20EBF HKB0292

EAST BISCUIT FLAT

DRAINAGE AND STORM DRAIN CONCEPTUAL PLAN

VOLUME II

INDEX NO. ST-886390

Pepared for

CITY OF PHOENIX, ARIZONA

Engineering Department
Floodplain Management Section

Registered Professional Engineer (Civil)
CERTIFICATE NO.
18156
DENNIS C.
KNUDSEN
Date Signed 2-10-92
ARIZONA, U.S.A.

February, 1992

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Prepared by:

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APPENDIX A

FLOOD CONTROL DISTRICT
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DEP | HYDRO
ADMIN | LMGT
FINANCE | FILE
DWM

1

****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3

1 HEC-1 INPUT PAGE 1

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

  1       ID     CITY OF PHOENIX  --  EAST BISCUIT FLAT DRAINAGE STUDY
  2       ID     KINEMATIC WAVE WATERSHED MODEL  -  EXISTING CONDITION (1)
  3       ID      100 YR. - 24 HR. STORM     CASE 1 DEVELOPMENT
  4       IT    20                 80
  5       IO     5
          *DIAGRAM

  6       KK  SUB112
  7       KM       RUNOFF FROM SUB-BASIN 112
  8       BA   0.050
  9       LS          98                 88
 10       PB   4.33
 11       IN   30.0
 12       PC    0.0  0.005  0.009  0.010  0.013  0.019  0.021  0.028  0.032  0.044
 13       PC  0.057  0.100  0.660  0.745  0.776  0.800  0.816  0.830  0.840  0.850
 14       PC  0.930  0.934  0.939  0.944  0.950  0.958  0.961  0.963  0.969  0.971
 15       PC  0.974  0.979  0.981  0.985  0.989  0.991  0.993  0.996  1.000  1.000
 16       UK    150   0.18   0.13     10
 17       UK    150   0.18   0.13     90
 18       RK   1500   0.18   0.05   0.02   TRAP     3     2
 19       RK    800   0.14   0.05          TRAP     5     1

 20       KK  SUB113
 21       KM       RUNOFF FROM SUB BASIN 113
 22       BA   0.170
 23       LS          98                 86
 24       UK    150   0.08   0.13      3
 25       UK    150   0.08   0.13     97
 26       RK   1500   0.08   0.05   0.02   TRAP     3     2
 27       RK   2000   0.07   0.05          TRAP     8     1    YES

 28       KK  SUB115
 29       KM       RUNOFF FROM SUB BASIN 115
 30       BA   0.083
 31       LS          98                 84
 32       UK    150   0.10   0.13      2
 33       UK    150   0.10   0.13     98
 34       RK   2000   0.10   0.05   0.01   TRAP     3     2
 35       RK    600   0.08   0.05          TRAP     5     1

 36       KK  SUB114
 37       KM       RUNOFF FROM SUB BASIN 114
 38       BA   0.117
 39       LS          98                 84
 40       UK    150   0.10   0.13      1
```

```
 41      UK    150   0.10   0.13     99
 42      RK   2900   0.08   0.05   0.01   TRAP     4     2
 43      RK   1500   0.06   0.05          TRAP     8     1   YES

 44      KK  HYD114
 45      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 114
 46      HC      2
1                          HEC-1 INPUT                          PAGE  2

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


 47      KK  SUB110
 48      KM       RUNOFF FROM SUB BASIN 110
 49      BA   0.067
 50      LS          98                84
 51      UK    150   0.10   0.13      2
 52      UK    150   0.10   0.13     98
 53      RK   1700   0.10   0.05   0.01   TRAP     3     2
 54      RK    800   0.09   0.05          TRAP    18     1   YES

 55      KK  SUB111
 56      KM       RUNOFF FROM SUB BASIN 111
 57      BA   0.287
 58      LS          98                86
 59      UK    150   0.12   0.13      6
 60      UK    150   0.12   0.13     94
 61      RK   2000   0.12   0.05   0.02   TRAP     3     2
 62      RK   2600   0.08   0.05          TRAP     8     1

 63      KK  HYD111
 64      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 111
 65      HC      2

 66      KK  SUB109
 67      KM       RUNOFF FROM SUB BASIN 109
 68      BA   0.095
 69      LS          98                85
 70      UK    150   0.05   0.13      1
 71      UK    150   0.05   0.13     99
 72      RK   1300   0.05   0.05   0.01   TRAP     3     2
 73      RK   2400   0.03  0.045          TRAP    25     1   YES

 74      KK  SUB108
 75      KM       RUNOFF FROM SUB BASIN 108
 76      BA   0.207
 77      LS          98                86
 78      UK    150   0.07   0.13      1
 79      UK    150   0.07   0.13     99
 80      RK   2500   0.07   0.05   0.02   TRAP     3     2
 81      RK   3500   0.01  0.045          TRAP    25     1   YES

 82      KK  SUB107
 83      KM       RUNOFF FROM SUB BASIN 107
 84      BA   0.138
 85      LS          85
 86      UK    200   0.01   0.13    100
 87      RK   5300   0.01   0.05   0.01   TRAP     5     2
 88      RK   1000  0.005  0.045          TRAP     5     2   YES

 89      KK  SUB104
 90      KM       RUNOFF FROM SUB BASIN 104
 91      BA   0.110
 92      LS          98                86
 93      UK    150   0.10   0.13      1
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 94      UK    150   0.10   0.13    99
1                          HEC-1 INPUT                          PAGE 3

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

 95      RK   1000   0.01   0.05   0.01   TRAP    2    2
 96      RK   3000  0.005  0.045          TRAP    4    2

 97      KK  SUB105
 98      KM       RUNOFF FROM SUB BASIN 105
 99      BA  0.112
100      LS          85
101      UK    200   0.07   0.13    100
102      RK   1500   0.01   0.05   0.01   TRAP    3    2
103      RK   2200  0.005  0.045          TRAP    6    2   YES

104      KK  SUB103
105      KM       RUNOFF FROM SUB BASIN 103
106      BA  0.145
107      LS          86
108      UK    200   0.01   0.13    100
109      RK   2700   0.01   0.05   0.01   TRAP    4    2
110      RK   2300  0.005  0.045          TRAP    4    2

111      KK  HYD103
112      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 103
113      HC      2

114      KK  SUB106
115      KM       RUNOFF FROM SUB BASIN 106
116      BA  0.119
117      LS          87
118      UK    200   0.01   0.13    100
119      RK   4000   0.01   0.05   0.01   TRAP    4    2
120      RK   2600  0.005  0.045          TRAP   15    1   YES

121      KK  SUB106
122      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 106
123      HC      2

124      KK  SUB102
125      KM       RUNOFF FROM SUB BASIN 102
126      BA  0.465
127      LS          98                87
128      UK    150   0.07   0.13      4
129      UK    150   0.07   0.13     96
130      RK   5400   0.06   0.05   0.02   TRAP    5    2
131      RK   1700  0.008  0.045          TRAP   40    2   YES

132      KK  SUB101
133      KM       RUNOFF FROM SUB BASIN 101
134      BA  0.073
135      LS          88
136      UK    200   0.01   0.13    100
137      RK   2500   0.01   0.05   0.01   TRAP    3    2
138      RK   1000  0.008  0.045          TRAP   40    2   YES
1                          HEC-1 INPUT                          PAGE 4

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

139      KK  SUB094
140      KM       RUNOFF FROM SUB BASIN 094
141      BA  0.169
142      LS          98                88
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```
143     UK    150   0.18   0.13     2
144     UK    150   0.18   0.13    98
145     RK   2000   0.18   0.05   0.02   TRAP     3     2
146     RK   1700   0.15   0.05          TRAP     6     1

147     KK  SUB096
148     KM       RUNOFF FROM SUB BASIN 96
149     BA   0.191
150     LS          98                84
151     UK    150   0.05   0.13     1
152     UK    150   0.05   0.13    99
153     RK   2400   0.05   0.05   0.02   TRAP     3     2
154     RK   3100  0.008  0.045          TRAP    10     4   YES

155     KK  SUB095
156     KM       RUNOFF FROM SUB BASIN 095
157     BA   0.098
158     LS          98                86
159     UK    150   0.10   0.13     2
160     UK    150   0.10   0.13    98
161     RK   2100   0.10   0.05   0.01   TRAP     3     2
162     RK   1200   0.05   0.05          TRAP     5     1

163     KK  SUB133
164     KM       RUNOFF FROM SUBBASIN 133
165     BA   0.100
166     LS          98                84
167     UK    150   0.05   0.13     1
168     UK    150   0.05   0.13    99
169     RK   1800   0.05   0.05   0.01   TRAP     3     2
170     RK   3100  0.008  0.045          TRAP    10     4   YES

171     KK  HYD096
172     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 096
173     HC      2

174     KK  SUB097
175     KM       RUNOFF FROM SUB BASIN 097
176     BA   0.242
177     LS          88
178     UK    200   0.02   0.13   100
179     RK   4000   0.02   0.05   0.02   TRAP     4     2
180     RK   3600  0.013  0.045          TRAP    10     4   YES

