SB-PM3	77.	6.15	9.	4.	4.	0.06		
5 COMBINED AT	AP12	881.	6.15	421.	213.	213.	2.94		
ROUTED TO	RT-AP12	880.	6.20	421.	212.	212.	2.94		
HYDROGRAPH AT	SB-PM4	180.	6.05	19.	8.	8.	0.11		
2 COMBINED AT	AP13	998.	6.20	438.	220.	220.	3.05		
HYDROGRAPH AT	SB-CS1	91.	6.05	10.	4.	4.	0.05		
ROUTED TO	RT-CS1	91.	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	285.	6.10	38.	17.	17.	0.12		
ROUTED TO	RT-AP14	284.	6.10	38.	17.	17.	0.12		
HYDROGRAPH AT	SB-CS3	134.	6.05	15.	6.	6.	0.05		
ROUTED TO	RR-DFCS3	123.	6.00	15.	6.	6.	0.05	102.03	6.10
2 COMBINED AT	AP15	407.	6.10	53.	23.	23.	0.17		
ROUTED TO	RT-AP15	407.	6.10	53.	23.	23.	0.17		
HYDROGRAPH AT	SB-CS4	188.	6.00	19.	8.	8.	0.07		
ROUTED TO	RR-DFVC	28.	6.35	19.	8.	8.	0.07	79.94	6.35
2 COMBINED AT	AP16	433.	6.10	72.	32.	32.	0.24		
ROUTED TO	RT-AP16	433.	6.10	72.	32.	32.	0.24		
HYDROGRAPH AT	SB-CN1	222.	6.05	24.	11.	11.	0.11		
ROUTED TO	RR-DFA	9.	8.15	9.	6.	6.	0.11	6804.78	8.20
ROUTED TO	RT-DFA	9.	8.15	9.	6.	6.	0.11		
HYDROGRAPH AT	SB-CN2	136.	6.10	15.	7.	7.	0.08		
2 COMBINED AT	AP17	141.	6.10	24.	13.	13.	0.19		
ROUTED TO	RT-AP17	139.	6.10	24.	13.	13.	0.19		
HYDROGRAPH AT	SB-CN3	98.	6.05	10.	4.	4.	0.04		
2 COMBINED AT	AP18	231.	6.10	34.	17.	17.	0.23		
ROUTED TO	RT-AP18	231.	6.10	34.	17.	17.	0.23		
3 COMBINED AT	AP19	1638.	6.15	535.	269.	269.	3.52		
ROUTED TO	RT-AP19	1623.	6.15	535.	268.	268.	3.52		
HYDROGRAPH AT	SB-PM6A	132.	6.00	14.	6.	6.	0.04		

2 COMBINED AT	AP19A	1702.	6.15	548.	274.	274.	3.56	
ROUTED TO	RT-AP19A	1682.	6.20	548.	273.	273.	3.56	
HYDROGRAPH AT	SB-PM5	286.	6.10	31.	14.	14.	0.19	
2 COMBINED AT	AP20	1917.	6.15	578.	287.	287.	3.76	
HYDROGRAPH AT	SB-PM6B	130.	6.00	15.	6.	6.	0.04	
2 COMBINED AT	AP21	1981.	6.15	590.	294.	294.	3.79	
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	34.	6.10	2.	1.	1.	0.00		
HYDROGRAPH AT	SB-F5	199.	6.00	20.	9.	9.	0.06		
ROUTED TO	RR-DFF5	158.	5.85	20.	9.	9.	0.06		
								102.19	6.10
3 COMBINED AT	AP24	490.	6.10	173.	143.	143.	0.37		
DIVERSION TO	AP24S	140.	5.85	8.	3.	3.	0.37		
HYDROGRAPH AT	AP24P	350.	5.85	165.	140.	140.	0.37		
ROUTED TO	RT-AP24P	350.	5.90	165.	140.	140.	0.37		
HYDROGRAPH AT	SB-F6	131.	6.00	14.	6.	6.	0.04		
ROUTED TO	RR-DFF6	102.	5.75	14.	6.	6.	0.04		
								102.17	6.10
HYDROGRAPH AT	SB-F7	164.	6.00	17.	7.	7.	0.05		
ROUTED TO	RR-DFF7	129.	5.85	18.	8.	8.	0.05		
								102.18	6.10
3 COMBINED AT	AP25	581.	5.90	196.	153.	153.	0.46		
DIVERSION TO	AP25S	120.	5.75	10.	4.	4.	0.46		
HYDROGRAPH AT	AP25P	461.	5.75	186.	150.	150.	0.46		
ROUTED TO	RT-AP25P	461.	5.80	186.	150.	150.	0.46		
HYDROGRAPH AT	SB-PM8	51.	6.00	6.	3.	3.	0.01		
4 COMBINED AT	AP-DF#1	2645.	6.15	808.	458.	458.	4.41		
ROUTED TO	RR-DF#1	1143.	6.60	721.	437.	437.	4.41		
								73.20	6.60
HYDROGRAPH AT	AP25S	120.	5.90	10.	4.	4.	0.00		
ROUTED TO	RT-AP25S	121.	5.90	10.	4.	4.	0.00		
2 COMBINED AT									