181     KK  SUB099
182     KM       RUNOFF FROM SUB BASIN 099
183     BA   0.030
184     LS          88
185     UK    200   0.01   0.13   100
186     RK   2000   0.01   0.05  0.005   TRAP     3     2
```



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

187     RK    300  0.008  0.045          TRAP    25     2   YES

188     KK  SUB092
189     KM       RUNOFF FROM SUB BASIN 092
190     BA   0.062
191     LS          98                88
192     UK    150   0.15   0.13     8
193     UK    150   0.15   0.13    92
194     RK    800   0.15   0.05   0.01   TRAP     2     2
195     RK    700   0.14   0.05          TRAP     5     1
```

```
196     KK  SUB093
197     KM      RUNOFF FROM SUB BASIN 093
198     BA  0.174
199     LS          98                  85
200     UK    150   0.05   0.13     1
201     UK    150   0.05   0.13    99
202     RK   1500   0.05   0.05   0.02   TRAP     3     2
203     RK   4000   0.04  0.045          TRAP    10     3   YES

204     KK  SUB098
205     KM      RUNOFF FROM SUB BASIN 098
206     BA  0.106
207     LS          88
208     UK    200   0.02   0.13   100
209     RK   3000   0.02   0.05   0.01   TRAP     4     2
210     RK   1800  0.008  0.045          TRAP    10     4   YES

211     KK  HYD098
212     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 098
213     HC      2

214     KK  SUB100
215     KM      RUNOFF FROM SUB BASIN 100
216     BA  0.308
217     LS          98                  86
218     UK    150   0.03   0.13     1
219     UK    150   0.03   0.13    99
220     RK   6000   0.03   0.05   0.03   TRAP     5     2
221     RK   2500  0.008  0.045          TRAP    30     2   YES

222     KK  HYD100
223     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 100
224     HC      2

225     KK  SUB091
226     KM      RUNOFF FROM SUB BASIN 091
227     BA  0.108
228     LS          98                  88
229     UK    150   0.05   0.13     1
230     UK    150   0.05   0.13    99
231     RK   2300   0.05   0.05   0.01   TRAP     3     2
232     RK    900   0.01  0.045          TRAP    60     3   YES
                          HEC-1 INPUT                              PAGE  6

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


233     KK  SUB088
234     KM      RUNOFF FROM SUB BASIN 088
235     BA  0.303
236     LS          98                  87
237     UK    150   0.08   0.13     8
238     UK    150   0.08   0.13    92
239     RK   3000   0.80   0.05   0.02   TRAP     4     2
240     RK   1500  0.065   0.05          TRAP     8     1

241     KK  SUB087
242     KM      RUNOFF FROM SUB BASIN 087
243     BA  0.079
244     LS          87
245     UK    200   0.04   0.13   100
246     RK   2000   0.04   0.05   0.01   TRAP     3     2
247     RK   1000   0.04   0.05          TRAP    10   1.5   YES

248     KK  SUB132
```

```
249     KM      RUNOFF FROM SUB BASIN 132
250     BA  0.078
251     LS          98                  87
252     UK    150   0.01   0.13     6
253     UK    150   0.01   0.13    94
254     RK   2000   0.10   0.05   0.01   TRAP     3     2
255     RK   2100   0.08   0.05          TRAP     8     1

256     KK  HYD087
257     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 087
258     HC      2

259     KK  SUB089
260     KM      RUNOFF FROM SUB BASIN 089
261     BA  0.054
262     LS          80
263     UK    200   0.04   0.13   100
264     RK   2200   0.04   0.05  0.005   TRAP     3     2
265     RK   2500   0.03   0.05          TRAP    12   1.5   YES

266     KK  SUB085
267     KM      RUNOFF FROM SUB BASIN 085
268     BA  0.107
269     LS          98                  85
270     UK    150   0.06   0.13     4
271     UK    150   0.06   0.13    96
272     RK   1800   0.06   0.05   0.01   TRAP     3     2
273     RK   1100   0.05   0.05          TRAP     6     1

274     KK  SUB086
275     KM      RUNOFF FROM SUB BASIN 086
276     BA  0.103
277     LS          84
278     UK    200   0.05   0.13   100
279     RK   2000   0.05   0.05   0.01   TRAP     3     2
280     RK   3000   0.03   0.05          TRAP    10   1.5   YES
```



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

281     KK  HYD086
282     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 086
283     HC      2

284     KK  SUB090
285     KM      RUNOFF FROM SUB BASIN 090
286     BA  0.053
287     LS          88
288     UK    200   0.03   0.13   100
289     RK    800   0.03   0.05  0.005   TRAP     2     2
290     RK   1900   0.02   0.05          TRAP   100    10   YES

291     KK  HYD091
292     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 091
293     HC      2

294     KK  SUB069
295     KM      RUNOFF FROM SUB BASIN 069
296     BA  0.283
297     LS          98                  85
298     UK    150   0.10   0.13     2
299     UK    150   0.10   0.13    98
300     RK   3200   0.10   0.05   0.02   TRAP     4     2
301     RK   3300   0.01   0.05          TRAP   110     2   YES
```

```
302     KK  SUB067
303     KM      RUNOFF FROM SUB BASIN 067
304     BA  0.208
305     LS          98                  88
306     UK    150   0.18   0.13     7
307     UK    150   0.18   0.13    93
308     RK   1800   0.18   0.05   0.02   TRAP     3     2
309     RK   1600   0.10   0.05          TRAP     5     1

310     KK  SUB068
311     KM      RUNOFF FROM SUB BASIN 068
312     BA  0.078
313     LS          98                  86
314     UK    150   0.05   0.13     1
315     UK    150   0.05   0.13    99
316     RK   1600   0.05   0.05   0.01   TRAP     3     2
317     RK   3200   0.04   0.05          TRAP    10   1.5   YES

318     KK  HYD069
319     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 069
320     HC     2

321     KK  SUB070
322     KM      RUNOFF FROM SUB BASIN 070
323     BA  0.015
324     LS          77
325     UK    200   0.01   0.13   100
326     RK    900   0.01   0.05  0.005   TRAP     2     2
327     RK    600   0.01   0.05          TRAP    80     2   YES
                          HEC-1 INPUT                              PAGE  8

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


328     KK  SUB066
329     KM      RUNOFF FROM SUB BASIN 066
330     BA  0.068
331     LS          98                  87
332     UK    150   0.08   0.13     2
333     UK    150   0.08   0.13    98
334     RK   2000   0.08   0.05  0.005   TRAP     3     2
335     RK   2400   0.03   0.05          TRAP     6     1

336     KK  HYD070
337     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 070
338     HC     2

339     KK  SUB071
340     KM      RUNOFF FROM SUB BASIN 071
341     BA  0.061
342     LS          82
343     UK    200   0.01   0.13   100
344     RK   2300   0.01   0.05  0.005   TRAP     3     2
345     RK    900   0.01   0.05          TRAP    70     2   YES

346     KK  SUB075
347     KM      RUNOFF FROM SUB BASIN 075
348     BA  0.101
349     LS          98                  88
350     UK    150   0.18   0.13    10
351     UK    150   0.18   0.13    90
352     RK   1000   0.18   0.05   0.01   TRAP     2     2
353     RK   1500   0.16   0.05          TRAP     5     1
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```
354     KK  SUB076
355     KM      RUNOFF FROM SUB BASIN 076
356     BA  0.156
357     LS          98                  86
358     UK    150   0.05   0.13     3
359     UK    150   0.05   0.13    97
360     RK   2800   0.05   0.05   0.01   TRAP     4     2
361     RK   3800   0.04   0.05          TRAP    10   1.5   YES

362     KK  SUB074
363     KM      RUNOFF FROM SUB BASIN 074
364     BA  0.084
365     LS          98                  86
366     UK    150   0.04   0.13     2
367     UK    150   0.04   0.13    98
368     RK   1000   0.04   0.05   0.01   TRAP     2     2
369     RK   2000   0.04   0.05          TRAP     6     1

370     KK  HYD076
371     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 076
372     HC      2
```



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


373     KK  SUB077
374     KM      RUNOFF FROM SUB BASIN 077
375     BA  0.033
376     LS          85
377     UK    200   0.03   0.13    100
378     RK   1500   0.03   0.05  0.005   TRAP     3     2
379     RK   1800  0.025  0.045          TRAP    12   1.5   YES

380     KK  SUB078
381     KM      RUNOFF FROM SUB BASIN 078
382     BA  0.179
383     LS          98                  88
384     UK    150   0.18   0.13    10
385     UK    150   0.18   0.13    90
386     RK   1500   0.18   0.05   0.02   TRAP     3     2
387     RK   1100   0.10  0.045          TRAP     5     1

388     KK  SUB079
389     KM      RUNOFF FROM SUB BASIN 079
390     BA  0.188
391     LS          98                  86
392     UK    150   0.05   0.13     4
393     UK    150   0.05   0.13    96
394     RK   3000   0.05   0.05   0.02   TRAP     4     2
395     RK   3400   0.04   0.05          TRAP    10   1.5   YES

396     KK  SUB080
397     KM      RUNOFF FROM SUB BASIN 080
398     BA  0.054
399     LS          85
400     UK    200   0.03   0.13    100
401     RK   1300   0.03   0.05  0.005   TRAP     3     2
402     RK   2700   0.02  0.045          TRAP    12   1.5   YES

403     KK  HYD080
404     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 080
405     HC      2

406     KK  SUB081
```

```
407     KM      RUNOFF FROM SUB BASIN 081
408     BA  0.035
409     LS          85
410     UK   200   0.02   0.13   100
411     RK  1700   0.02   0.05  0.005   TRAP    3    2
412     RK  1900  0.015  0.045         TRAP   15   1.5   YES

413     KK  SUB082
414     KM      RUNOFF FROM SUB BASIN 082
415     BA  0.069
416     LS          84
417     UK   200   0.04   0.13   100
418     RK  2000   0.04   0.05  0.005   TRAP    3    2
419     RK  1000  0.035   0.05         TRAP    5    1
```



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

420     KK  SUB083
421     KM      RUNOFF FROM SUB BASIN 083
422     BA  0.150
423     LS          85
424     UK   200   0.03   0.13   100
425     RK  3000   0.03   0.05   0.01   TRAP    4    2
426     RK  2200   0.03   0.05         TRAP    8    1   YES

427     KK  SUB084
428     KM      RUNOFF FROM SUB BASIN 084
429     BA  0.194
430     LS          85
431     UK   200   0.02   0.13   100
432     RK  4000   0.02   0.05   0.02   TRAP    4    2
433     RK  2200  0.015   0.05         TRAP   10   1.5   YES

434     KK  HYD084
435     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 084
436     HC     2

437     KK  SUB073
438     KM      RUNOFF FROM SUB BASIN 073
439     BA  0.004
440     LS          85
441     UK   200   0.01   0.13   100
442     RK   900   0.01   0.05  0.003   TRAP    2    2
443     RK   500   0.01   0.05         TRAP   25    2   YES

444     KK  SUB057
445     KM      RUNOFF FROM SUB BASIN 057
446     BA  0.049
447     LS          98              88
448     UK   150   0.12   0.13    10
449     UK   150   0.12   0.13    90
450     RK   800   0.12   0.05  0.005   TRAP    2    2
451     RK  1200   0.12   0.05         TRAP    5    1

452     KK  SUB058
453     KM      RUNOFF FROM SUB BASIN 058
454     BA  0.154
455     LS          87
456     UK   200   0.04   0.13   100
457     RK  2300   0.04   0.05   0.01   TRAP    4    2
458     RK  3300   0.04   0.05         TRAP   15   1.5   YES

459     KK  SUB059
```

```
460     KM      RUNOFF FROM SUB BASIN 059
461     BA  0.045
462     LS          84
463     UK    200   0.03   0.13    100
464     RK   1400   0.03   0.05  0.005   TRAP     3     2
465     RK   2300   0.02  0.045         TRAP    18   1.5    YES
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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

466     KK  SUB060
467     KM      RUNOFF FROM SUB BASIN 060
468     BA  0.105
469     LS          98                88
470     UK    150   0.12   0.13     10
471     UK    150   0.12   0.13     90
472     RK   1000   0.12   0.05   0.01   TRAP     2     2
473     RK   1600   0.10   0.05         TRAP     6     1

474     KK  SUB061
475     KM      RUNOFF FROM SUB BASIN 061
476     BA  0.087
477     LS          98                87
478     UK    150   0.05   0.13      3
479     UK    150   0.05   0.13     97
480     RK   1700   0.05   0.05   0.01   TRAP     3     2
481     RK   2100   0.04  0.045         TRAP    10     1    YES

482     KK  SUB062
483     KM      RUNOFF FROM SUB BASIN 062
484     BA  0.052
485     LS          86
486     UK    200   0.03   0.13    100
487     RK   1800   0.03   0.05  0.005   TRAP     3     2
488     RK   1600   0.03  0.045         TRAP    12     1    YES

489     KK  HYD062
490     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 062
491     HC      2

492     KK  SUB063
493     KM      RUNOFF FROM SUB BASIN 063
494     BA  0.060
495     LS          98                88
496     UK    150   0.18   0.13     10
497     UK    150   0.18   0.13     90
498     RK   1000   0.18   0.05  0.005   TRAP     2     2
499     RK   1000   0.16   0.05         TRAP     6     1

500     KK  SUB064
501     KM      RUNOFF FROM SUB BASIN 064
502     BA  0.053
503     LS          98                87
504     UK    150   0.05   0.13      2
505     UK    150   0.05   0.13     98
506     RK   1100   0.05   0.05  0.005   TRAP     2     2
507     RK   3200   0.03  0.045         TRAP    10     1    YES

508     KK  HYD064
509     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 064
510     HC      2
```



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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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511     KK  SUB065
512     KM      RUNOFF FROM SUB BASIN 065
513     BA  0.202
514     LS          85
515     UK    200   0.04   0.13    100
516     RK   4000   0.04   0.05   0.02   TRAP     4     2
517     RK   3500   0.02   0.05          TRAP    30     2   YES

518     KK  HYD073
519     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 073
520     HC      2

521     KK  SUB072
522     KM      RUNOFF FROM SUB BASIN 072
523     BA  0.004
524     LS          77
525     UK    200   0.01   0.13    100
526     RK    800   0.01   0.05  0.003   TRAP     2     2
527     RK    300   0.01   0.05          TRAP    30     2   YES

528     KK  HYD072
529     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 072
530     HC      2

531     KK  SUB056
532     KM      RUNOFF FROM SUB BASIN 056
533     BA  0.145
534     LS          83
535     UK    200   0.03   0.13    100
536     RK   2500   0.03   0.05   0.01   TRAP     4     2
537     RK   2900  0.008  0.045          TRAP    30     2   YES

538     KK  SUB052
539     KM      RUNOFF FROM SUB BASIN 052
540     BA  0.081
541     LS          86
542     UK    200   0.01   0.13    100
543     RK   1000  0.025   0.05   0.01   TRAP     2     2
544     RK   2200  0.025   0.05          TRAP     6     1

545     KK  SUB053
546     KM      RUNOFF FROM SUB BASIN 053
547     BA  0.068
548     LS          85
549     UK    200  0.025   0.13    100
550     RK   1400  0.025   0.05   0.01   TRAP     3     2
551     RK   2600  0.020   0.05          TRAP    10     1   YES

552     KK  SUB054
553     KM      RUNOFF FROM SUB BASIN 054
554     BA  0.043
555     LS          85
556     UK    200   0.02   0.13    100
557     RK   1300   0.02   0.05  0.005   TRAP     2     2
```



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

558     RK   2300   0.01   0.05          TRAP    15   1.5   YES

559     KK  SUB051
560     KM      RUNOFF FROM SUB BASIN 051
561     BA  0.037
```

```
562     LS          85
563     UK   200   0.01   0.13   100
564     RK  1000   0.01   0.05  0.005  TRAP    2     2
565     RK  2300   0.01   0.05         TRAP    5     1

566     KK  HYD054
567     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 054
568     HC     2

569     KK  SUB055
570     KM      RUNOFF FROM SUB BASIN 055
571     BA  0.083
572     LS          86
573     UK   200  0.015   0.13   100
574     RK  3100  0.015   0.05   0.01   TRAP    5     2
575     RK  2100   0.01  0.045         TRAP   18   1.5   YES

576     KK  HYD056
577     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 056
578     HC     2

579     KK  SUB050
580     KM      RUNOFF FROM SUB BASIN 050
581     BA  0.291
582     LS          98                84
583     UK   150   0.08   0.13    1
584     UK   150   0.08   0.13   99
585     RK  3200   0.08   0.05   0.02   TRAP    4     2
586     RK  1600  0.008  0.045         TRAP   30   1.5   YES

587     KK  SUB027
588     KM      RUNOFF FROM SUB BASIN 027
589     BA  0.047
590     LS          84
591     UK   200   0.04   0.13   100
592     RK  2000   0.04   0.05   0.01   TRAP    2     2
593     RK   600   0.02   0.05         TRAP    3     1

594     KK  SUB028
595     KM      RUNOFF FROM SUB BASIN 028
596     BA  0.126
597     LS          80
598     UK   200   0.04   0.13   100
599     RK  3000   0.04   0.05   0.01   TRAP    3     2
600     RK  2500  0.015   0.05         TRAP   10     1   YES
```



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

601     KK  SUB029
602     KM      RUNOFF FROM SUB BASIN 029
603     BA  0.108
604     LS          98                88
605     UK   150   0.08   0.13    10
606     UK   150   0.08   0.13    90
607     RK  2000   0.08   0.05   0.01   TRAP    3     2
608     RK   400   0.06   0.05         TRAP    5     1

609     KK  SUB030
610     KM      RUNOFF FROM SUB BASIN 030
611     BA  0.076
612     LS          85
613     UK   200   0.03   0.13   100
614     RK  1300   0.03   0.05   0.01   TRAP    2     2
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615     RK   2700   0.03   0.05        TRAP     7    1.5    YES

616     KK  SUB031
617     KM      RUNOFF FROM SUB BASIN 031
618     BA  0.054
619     LS          84
620     UK    200   0.02   0.13    100
621     RK   2000  0.020   0.05  0.005   TRAP     3     2
622     RK   2500  0.015   0.05        TRAP    10    1.5    YES

623     KK  HYD031
624     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 031
625     HC     2

626     KK  SUB032
627     KM      RUNOFF FROM SUB BASIN 032
628     BA  0.025
629     LS          78
630     UK    200   0.02   0.13    100
631     RK   1400   0.02   0.05  0.002   TRAP     3     2
632     RK    600   0.01  0.045        TRAP    15    1.5    YES

633     KK  SUB033
634     KM      RUNOFF FROM SUB BASIN 033
635     BA  0.061
636     LS          98                86
637     UK    150   0.04   0.13     1
638     UK    150   0.04   0.13    99
639     RK   1500   0.04   0.05  0.005   TRAP     3     2
640     RK    600   0.04   0.05        TRAP     5     1

641     KK  SUB034
642     KM      RUNOFF FROM SUB BASIN 034
643     BA  0.085
644     LS          84
645     UK    200   0.02   0.13    100
646     RK   1400   0.02   0.05   0.01   TRAP     3     2
647     RK   4300   0.02  0.045        TRAP    10    1.5    YES
```



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

648     KK  HYD034
649     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 034
650     HC     2

651     KK  SUB035
652     KM      RUNOFF FROM SUB BASIN 035
653     BA  0.133
654     LS          83
655     UK    200   0.02   0.13    100
656     RK   3400   0.02   0.05   0.01   TRAP     4     2
657     RK   3000   0.01  0.045        TRAP    15     2    YES

658     KK  SUB036
659     KM      RUNOFF FROM SUB BASIN 036
660     BA  0.080
661     LS          98                88
662     UK    150   0.18   0.13    12
663     UK    150   0.18   0.13    88
664     RK   1300   0.18   0.05   0.01   TRAP     2     2
665     RK    700   0.18   0.05        TRAP     4     1

666     KK  SUB037
```

```
667     KM      RUNOFF FROM SUB BASIN 037
668     BA  0.206
669     LS          98              88
670     UK    150   0.18   0.13    10
671     UK    150   0.18   0.13    90
672     RK   2400   0.18   0.05   0.02   TRAP     3     2
673     RK   2000   0.15   0.05          TRAP    10     1    YES