	AP26	1143.	6.60	726.	441.	441.	4.41	
ROUTED TO								
	RT-AP26	1142.	6.65	726.	439.	439.	4.41	
HYDROGRAPH AT								
	SB-PM9	176.	6.05	18.	8.	8.	0.07	
2 COMBINED AT								
	AP27	1158.	6.60	739.	447.	447.	4.48	
HYDROGRAPH AT								
	SB-PM10	173.	6.00	20.	9.	9.	0.05	
ROUTED TO								
	RRDFPM10	140.	5.85	20.	9.	9.	0.05	
							106.08	6.10
ROUTED TO								
	RT-PM10	140.	5.90	20.	9.	9.	0.05	
HYDROGRAPH AT								
	SB-PM11	152.	6.00	17.	8.	8.	0.04	
HYDROGRAPH AT								
	AP24S	140.	6.10	8.	3.	3.	0.00	
ROUTED TO								
	RT-AP24S	140.	6.15	8.	3.	3.	0.00	
4 COMBINED AT								
	AP28	1188.	6.60	776.	466.	466.	4.57	

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-IPN1	MANE	1.95	110.72	386.10	1.16	3.00	110.03	384.00	1.16

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9794E+01 EXCESS=0.0000E+00 OUTFLOW=0.9682E+01 BASIN STORAGE=0.2020E+00 PERCENT ERROR= -0.9

RT-API1	MANE	2.40	239.97	384.00	1.10	3.00	239.97	384.00	1.10

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2272E+02 EXCESS=0.0000E+00 OUTFLOW=0.2263E+02 BASIN STORAGE=0.1538E+00 PERCENT ERROR= -0.3

RT-IPN5	MANE	0.39	37.13	369.24	1.07	3.00	37.00	369.00	1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2631E+01 EXCESS=0.0000E+00 OUTFLOW=0.2630E+01 BASIN STORAGE=0.1172E-02 PERCENT ERROR= 0.0

RT-API3	MANE	0.38	106.00	372.38	1.07	3.00	105.83	372.00	1.07

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8393E+01 EXCESS=0.0000E+00 OUTFLOW=0.8390E+01 BASIN STORAGE=0.3553E-02 PERCENT ERROR= 0.0

RT-API4	MANE	1.74	158.31	368.79	1.31	3.00	157.96	369.00	1.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1267E+02 EXCESS=0.0000E+00 OUTFLOW=0.1264E+02 BASIN STORAGE=0.2229E-01 PERCENT ERROR= 0.1

RT-API5	MANE	0.22	198.79	369.22	1.37	3.00	198.67	369.00	1.37

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1536E+02 EXCESS=0.0000E+00 OUTFLOW=0.1536E+02 BASIN STORAGE=0.3435E-02 PERCENT ERROR= 0.0

RT-DFF MANE 3.00 162.27 420.00 1.40 3.00 162.27 420.00 1.40

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6032E+02 EXCESS=0.0000E+00 OUTFLOW=0.6004E+02 BASIN STORAGE=0.3119E+00 PERCENT ERROR= 0.0

RT-AP4 MANE 1.80 253.89 370.80 1.42 3.00 253.04 372.00 1.42

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6954E+02 EXCESS=0.0000E+00 OUTFLOW=0.6938E+02 BASIN STORAGE=0.1828E+00 PERCENT ERROR= 0.0

RT-DFE MANE 1.03 217.34 406.33 1.50 3.00 217.31 405.00 1.50

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8806E+02 EXCESS=0.0000E+00 OUTFLOW=0.8800E+02 BASIN STORAGE=0.6557E-01 PERCENT ERROR= 0.0

RT-AP5 MANE 0.10 261.17 369.19 1.52 3.00 261.02 369.00 1.52

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9458E+02 EXCESS=0.0000E+00 OUTFLOW=0.9457E+02 BASIN STORAGE=0.6725E-02 PERCENT ERROR= 0.0

RT-IPS1 MANE 1.95 80.89 382.20 1.06 3.00 80.07 384.00 1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7181E+01 EXCESS=0.0000E+00 OUTFLOW=0.7115E+01 BASIN STORAGE=0.9643E-01 PERCENT ERROR= -0.4

RT-API6 MANE 0.17 129.33 378.28 1.09 3.00 129.07 378.00 1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1193E+02 EXCESS=0.0000E+00 OUTFLOW=0.1193E+02 BASIN STORAGE=0.2226E-02 PERCENT ERROR= 0.0

RT-IPS3 MANE 1.65 86.86 379.50 1.06 3.00 86.34 378.00 1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6234E+01 EXCESS=0.0000E+00 OUTFLOW=0.6162E+01 BASIN STORAGE=0.1062E+00 PERCENT ERROR= -0.6

RT-API7 MANE 1.26 194.09 376.96 1.06 3.00 193.56 378.00 1.06

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1575E+02 EXCESS=0.0000E+00 OUTFLOW=0.1573E+02 BASIN STORAGE=0.2898E-01 PERCENT ERROR= 0.0

RT-AP6 MANE 0.38 427.95 378.40 1.09 3.00 427.61 378.00 1.09

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3718E+02 EXCESS=0.0000E+00 OUTFLOW=0.3716E+02 BASIN STORAGE=0.1530E-01 PERCENT ERROR= 0.0

RT-AP6A MANE 0.37 465.70 378.09 1.17 3.00 465.69 378.00 1.17

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4155E+02 EXCESS=0.0000E+00 OUTFLOW=0.4153E+02 BASIN STORAGE=0.1620E-01 PERCENT ERROR= 0.0

RT-AP6B MANE 0.48 485.93 375.96 1.23 3.00 483.84 378.00 1.23

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.4555E+02 EXCESS=0.0000E+00 OUTFLOW=0.4553E+02 BASIN STORAGE=0.2179E-01 PERCENT ERROR= 0.0

RT-AP7 MANE 0.45 659.83 363.92 1.55 3.00 659.20 366.00 1.55

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6800E+02 EXCESS=0.0000E+00 OUTFLOW=0.6797E+02 BASIN STORAGE=0.6333E-01 PERCENT ERROR= 0.0

RT-AP7A MANE 0.33 934.21 363.21 1.78 3.00 932.25 363.00 1.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.8586E+02 EXCESS=0.0000E+00 OUTFLOW=0.8583E+02 BASIN STORAGE=0.5699E-01 PERCENT ERROR= 0.0

RT-AP8	MANE	0.10	1311.10	363.07	1.94	3.00	1310.51	363.00	1.94

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1083E+03 EXCESS=0.0000E+00 OUTFLOW=0.1083E+03 BASIN STORAGE=0.2320E-01 PERCENT ERROR= 0.0

RT-PS9	MANE	0.65	170.27	360.83	3.29	3.00	169.45	360.00	3.29

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.9478E+01 EXCESS=0.0000E+00 OUTFLOW=0.9475E+01 BASIN STORAGE=0.4513E-02 PERCENT ERROR= 0.0