674     KK  SUB038
675     KM      RUNOFF FROM SUB BASIN 038
676     BA  0.150
677     LS          85
678     UK    200   0.04   0.13    100
679     RK   2500   0.04   0.05   0.02   TRAP     3     2
680     RK   3600   0.04  0.045          TRAP    25   1.5    YES

681     KK  SUB039
682     KM      RUNOFF FROM SUB BASIN 039
683     BA  0.043
684     LS          82
685     UK    200   0.02   0.13    100
686     RK   1000   0.02   0.05  0.005   TRAP     2     2
687     RK   2200   0.02  0.045          TRAP    25   1.5    YES

688     KK  SUB040
689     KM      RUNOFF FROM SUB BASIN 040
690     BA  0.038
691     LS          78
692     UK    200   0.02   0.13    100
693     RK    800   0.02   0.05  0.005   TRAP     2     2
694     RK   3000   0.02  0.045          TRAP    80     2    YES
```



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

695     KK  HYD040
696     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 040
697     HC      2

698     KK  SUB041
699     KM      RUNOFF FROM SUB BASIN 041
700     BA  0.007
701     LS          77
702     UK    200   0.01   0.13    100
703     RK    400   0.01   0.05  0.002   TRAP     2     2
704     RK   1100  0.008  0.045          TRAP    80     2    YES

705     KK  SUB023
706     KM      RUNOFF FROM SUB BASIN 023
707     BA  0.077
708     LS          88
709     UK    200   0.15   0.13    100
710     RK   1500   0.15   0.05   0.01   TRAP     1     2
711     RK    300   0.11  0.045          TRAP     5     1

712     KK  SUB024
713     KM      RUNOFF FROM SUB BASIN 024
714     BA  0.090
715     LS          76
716     UK    200   0.04   0.13    100
717     RK   1500   0.04   0.05   0.01   TRAP     2     2
718     RK   3000   0.03   0.05          TRAP     8     1    YES

719     KK  SUB025
```

```
720     KM      RUNOFF FROM SUB BASIN 025
721     BA  0.036
722     LS          85
723     UK   200   0.02   0.13   100
724     RK  1300   0.02   0.05  0.005   TRAP    2     2
725     RK  1800  0.015   0.05         TRAP   12   1.5   YES

726     KK  SUB116
727     KM      RUNOFF FROM SUB BASIN 116
728     BA  0.057
729     LS          85
730     UK   200   0.02   0.13   100
731     RK  1000   0.02   0.05  0.005   TRAP    2     2
732     RK   500   0.04  0.045         TRAP    3     4

733     KK  SUB022
734     KM      RUNOFF FROM SUB BASIN 022
735     BA  0.151
736     LS          80
737     UK   200   0.03   0.13   100
738     RK  2000   0.03   0.05   0.02   TRAP    2     2
739     RK  3000  0.015   0.05         TRAP   12     1   YES
```



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


740     KK  HYD025
741     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 025
742     HC     2

743     KK  SUB026
744     KM      RUNOFF FROM SUB BASIN 026
745     BA  0.184
746     LS          84
747     UK   200   0.01   0.13   100
748     RK  2000   0.01   0.05   0.02   TRAP    2     2
749     RK  5600   0.01  0.045         TRAP   25   1.5   YES

750     KK  HYD041
751     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 041
752     HC     2

753     KK  SUB042
754     KM      RUNOFF FROM SUB BASIN 042
755     BA  0.185
756     LS          78
757     UK   200   0.01   0.13   100
758     RK  2800   0.01   0.05   0.02   TRAP    4     2
759     RK  1600  0.008  0.045         TRAP   40     2   YES

760     KK  SUB043
761     KM      RUNOFF FROM SUB BASIN 043
762     BA  0.060
763     LS          85
764     UK   200   0.02   0.13   100
765     RK  2000   0.02   0.05   0.01   TRAP    3     2
766     RK  1700  0.015   0.05         TRAP    6     1

767     KK  SUB044
768     KM      RUNOFF FROM SUB BASIN 044
769     BA  0.049
770     LS          85
771     UK   200   0.02   0.13   100
772     RK  3300   0.02   0.05   0.01   TRAP    4     2
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773     RK   1100  0.015   0.05        TRAP    10     1    YES

774     KK  SUB045
775     KM      RUNOFF FROM SUB BASIN 045
776     BA  0.046
777     LS          85
778     UK    200   0.02   0.13    100
779     RK   2000   0.02   0.05   0.01   TRAP     3     2
780     RK   2400   0.01   0.05        TRAP     8     1

781     KK  HYD044
782     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 044
783     HC     2
```



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


784     KK  SUB046
785     KM      RUNOFF FROM SUB BASIN 046
786     BA  0.010
787     LS          83
788     UK    200   0.01   0.13    100
789     RK   1200   0.01   0.05  0.002   TRAP     2     2
790     RK    700  0.008   0.05        TRAP    12     1    YES

791     KK  SUB047
792     KM      RUNOFF FROM SUB BASIN 047
793     BA  0.047
794     LS          88
795     UK    200  0.015   0.13    100
796     RK   1600  0.015   0.05  0.005   TRAP     3     2
797     RK   1600  0.008   0.05        TRAP     5     1

798     KK  HYD047
799     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 047
800     HC     2

801     KK  SUB048
802     KM      RUNOFF FROM SUB BASIN 048
803     BA  0.014
804     LS          85
805     UK    200   0.01   0.13    100
806     RK    700   0.01   0.05  0.005   TRAP     2     2
807     RK   1000  0.008   0.05        TRAP    15     1    YES

808     KK  HYD048
809     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 048
810     HC     2

811     KK  SUB049
812     KM      RUNOFF FROM SUB BASIN 049
813     BA  0.105
814     LS          81
815     UK    200  0.008   0.13    100
816     RK   2700  0.008   0.05   0.01   TRAP     4     2
817     RK   2200  0.008   0.05        TRAP    16   1.5    YES

818     KK  HYD049
819     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 049
820     HC     2

821     KK  SUB021
822     KM      RUNOFF FROM SUB BASIN 021
823     BA  0.170
```

```
824     LS          98                 78
825     UK    150   0.04   0.13     6
826     UK    150   0.04   0.13    94
827     RK   3000   0.04   0.05   0.02   TRAP     3     2
828     RK   1700  0.008  0.045          TRAP    30   1.5    YES
```



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

829     KK  SUB020
830     KM      RUNOFF FROM SUB BASIN 020
831     BA  0.192
832     LS          98                 79
833     UK    150   0.05   0.13     1
834     UK    150   0.05   0.13    99
835     RK   3800   0.05   0.05   0.02   TRAP     1     2
836     RK   1600  0.008   0.05          TRAP    30   1.5    YES

837     KK  SUB019
838     KM      RUNOFF FROM SUB BASIN 019
839     BA  0.150
840     LS          98                 86
841     UK    150   0.06   0.13     4
842     UK    150   0.06   0.13    96
843     RK   1300   0.06   0.05   0.01   TRAP     1     2
844     RK   3500   0.02   0.05          TRAP    45     1

845     KK  HYD019
846     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 019
847     HC      2

848     KK  SUB018
849     KM      RUNOFF FROM SUB BASIN 018
850     BA  0.010
851     LS          81
852     UK    200   0.01   0.13   100
853     RK   1000   0.01   0.05  0.002   TRAP     2     2
854     RK    400  0.008   0.05          TRAP    30   1.5    YES

855     KK  SUB016
856     KM      RUNOFF FROM SUB BASIN 016
857     BA  0.279
858     LS          98                 88
859     UK    150   0.18   0.13    12
860     UK    150   0.18   0.13    88
861     RK   1300   0.18   0.05   0.03   TRAP     1     2
862     RK   3000   0.14   0.05          TRAP     5     1

863     KK  SUB017
864     KM      RUNOFF FROM SUB BASIN 017
865     BA  0.084
866     LS          98                 85
867     UK    150   0.05   0.13     1
868     UK    150   0.05   0.13    99
869     RK   1500   0.05   0.05   0.01   TRAP     2     2
870     RK   4000   0.04  0.050          TRAP    65   1.5    YES

871     KK  HYD017
872     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 017
873     HC      2
```



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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
874     KK  SUB015
875     KM      RUNOFF FROM SUB BASIN 015
876     BA  0.172
877     LS          84
878     UK   200   0.05   0.13    100
879     RK   6000   0.05   0.05   0.02   TRAP     6     2
880     RK   1700  0.008   0.05          TRAP    30   1.5    YES

881     KK  SUB005
882     KM      RUNOFF FROM SUB BASIN 005
883     BA  0.058
884     LS          88
885     UK   200  0.015   0.13    100
886     RK   1100  0.015   0.05  0.005   TRAP     1     2
887     RK    800  0.015  0.045          TRAP     3     1

888     KK  SUB006
889     KM      RUNOFF FROM SUB BASIN 006
890     BA  0.140
891     LS          86
892     UK   200  0.015   0.13    100
893     RK   2000  0.015   0.05   0.01   TRAP     3     2
894     RK   3100  0.015   0.05          TRAP     5     1    YES

895     KK  SUB007
896     KM      RUNOFF FROM SUB BASIN 007
897     BA  0.155
898     LS          87
899     UK   200  0.008   0.13    100
900     RK   3600  0.008   0.05   0.01   TRAP     4     2
901     RK   2700  0.008   0.05          TRAP    15     1    YES

902     KK  SUB008
903     KM      RUNOFF FROM SUB BASIN 008
904     BA  0.083
905     LS          88
906     UK   200  0.008   0.13    100
907     RK   1300  0.008   0.05   0.01   TRAP     3     2
908     RK   3800  0.008   0.05          TRAP    25     2    YES

909     KK  SUB009
910     KM      RUNOFF FROM SUB BASIN 009
911     BA  0.036
912     LS          84
913     UK   200  0.015   0.13    100
914     RK   1100  0.015   0.05  0.004   TRAP     1     2
915     RK   1400  0.015   0.05          TRAP     3     1

916     KK  SUB010
917     KM      RUNOFF FROM SUB BASIN 010
918     BA  0.085
919     LS          85
920     UK   200  0.008   0.13    100
921     RK   1600  0.008   0.05   0.01   TRAP     3     2
```