RT-DFC	MANE	1.45	222.26	414.54	1.91	3.00	222.26	414.00	1.91

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1180E+03 EXCESS=0.0000E+00 OUTFLOW=0.1178E+03 BASIN STORAGE=0.1534E+00 PERCENT ERROR= 0.0

RT-DFB	MANE	0.73	210.07	509.94	1.87	3.00	210.07	510.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1363E+03 EXCESS=0.0000E+00 OUTFLOW=0.1362E+03 BASIN STORAGE=0.1173E+00 PERCENT ERROR= 0.0

RT-AP11	MANE	0.42	260.15	366.07	1.87	3.00	260.13	366.00	1.88

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1428E+03 EXCESS=0.0000E+00 OUTFLOW=0.1427E+03 BASIN STORAGE=0.7176E-01 PERCENT ERROR= 0.0

RT-AP5A	MANE	3.00	513.00	369.00	1.71	3.00	513.00	369.00	1.71

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2376E+03 EXCESS=0.0000E+00 OUTFLOW=0.2363E+03 BASIN STORAGE=0.1398E+01 PERCENT ERROR= -0.1

RT-PM1	MANE	1.49	106.62	366.76	2.24	3.00	106.57	366.00	2.24

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.6447E+01 EXCESS=0.0000E+00 OUTFLOW=0.6440E+01 BASIN STORAGE=0.1760E-01 PERCENT ERROR= -0.2

RT-AP12	MANE	3.00	879.55	372.00	1.67	3.00	879.55	372.00	1.67

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2632E+03 EXCESS=0.0000E+00 OUTFLOW=0.2621E+03 BASIN STORAGE=0.1460E+01 PERCENT ERROR= -0.1

RT-CS1	MANE	1.65	91.26	366.30	1.87	3.00	91.06	366.00	1.87

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5287E+01 EXCESS=0.0000E+00 OUTFLOW=0.5276E+01 BASIN STORAGE=0.2497E-01 PERCENT ERROR= -0.3

RT-AP14	MANE	0.50	284.86	366.46	3.19	3.00	284.49	366.00	3.20

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2093E+02 EXCESS=0.0000E+00 OUTFLOW=0.2094E+02 BASIN STORAGE=0.2099E-01 PERCENT ERROR= -0.1

RT-AP15	MANE	0.45	407.34	366.40	3.10	3.00	406.86	366.00	3.11

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2880E+02 EXCESS=0.0000E+00 OUTFLOW=0.2880E+02 BASIN STORAGE=0.2375E-01 PERCENT ERROR= -0.1

RT-AP16	MANE	0.11	433.31	366.10	3.05	3.00	433.15	366.00	3.05

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3904E+02 EXCESS=0.0000E+00 OUTFLOW=0.3904E+02 BASIN STORAGE=0.7197E-02 PERCENT ERROR= 0.0

RT-DFA	MANE	1.12	8.69	493.29	1.27	3.00	8.69	492.00	1.28

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.7497E+01 EXCESS=0.0000E+00 OUTFLOW=0.7487E+01 BASIN STORAGE=0.9499E-02 PERCENT ERROR= 0.0

RT-AP17	MANE	0.82	140.43	366.54	1.57	3.00	139.49	366.00	1.57

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1580E+02 EXCESS=0.0000E+00 OUTFLOW=0.1579E+02 BASIN STORAGE=0.1548E-01 PERCENT ERROR= 0.0

RT-AP18	MANE	0.35	231.04	366.07	1.72	3.00	231.04	366.00	1.72

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.2121E+02 EXCESS=0.0000E+00 OUTFLOW=0.2121E+02 BASIN STORAGE=0.8281E-02 PERCENT ERROR= 0.0

RT-AP19	MANE	1.41	1628.42	370.53	1.76	3.00	1622.55	369.00	1.77

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3322E+03 EXCESS=0.0000E+00 OUTFLOW=0.3316E+03 BASIN STORAGE=0.8756E+00 PERCENT ERROR= -0.1