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

922     RK   1700  0.008   0.05          TRAP    16     1    YES

923     KK  SUB011
924     KM      RUNOFF FROM SUB BASIN 011
925     BA  0.053
926     LS          88
```

```
927      UK    200  0.008   0.13    100
928      RK   1400  0.008   0.05  0.005   TRAP     3     2
929      RK   1500  0.008  0.045         TRAP    20     2   YES

930      KK  SUB012
931      KM       RUNOFF FROM SUB BASIN 012
932      BA  0.072
933      LS          88
934      UK    200  0.008   0.13    100
935      RK   1100  0.008   0.05  0.007   TRAP     3     2
936      RK   3100  0.008  0.045         TRAP    15     2   YES

937      KK  HYD012
938      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 012
939      HC      2

940      KK  SUB013
941      KM       RUNOFF FROM SUB BASIN 013
942      BA  0.138
943      LS          88
944      UK    200  0.008   0.13    100
945      RK   2000  0.008   0.05  0.011   TRAP     4     2
946      RK   3000  0.008   0.05         TRAP   100     2   YES

947      KK  SUB014
948      KM       RUNOFF FROM SUB BASIN 014
949      BA  0.102
950      LS          88
951      UK    200  0.008   0.13    100
952      RK   2000  0.008   0.05   0.01   TRAP     4     2
953      RK   3400  0.008   0.05         TRAP    50   1.5   YES

954      KK  HYD014
955      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 014
956      HC      2

957      KK  SUB130
958      KM       RUNOFF FROM SUB BASIN 130
959      BA  0.111
960      LS          85
961      UK    200   0.04   0.13    100
962      RK   4200   0.04   0.05   0.01   TRAP     5     2
963      RK    700   0.04   0.05         TRAP    40     1   YES
```



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

964      KK  SUB001
965      KM       RUNOFF FROM SUB BASIN 001
966      BA  0.124
967      LS          88
968      UK    200  0.008   0.13    100
969      RK   1900  0.008   0.05   0.01   TRAP     3     2
970      RK   3000  0.008  0.045         TRAP     5     1

971      KK  SUB002
972      KM       RUNOFF FROM SUB BASIN 002
973      BA  0.091
974      LS          87
975      UK    200  0.008   0.13    100
976      RK   1200  0.008   0.05   0.01   TRAP     3     2
977      RK   3200  0.008  0.045         TRAP    10     2   YES

978      KK  SUB003
```

```
979     KM      RUNOFF FROM SUB BASIN 003
980     BA  0.086
981     LS          86
982     UK    200  0.008   0.13    100
983     RK    900  0.008   0.05   0.01   TRAP     2     2
984     RK   3300  0.008  0.045         TRAP    20     2   YES

985     KK  SUB004
986     KM      RUNOFF FROM SUB BASIN 004
987     BA  0.029
988     LS          87
989     UK    200  0.008   0.13    100
990     RK   2300  0.008   0.05  0.003   TRAP     5     2
991     RK    450  0.008   0.05         TRAP    20     2   YES

992     KK  HYD130
993     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 130
994     HC      2

995     KK  SUB131
996     KM      RUNOFF FROM SUB BASIN 131
997     BA  0.042
998     LS          83
999     UK    200  0.008   0.13    100
1000    RK    700  0.008   0.05   0.01   TRAP     3     2
1001    RK   1750  0.008   0.05         TRAP    60     2   YES
1002    ZZ
1
        SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE   (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

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

  6    SUB112
         V
         V
 20    SUB113 ***
         .
         .
 28      .    SUB115
         .       V
         .       V
 36      .    SUB114 ***
         .       .
         .       .
 44    HYD114............
         V
         V
 47    SUB110 ***
         .
         .
 55      .    SUB111
         .       .
         .       .
 63    HYD111............
         V
         V
 66    SUB109 ***
         V
         V
 74    SUB108 ***
         V
         V
 82    SUB107 *** .
```

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        .
        .
89       .   SUB104
        .      V
        .      V
97       .   SUB105 ***
        .      .
        .      .
104      .      .   SUB103
        .      .      .
        .      .      .
111      .   HYD103............
        .      V
        .      V
114      .   SUB106 ***
        .      .
        .      .
121    SUB106............
        V
        V
124    SUB102 ***
        V
        V
132    SUB101 ***
        .
        .
139      .   SUB094
        .      V
        .      V
147      .   SUB096 ***
        .      .
        .      .
155      .      .   SUB095
        .      .      V
        .      .      V
163      .      .   SUB133 ***
        .      .      .
        .      .      .
171      .   HYD096............
        .      V
        .      V
174      .   SUB097 ***
        .      V
        .      V
181      .   SUB099 ***
        .      .
        .      .
188      .      .   SUB092
        .      .      V
        .      .      V
196      .      .   SUB093 ***
        .      .      V
        .      .      V
204      .      .   SUB098 ***
        .      .      .
        .      .      .
211      .   HYD098............
        .      V
        .      V
214      .   SUB100 ***
        .      .
        .      .
222    HYD100............
        V
        V
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225   SUB091 ***
       .
       .
233     .   SUB088
       .     V
       .     V
241     .   SUB087 ***
       .     .
       .     .
248     .     .   SUB132
       .     .     .
       .     .     .
256     .   HYD087............
       .     V
       .     V
259     .   SUB089 ***
       .     .
       .     .
266     .     .   SUB085
       .     .     V
       .     .     V
274     .     .   SUB086 ***
       .     .     .
       .     .     .
281     .   HYD086............
       .     V
       .     V
284     .   SUB090 ***
       .     .
       .     .
291   HYD091............
       V
       V
294   SUB069 ***
       .
       .
302     .   SUB067
       .     V
       .     V
310     .   SUB068 ***
       .     .
       .     .
318   HYD069............
       V
       V
321   SUB070 ***
       .
       .
328     .   SUB066
       .     .
       .     .
336   HYD070............
       V
       V
339   SUB071 ***
       .
       .
346     .   SUB075
       .     V
       .     V
354     .   SUB076 ***
       .     .
       .     .
362     .     .   SUB074
       .     .     .
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     .      .      .
370  .   HYD076............
     .      V
     .      V
373  .   SUB077 ***
     .      .
     .      .
380  .      .   SUB078
     .      .      V
     .      .      V
388  .      .   SUB079 ***
     .      .      V
     .      .      V
396  .      .   SUB080 ***
     .      .      .
     .      .      .
403  .   HYD080............
     .      V
     .      V
406  .   SUB081 ***
     .      .
     .      .
413  .      .   SUB082
     .      .      V
     .      .      V
420  .      .   SUB083 ***
     .      .      V
     .      .      V
427  .      .   SUB084 ***
     .      .      .
     .      .      .
434  .   HYD084............
     .      V
     .      V
437  .   SUB073 ***
     .      .
     .      .
444  .      .   SUB057
     .      .      V
     .      .      V
452  .      .   SUB058 ***
     .      .      V
     .      .      V
459  .      .   SUB059 ***
     .      .      .
     .      .      .
466  .      .      .   SUB060
     .      .      .      V
     .      .      .      V
474  .      .      .   SUB061 ***
     .      .      .      V
     .      .      .      V
482  .      .      .   SUB062 ***
     .      .      .      .
     .      .      .      .
489  .      .   HYD062............
     .      .      .
     .      .      .
492  .      .      .   SUB063
     .      .      .      V
     .      .      .      V
500  .      .      .   SUB064 ***
     .      .      .      .
     .      .      .      .
508  .      .   HYD064............
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        .       .       V
        .       .       V
511     .       .     SUB065 ***
        .       .       .
        .       .       .
518     .     HYD073.............
        .       V
        .       V
521     .     SUB072 ***
        .       .
        .       .
528   HYD072.............
       V
       V
531   SUB056 ***
        .
        .
538     .     SUB052
        .       V
        .       V
545     .     SUB053 ***
        .       V
        .       V
552     .     SUB054 ***
        .       .
        .       .
559     .       .     SUB051
        .       .       .
        .       .       .
566     .     HYD054.............
        .       V
        .       V
569     .     SUB055 ***
        .       .
        .       .
576   HYD056.............
       V
       V
579   SUB050 ***
        .
        .
587     .     SUB027
        .       V
        .       V
594     .     SUB028 ***
        .       .
        .       .
601     .       .     SUB029
        .       .       V
        .       .       V
609     .       .     SUB030 ***
        .       .       V
        .       .       V
616     .       .     SUB031 ***
        .       .       .
        .       .       .
623     .     HYD031.............
        .       V
        .       V
626     .     SUB032 ***
        .       .
        .       .
633     .       .     SUB033
        .       .       V
        .       .       V
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641     .       .    SUB034 ***
      .       .       .
      .       .       .
648     .    HYD034............
      .       V
      .       V
651     .    SUB035 ***
      .       .
      .       .
658     .       .    SUB036
      .       .       V
      .       .       V
666     .       .    SUB037 ***
      .       .       V
      .       .       V
674     .       .    SUB038 ***
      .       .       V
      .       .       V
681     .       .    SUB039 ***
      .       .       V
      .       .       V
688     .       .    SUB040 ***
      .       .       .
      .       .       .
695     .    HYD040............
      .       V
      .       V
698     .    SUB041 ***
      .       .
      .       .
705     .       .    SUB023
      .       .       V
      .       .       V
712     .       .    SUB024 ***
      .       .       V
      .       .       V
719     .       .    SUB025 ***
      .       .       .
      .       .       .
726     .       .       .    SUB116
      .       .       .       V
      .       .       .       V
733     .       .       .    SUB022 ***
      .       .       .       .
      .       .       .       .
740     .       .    HYD025............
      .       .       V
      .       .       V
743     .       .    SUB026 ***
      .       .       .
      .       .       .
750     .    HYD041............
      .       V
      .       V
753     .    SUB042 ***
      .       .
      .       .
760     .       .    SUB043
      .       .       V
      .       .       V
767     .       .    SUB044 ***
      .       .       .
      .       .       .
774     .       .       .    SUB045
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        .       .       .       .
781       .       .   HYD044............
        .       .       V
        .       .       V
784       .       .   SUB046 ***
        .       .       .
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791       .       .       .   SUB047
        .       .       .       .
        .       .       .       .
798       .       .   HYD047............
        .       .       V
        .       .       V
801       .       .   SUB048 ***
        .       .       .
        .       .       .
808       .   HYD048............
        .       V
        .       V
811       .   SUB049 ***
        .       .
        .       .
818   HYD049............
        V
        V
821   SUB021 ***
        V
        V
829   SUB020 ***
        .
        .
837       .   SUB019
        .       .
        .       .
845   HYD019............
        V
        V
848   SUB018 ***
        .
        .
855       .   SUB016
        .       V
        .       V
863       .   SUB017 ***
        .       .
        .       .
871   HYD017............
        V
        V
874   SUB015 ***
        .
        .
881       .   SUB005
        .       V
        .       V
888       .   SUB006 ***
        .       V
        .       V
895       .   SUB007 ***
        .       V
        .       V
902       .   SUB008 ***
        .       .
        .       .
909       .       .   SUB009
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        .       .       V
        .       .       V
916     .       .     SUB010 ***
        .       .       V
        .       .       V
923     .       .     SUB011 ***
        .       .       V
        .       .       V
930     .       .     SUB012 ***
        .       .       .
        .       .       .
937     .     HYD012............
        .       V
        .       V
940     .     SUB013 ***
        .       V
        .       V
947     .     SUB014 ***
        .       .
        .       .
954   HYD014............
        V
        V
957   SUB130 ***
        .
        .
964     .     SUB001
        .       V
        .       V
971     .     SUB002 ***
        .       V
        .       V
978     .     SUB003 ***
        .       V
        .       V
985     .     SUB004 ***
        .       .
        .       .
992   HYD130............
        V
        V
995   SUB131 ***