RT-AP19A	MANE	2.40	1683.56	370.09	1.78	3.00	1681.65	372.00	1.78

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.3392E+03 EXCESS=0.0000E+00 OUTFLOW=0.3380E+03 BASIN STORAGE=0.1480E+01 PERCENT ERROR= -0.1

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

CONTINUITY 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

CONTINUITY 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	36.56	363.60	-1.00	3.00	34.33	366.00	-1.00
RT-AP24P	MANE	0.64	350.33	349.53	8.65	3.00	350.00	354.00	8.66

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1727E+03 EXCESS=0.0000E+00 OUTFLOW=0.1727E+03 BASIN STORAGE=0.6787E-02 PERCENT ERROR= 0.0

RT-AP25P	MANE	0.96	461.57	347.38	7.46	3.00	461.08	348.00	7.47

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1849E+03 EXCESS=0.0000E+00 OUTFLOW=0.1848E+03 BASIN STORAGE=0.1579E-01 PERCENT ERROR= 0.0

RT-AP25S	MANE	0.60	121.14	354.00	-1.00	3.00	121.14	354.00	-1.00
RT-AP26	MANE	2.89	1142.55	398.76	2.30	3.00	1142.21	399.00	2.31

CONTINUITY SUMMARY (AC-FT) - INFLOW=0.5449E+03 EXCESS=0.0000E+00 OUTFLOW=0.5424E+03 BASIN STORAGE=0.2852E+01 PERCENT ERROR= -0.1

RT-PM10	MANE	0.76	140.46	352.47	4.15	3.00	140.13	354.00	4.15

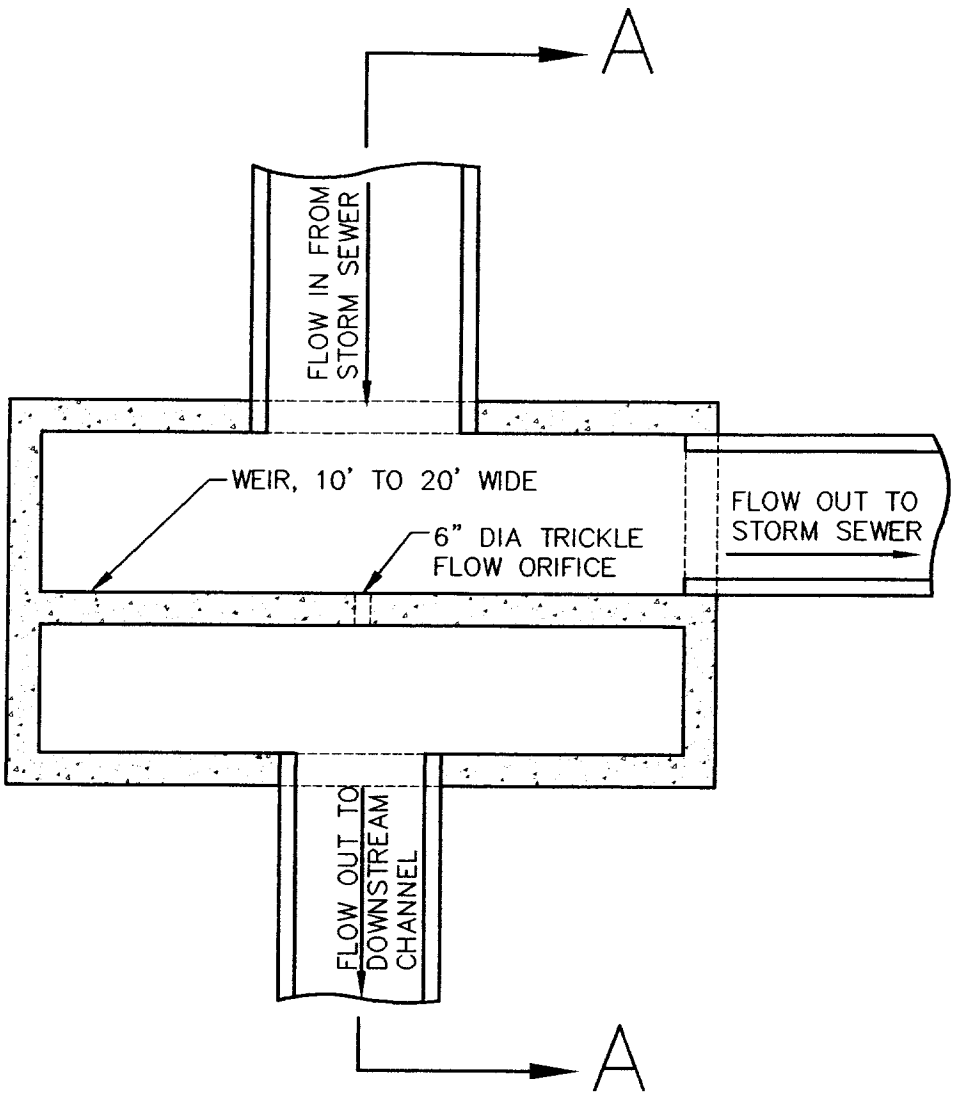
CONTINUITY SUMMARY (AC-FT) - INFLOW=0.1063E+02 EXCESS=0.0000E+00 OUTFLOW=0.1062E+02 BASIN STORAGE=0.4832E-02 PERCENT ERROR= 0.0