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1                                        ****
                 FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
        U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                         ****


                 CITY OF PHOENIX  --  EAST BISCUIT FLAT DRAINAGE STUDY
                 KINEMATIC WAVE WATERSHED MODEL  -  EXISTING CONDITION (1)
                  100 YR. - 24 HR. STORM     CASE 1 DEVELOPMENT

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

  IT        HYDROGRAPH TIME DATA
              NMIN        20  MINUTES IN COMPUTATION INTERVAL
              IDATE     1   0  STARTING DATE
              ITIME      0000  STARTING TIME
```

NQ 80 NUMBER OF HYDROGRAPH ORDINATES
NDDATE 2 0 ENDING DATE
NDTIME 0220 ENDING TIME

COMPUTATION INTERVAL .33 HOURS
TOTAL TIME BASE 26.33 HOURS

ENGLISH UNITS

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB112	119.	6.00	16.	4.	4.	.05		
+	HYDROGRAPH AT	SUB113	495.	6.00	64.	18.	16.	.22		
+	HYDROGRAPH AT	SUB115	177.	6.00	22.	6.	6.	.08		
+	HYDROGRAPH AT	SUB114	410.	6.00	53.	15.	13.	.20		
+	2 COMBINED AT	HYD114	905.	6.00	118.	32.	29.	.42		
+	HYDROGRAPH AT	SUB110	1027.	6.00	136.	37.	34.	.49		
+	HYDROGRAPH AT	SUB111	646.	6.00	83.	23.	21.	.29		
+	2 COMBINED AT	HYD111	1673.	6.00	219.	60.	55.	.77		
+	HYDROGRAPH AT	SUB109	1741.	6.00	247.	68.	62.	.87		
+	HYDROGRAPH AT	SUB108	1890.	6.00	315.	86.	79.	1.08		
+	HYDROGRAPH AT	SUB107	1759.	6.00	349.	97.	88.	1.21		
+	HYDROGRAPH AT	SUB104	239.	6.00	31.	9.	8.	.11		
+	HYDROGRAPH AT	SUB105	317.	6.33	62.	17.	16.	.22		
+	HYDROGRAPH AT	SUB103	210.	6.33	40.	11.	10.	.14		
+	2 COMBINED AT	HYD103	527.	6.33	102.	28.	26.	.37		
+	HYDROGRAPH AT	SUB106	611.	6.33	135.	37.	34.	.49		

	2 COMBINED AT							
+		SUB106	1914.	6.00	483.	134.	122.	1.70
	HYDROGRAPH AT							
+		SUB102	2753.	6.00	618.	172.	156.	2.16
	HYDROGRAPH AT							
+		SUB101	2591.	6.00	637.	178.	162.	2.24
	HYDROGRAPH AT							
+		SUB094	414.	6.00	51.	14.	13.	.17
	HYDROGRAPH AT							
+		SUB096	684.	6.00	104.	29.	26.	.36
	HYDROGRAPH AT							
+		SUB095	223.	6.00	28.	8.	7.	.10
	HYDROGRAPH AT							
+		SUB133	342.	6.00	55.	15.	14.	.20
	2 COMBINED AT							
+		HYD096	1026.	6.00	160.	44.	40.	.56
	HYDROGRAPH AT							
+		SUB097	1089.	6.33	236.	65.	59.	.80
	HYDROGRAPH AT							
+		SUB099	1142.	6.33	245.	67.	61.	.83
	HYDROGRAPH AT							
+		SUB092	149.	6.00	19.	5.	5.	.06
	HYDROGRAPH AT							
+		SUB093	489.	6.00	67.	18.	17.	.24
	HYDROGRAPH AT							
+		SUB098	510.	6.00	100.	27.	25.	.34
	2 COMBINED AT							
+		HYD098	1577.	6.33	344.	94.	86.	1.17
	HYDROGRAPH AT							
+		SUB100	1871.	6.33	427.	118.	108.	1.48
	2 COMBINED AT							
+		HYD100	4261.	6.33	1063.	296.	269.	3.72
	HYDROGRAPH AT							
+		SUB091	4319.	6.33	1096.	306.	278.	3.83
	HYDROGRAPH AT							
+		SUB088	703.	6.00	91.	25.	23.	.30
	HYDROGRAPH AT							
+		SUB087	704.	6.00	113.	31.	28.	.38
	HYDROGRAPH AT							
+		SUB132	148.	6.00	23.	6.	6.	.08
	2 COMBINED AT							
+		HYD087	852.	6.00	136.	37.	34.	.46
	HYDROGRAPH AT							
+		SUB089	752.	6.00	148.	41.	37.	.51

	HYDROGRAPH AT						
-	SUB085	233.	6.00	30.	8.	7.	.11
	HYDROGRAPH AT						
+	SUB086	282.	6.33	57.	16.	14.	.21
	2 COMBINED AT						
+	HYD086	1005.	6.00	205.	56.	51.	.72
	HYDROGRAPH AT						
+	SUB090	1004.	6.33	223.	61.	56.	.78
	2 COMBINED AT						
+	HYD091	5323.	6.33	1318.	367.	334.	4.60
	HYDROGRAPH AT						
+	SUB069	5454.	6.33	1405.	393.	358.	4.89
	HYDROGRAPH AT						
+	SUB067	500.	6.00	64.	17.	16.	.21
	HYDROGRAPH AT						
+	SUB068	605.	6.00	87.	24.	22.	.29
	2 COMBINED AT						
+	HYD069	5715.	6.33	1488.	416.	379.	5.17
	HYDROGRAPH AT						
+	SUB070	5715.	6.33	1490.	417.	380.	5.19
	HYDROGRAPH AT						
+	SUB066	156.	6.00	20.	5.	5.	.07
	2 COMBINED AT						
+	HYD070	5758.	6.33	1509.	423.	385.	5.25
	HYDROGRAPH AT						
+	SUB071	5805.	6.33	1522.	427.	389.	5.32
	HYDROGRAPH AT						
+	SUB075	241.	6.00	31.	9.	8.	.10
	HYDROGRAPH AT						
+	SUB076	531.	6.00	76.	21.	19.	.26
	HYDROGRAPH AT						
+	SUB074	166.	6.00	24.	6.	6.	.08
	2 COMBINED AT						
+	HYD076	697.	6.00	100.	27.	25.	.34
	HYDROGRAPH AT						
+	SUB077	637.	6.00	108.	30.	27.	.37
	HYDROGRAPH AT						
+	SUB078	427.	6.00	56.	15.	14.	.18
	HYDROGRAPH AT						
-	SUB079	774.	6.00	110.	30.	27.	.37
	HYDROGRAPH AT						
-	SUB080	672.	6.00	124.	34.	31.	.42
	2 COMBINED AT						

	HYD080	1309.	6.00	233.	64.	58.	.79
	HYDROGRAPH AT						
+	SUB081	1173.	6.00	241.	66.	61.	.83
	HYDROGRAPH AT						
+	SUB082	119.	6.33	18.	5.	5.	.07
	HYDROGRAPH AT						
+	SUB083	346.	6.33	58.	16.	15.	.22
	HYDROGRAPH AT						
+	SUB084	577.	6.33	110.	30.	28.	.41
	2 COMBINED AT						
+	HYD084	1580.	6.33	350.	97.	88.	1.24
	HYDROGRAPH AT						
+	SUB073	1574.	6.33	350.	97.	89.	1.25
	HYDROGRAPH AT						
+	SUB057	117.	6.00	15.	4.	4.	.05
	HYDROGRAPH AT						
+	SUB058	350.	6.33	60.	17.	15.	.20
	HYDROGRAPH AT						
+	SUB059	388.	6.33	72.	20.	18.	.25
	HYDROGRAPH AT						
+	SUB060	250.	6.00	33.	9.	8.	.10
	HYDROGRAPH AT						
+	SUB061	427.	6.00	59.	16.	15.	.19
	HYDROGRAPH AT						
+	SUB062	407.	6.00	73.	20.	18.	.24
	2 COMBINED AT						
+	HYD062	670.	6.33	144.	40.	36.	.49
	HYDROGRAPH AT						
+	SUB063	143.	6.00	19.	5.	5.	.06
	HYDROGRAPH AT						
+	SUB064	237.	6.00	34.	9.	9.	.11
	2 COMBINED AT						
+	HYD064	776.	6.33	178.	49.	45.	.60
	HYDROGRAPH AT						
+	SUB065	1098.	6.33	235.	65.	59.	.81
	2 COMBINED AT						
+	HYD073	2673.	6.33	584.	162.	148.	2.05
	HYDROGRAPH AT						
+	SUB072	2662.	6.33	585.	162.	148.	2.06
	2 COMBINED AT						
+	HYD072	8467.	6.33	2107.	589.	537.	7.37
	HYDROGRAPH AT						
+	SUB056	8456.	6.33	2154.	601.	548.	7.52

	HYDROGRAPH AT						
+	SUB052	146.	6.33	22.	6.	6.	.08
	HYDROGRAPH AT						
+	SUB053	227.	6.33	41.	11.	10.	.15
	HYDROGRAPH AT						
+	SUB054	210.	6.67	53.	15.	13.	.19
	HYDROGRAPH AT						
+	SUB051	58.	6.33	10.	3.	2.	.04
	2 COMBINED AT						
+	HYD054	247.	6.67	62.	17.	16.	.23
	HYDROGRAPH AT						
+	SUB055	330.	6.67	85.	24.	22.	.31
	2 COMBINED AT						
+	HYD056	8753.	6.33	2238.	625.	569.	7.83
	HYDROGRAPH AT						
+	SUB050	8743.	6.33	2315.	648.	591.	8.12
	HYDROGRAPH AT						
+	SUB027	83.	6.33	12.	3.	3.	.05
	HYDROGRAPH AT						
+	SUB028	221.	6.33	40.	11.	10.	.17
	HYDROGRAPH AT						
+	SUB029	255.	6.00	34.	9.	8.	.11
	HYDROGRAPH AT						
+	SUB030	255.	6.33	54.	15.	13.	.18
	HYDROGRAPH AT						
+	SUB031	331.	6.33	69.	19.	17.	.24
	2 COMBINED AT						
+	HYD031	553.	6.33	109.	30.	27.	.41
	HYDROGRAPH AT						
+	SUB032	565.	6.33	114.	32.	29.	.44
	HYDROGRAPH AT						
+	SUB033	121.	6.00	17.	5.	4.	.06
	HYDROGRAPH AT						
+	SUB034	209.	6.33	40.	11.	10.	.15
	2 COMBINED AT						
+	HYD034	774.	6.33	154.	43.	39.	.58
	HYDROGRAPH AT						
+	SUB035	830.	6.33	185.	52.	47.	.72
	HYDROGRAPH AT						
+	SUB036	190.	6.00	25.	7.	6.	.08
	HYDROGRAPH AT						
+	SUB037	666.	6.00	89.	24.	22.	.29
	HYDROGRAPH AT						
+	SUB038	598.	6.00	129.	35.	32.	.44

	HYDROGRAPH AT						
	SUB039	649.	6.33	139.	38.	35.	.48
	HYDROGRAPH AT						
	SUB040	645.	6.33	148.	41.	37.	.52
	2 COMBINED AT						
	HYD040	1475.	6.33	333.	93.	85.	1.23
	HYDROGRAPH AT						
	SUB041	1930.	6.33	341.	94.	86.	1.24
	HYDROGRAPH AT						
	SUB023	190.	6.33	23.	6.	6.	.08
	HYDROGRAPH AT						
	SUB024	259.	6.33	40.	11.	10.	.17
	HYDROGRAPH AT						
	SUB025	273.	6.33	50.	14.	13.	.20
	HYDROGRAPH AT						
	SUB116	105.	6.33	15.	4.	4.	.06
	HYDROGRAPH AT						
	SUB022	273.	6.33	49.	14.	12.	.21
	2 COMBINED AT						
	HYD025	546.	6.33	99.	27.	25.	.41
	HYDROGRAPH AT						
	SUB026	588.	6.67	144.	40.	37.	.59
	2 COMBINED AT						
	HYD041	2423.	6.33	485.	135.	123.	1.83
	HYDROGRAPH AT						
	SUB042	2248.	6.33	521.	146.	133.	2.02
	HYDROGRAPH AT						
	SUB043	100.	6.33	16.	4.	4.	.06
	HYDROGRAPH AT						
	SUB044	163.	6.33	29.	8.	7.	.11
	HYDROGRAPH AT						
	SUB045	72.	6.33	12.	3.	3.	.05
	2 COMBINED AT						
	HYD044	235.	6.33	42.	11.	10.	.16
	HYDROGRAPH AT						
	SUB046	227.	6.33	44.	12.	11.	.17
	HYDROGRAPH AT						
	SUB047	86.	6.33	14.	4.	3.	.05
	2 COMBINED AT						
	HYD047	313.	6.33	58.	16.	15.	.21
	HYDROGRAPH AT						
	SUB048	298.	6.33	61.	17.	16.	.23
	2 COMBINED AT						

	HYD048	2546.	6.33	582.	163.	148.	2.25
	HYDROGRAPH AT						
+	SUB049	2350.	6.67	603.	169.	154.	2.35
	2 COMBINED AT						
-	HYD049	10950.	6.33	2912.	817.	745.	10.47
	HYDROGRAPH AT						
+	SUB021	10775.	6.33	2940.	828.	754.	10.64
	HYDROGRAPH AT						
+	SUB020	10564.	6.33	2982.	842.	768.	10.83
	HYDROGRAPH AT						
+	SUB019	327.	6.00	42.	12.	11.	.15
	2 COMBINED AT						
-	HYD019	10672.	6.33	3023.	854.	778.	10.98
	HYDROGRAPH AT						
+	SUB018	10610.	6.33	3023.	854.	779.	10.99
	HYDROGRAPH AT						
+	SUB016	659.	6.00	87.	24.	22.	.28
	HYDROGRAPH AT						
+	SUB017	681.	6.00	115.	31.	29.	.36
	2 COMBINED AT						
+	HYD017	11032.	6.33	3134.	886.	807.	11.36
	HYDROGRAPH AT						
-	SUB015	10984.	6.33	3179.	899.	819.	11.53
	HYDROGRAPH AT						
+	SUB005	117.	6.33	17.	5.	4.	.06
	HYDROGRAPH AT						
+	SUB006	315.	6.33	56.	15.	14.	.20
	HYDROGRAPH AT						
+	SUB007	429.	6.33	99.	28.	25.	.35
	HYDROGRAPH AT						
+	SUB008	493.	6.67	122.	34.	31.	.44
	HYDROGRAPH AT						
+	SUB009	59.	6.33	9.	3.	2.	.04
	HYDROGRAPH AT						
+	SUB010	170.	6.33	32.	9.	8.	.12
	HYDROGRAPH AT						
+	SUB011	223.	6.33	47.	13.	12.	.17
	HYDROGRAPH AT						
+	SUB012	270.	6.67	68.	19.	17.	.25
	2 COMBINED AT						
+	HYD012	764.	6.67	190.	53.	49.	.68
	HYDROGRAPH AT						
-	SUB013	827.	6.67	227.	64.	59.	.82

	HYDROGRAPH AT						
+	SUB014	801.	6.67	251.	72.	66.	.92
	2 COMBINED AT						
+	HYD014	11380.	6.33	3425.	971.	885.	12.45
	HYDROGRAPH AT						
+	SUB130	11478.	6.33	3452.	979.	893.	12.56
	HYDROGRAPH AT						
+	SUB001	207.	6.33	37.	10.	9.	.12
	HYDROGRAPH AT						
+	SUB002	278.	6.33	62.	17.	16.	.22
	HYDROGRAPH AT						
+	SUB003	337.	6.67	85.	24.	22.	.30
	HYDROGRAPH AT						
+	SUB004	369.	6.67	93.	26.	24.	.33
	2 COMBINED AT						
+	HYD130	11797.	6.33	3544.	1006.	916.	12.89
	HYDROGRAPH AT						
+	SUB131	11416.	6.67	3537.	1008.	919.	12.93

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

APPENDIX B

1 ****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA.
95616

****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED
TO 3

1 HEC-1 INPUT PAGE 1

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

  1       ID      CITY OF PHOENIX -- EAST BISCUIT FLAT DRAINAGE STUDY
  2       ID      KINEMATIC WAVE WATERSHED MODEL - FUTURE DEVELOPMENT (2)
  3       ID      100 YR. - 24 HR. STORM   CASE II CONDITION
  4       IT    20                 80
  5       IO     5
          *DIAGRAM

  6       KK  SUB201
  7       KM      RUNOFF FROM SUB-BASIN 201
  8       BA  0.050
  9       LS          98                88
 10       PB   4.33
 11       IN    30
 12       PC    0.0  0.005  0.009  0.010  0.013  0.019  0.021  0.028  0.032  0.044
 13       PC  0.057  0.100  0.660  0.745  0.776  0.800  0.816  0.830  0.840  0.850
 14       PC  0.930  0.934  0.939  0.944  0.950  0.958  0.961  0.963  0.969  0.971
 15       PC  0.974  0.979  0.981  0.985  0.989  0.991  0.993  0.996  1.000  1.000
 16       UK   150   0.16  0.130    23
 17       UK   150  0.180  0.130    77
 18       RK  1500   0.18  0.130  0.005   TRAP     3     2
 19       RK   800   0.05   0.05         TRAP     5     1    NO

 20       KK  SUB202
 21       KM      RUNOFF FROM SUB-BASIN 202
 22       BA  0.170
 23       LS          98                87
 24       UK   150   0.08  0.130    24
 25       UK   150   0.08  0.130    76
 26       RK  1500   0.08   0.05   0.02   TRAP     3     2
 27       RK  2000   0.07   0.05         TRAP     8     1   YES

 28       KK  SUB203
 29       KM      RUNOFF FROM SUB-BASIN 203
 30       BA  0.083
 31       LS          98                88
 32       UK   150   0.10   0.13    24
 33       UK   150   0.10   0.13    76
 34       RK  2000   0.10   0.05   0.01   TRAP     3     2
 35       RK   600   0.08   0.05         TRAP     5     1    NO

 36       KK  SUB204
 37       KM      RUNOFF FROM SUB-BASIN 204
 38       BA  0.117
 39       LS          98                87
```

```
 40      UK    150   0.10   0.13     23
 41      UK    150   0.10   0.13     77
 42      RK   2900   0.10   0.05   0.01   TRAP     4     2
 43      RK   1500   0.08   0.05          TRAP     8     1    YES

 44      KK  HYD204
 45      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 204
 46      HC      2
1                          HEC-1 INPUT                                PAGE  2

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


 47      KK  SUB205
 48      KM       RUNOFF FROM SUB-BASIN 205
 49      BA   0.067
 50      LS          98                 82
 51      UK    150   0.10   0.13     24
 52      UK    150   0.10   0.13     76
 53      RK   1700   0.10   0.05   0.01   TRAP     3     2
 54      RK    800   0.09   0.05          TRAP    18     1    YES

 55      KK  SUB206
 56      KM       RUNOFF FORM SUB-BASIN 206
 57      BA   0.287
 58      LS          98                 85
 59      UK    150   0.09   0.13     24
 60      UK    150   0.09   0.13     76
 61      RK   2000   0.09   0.05   0.02   TRAP     3     2
 62      RK   2600   0.08   0.05          TRAP     8     1    NO

 63      KK  HYD206
 64      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 206
 65      HC      2

 66      KK  SUB207
 67      KM       RUNOFF FROM SUB-BASIN 207
 68      BA   0.095
 69      LS          98                 82
 70      UK    150   0.05   0.13     25
 71      UK    150   0.05   0.13     75
 72      RK   1300   0.05   0.05   0.01   TRAP     3     2
 73      RK   2400   0.03  0.045          TRAP    25     1    YES

 74      KK  SUB208
 75      KM       RUNOFF FORM SUB-BASIN 208
 76      BA   0.349
 77      LS          98                 84
 78      UK    150   0.01   0.13     25
 79      UK    150   0.01   0.13     75
 80      RK    800   0.01   0.02   0.02   TRAP     6   1.5
 81      RK   4600   0.01  0.035          TRAP    50   1.5    YES

 82      KK  SUB209
 83      KM       RUNOFF FROM SUB-BASIN 209
 84      BA   0.293
 85      LS          98                 84
 86      UK    150  0.005   0.13     27
 87      UK    150  0.005   0.13     73
 88      RK    700  0.005   0.02   0.02   TRAP    36     1
 89      RK   4200  0.005   0.02          TRAP    36     1    NO
1                          HEC-1 INPUT                                PAGE  3

LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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 90      KK  SUB210
 91      KM      RUNOFF FROM SUB-BASIN 210
 92      BA  0.258
 93      LS          98              86
 94      UK    150  0.008   0.13    26
 95      UK    150  0.008   0.13    74
 96      RK   2000  0.008   0.02   0.02   TRAP    36     1
 97      RK   4700  0.008  0.035          TRAP    10   1.5    YES

 98      KK  HYD210
 99      KM      CONBINE HYDRAGRAPHS AT OUTLET FROM 210
100      HC      2

101      KK  SUB211
102      KM      RUNOFF FROM SUB-BASIN 211
103      BA  0.537
104      LS          98              87
105      UK    150   0.02   0.13    29
106      UK    150   0.02   0.13    71
107      RK   3500   0.02   0.02   0.02   TRAP    36     1
108      RK   2600  0.008  0.035          TRAP    70   1.5    YES

109      KK  SUB212
110      KM      RUNOFF FROM SUB-BASIN 212
111      BA  0.185
112      LS          98              85
113      UK    150   0.02   0.13    25
114      UK    150   0.02   0.13    75
115      RK   2800   0.02   0.02   0.01   TRAP    36     1
116      RK   2500   0.02   0.02          TRAP    36     1    NO

117      KK  SUB213
118      KM      RUNOFF FROM SUB-BASIN 213
119      BA  0.080
120      LS          98              81
121      UK    150   0.02   0.16    50
122      UK    150   0.02   0.16    50
123      RK   1900   0.02   0.02   0.01   TRAP    36     1
124      RK   2100  0.008  0.035          TRAP    15   1.5    YES

125      KK  SUB214
126      KM      RUNOFF FROM SUB-BASIN 214
127      BA  0.118
128      LS          98              87
129      UK    150   0.18   0.13    27
130      UK    150   0.18   0.13    73
131      RK   1800   0.18   0.05   0.01   TRAP     3     2
132      RK   1900   0.15  0.035          TRAP    20   1.5    NO
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```
LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

133      KK  SUB215
134      KM      RUNOFF FROM SUB-BASIN 215
135      BA  0.182
136      LS          98              79
137      UK    150   0.05   0.16    44
138      UK    150   0.05   0.16    56
139      RK   2100   0.05   0.05   0.02   TRAP     3     2
140      RK   3200   0.04  0.035          TRAP    20   1.5    YES

141      KK  HYD215
142      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 215
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143     HC     2

144     KK  SUB216
145     KM      RUNOFF FROM SUB-BASIN 216
146     BA  0.217
147     LS          98              84
148     UK    150  0.005   0.16    49
149     UK    150  0.005   0.16    51
150     RK    200  0.005   0.02   0.02   TRAP    36     1
151     RK   3100  0.008   0.035         TRAP    40    1.5    YES

152     KK  SUB217
153     KM      RUNOFF FROM SUB-BASIN 217
154     BA  0.287
155     LS          98              84
156     UK    150  0.015   0.13    39
157     UK    150  0.015   0.13    61
158     RK   1500  0.015   0.02   0.02   TRAP    36     1
159     RK   2800  0.013   0.01         CIRC     5          NO

160     KK  HYD217
161     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 217
162     HC     2

163     KK  SUB218
164     KM      RUNOFF FROM SUB-BASIN 218
165     BA  0.151
166     LS          98              84
167     UK    150  0.005   0.16    50
168     UK    150  0.005   0.16    50
169     RK   2100  0.005   0.02   0.01   TRAP    36     1
170     RK   3000  0.008   0.035         TRAP    40    1.5    YES

171     KK  SUB219
172     KM      RUNOFF FROM SUB-BASIN 219
173     BA  0.382
174     LS          98              86
175     UK    150   0.08   0.13    26
176     UK    150   0.08   0.13    74
177     RK   3000   0.08   0.05   0.02   TRAP     4     2
178     RK   2500   0.05   0.05         TRAP    10    1.5    NO
```