RT-AP24S	MANE	0.90	139.89	369.00	-1.00	3.00	139.89	369.00	-1.00

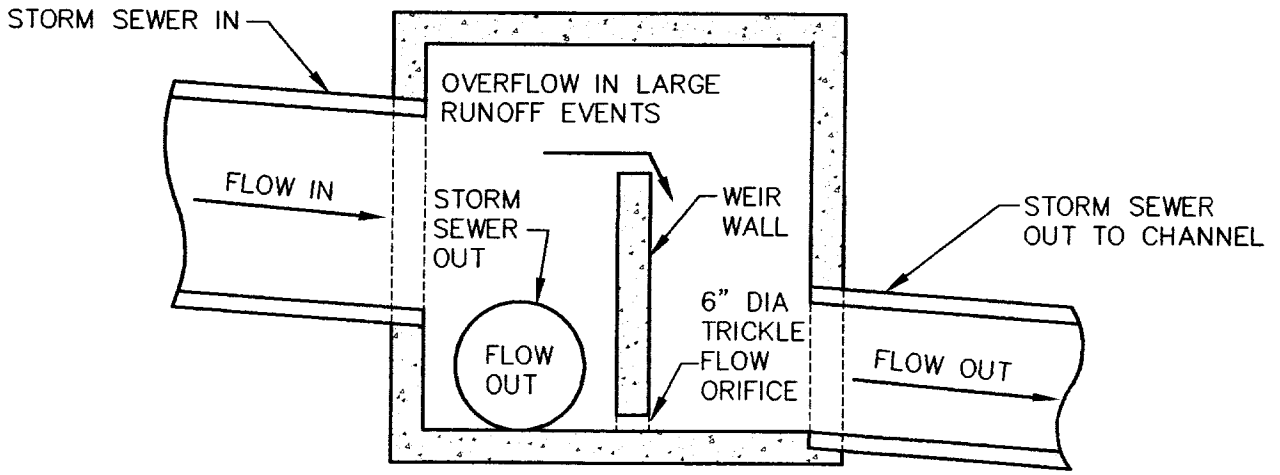
*** NORMAL END OF HEC-1 ***

D.

DIVERSION BOX CONCEPT DETAIL



PLAN VIEW



SECTION A–A

DIVERSION BOX CONCEPT DETAIL

N.T.S.

E.

MAPS (FOLDED IN POCKETS)

1. FULLY DEVELOPED CONDITION BASIN MAP AND MASTER PLAN
2. INTERIM CONDITION BASIN MAP AND MASTER PLAN
3. F.E.M.A. 100-YEAR FLOOD ZONE LIMITS
4. SUBDIVISION AND LAND USE IDENTIFICATION MAP
5. EXISTING DRAINAGE FACILITY MAP