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

179     KK  SUB220
180     KM      RUNOFF FROM SUB-BASIN 220
181     BA  0.078
182     LS          98              87
183     UK    150   0.10   0.13    25
184     UK    150   0.10   0.13    75
185     RK   2000   0.10   0.05   0.01   TRAP     3     2
186     RK   2100   0.08   0.05         TRAP     8     1    NO

187     KK  HYD220
188     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 220
189     HC     2

190     KK  SUB221
191     KM      RUNOFF FROM SUB-BASIN 221
192     BA  0.054
193     LS          98              78
194     UK    150   0.04   0.16    48
195     UK    150   0.04   0.16    52
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```
196     RK   2200   0.04   0.05  0.005   TRAP     3     2
197     RK   2500   0.03   0.05         TRAP    12   1.5   YES

198     KK  SUB222
199     KM      RUNOFF FROM SUB-BASIN 222
200     BA  0.126
201     LS          98              85
202     UK    150   0.10   0.13    24
203     UK    150   0.10   0.13    76
204     RK   1800   0.10   0.05  0.01   TRAP     3     2
205     RK   1200   0.04  0.035         TRAP    12   1.5    NO

206     KK  SUB223
207     KM      RUNOFF FROM SUB-BASIN 223
208     BA  0.202
209     LS          98              81
210     UK    150   0.02   0.16    45
211     UK    150   0.02   0.16    55
212     RK   2200   0.02   0.02  0.02   TRAP    36     1
213     RK   2800   0.02  0.035         TRAP    15   1.5   YES

214     KK  HYD223
215     KM      COMINE HYDROGRAPHS AT OUTLET FROM 223
216     HC      2

217     KK  SUB224
218     KM      RUNOFF FROM SUB-BASIN 224
219     BA  0.364
220     LS          98              83
221     UK    150   0.02   0.16    45
222     UK    150   0.02   0.16    55
223     RK   6600   0.02   0.02  0.02   TRAP    36     1
224     RK   1350  0.005  0.035         TRAP    20   1.5   YES
1                            HEC-1 INPUT                          PAGE  6

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


225     KK  HYD224
226     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 224
227     HC      2

228     KK  SUB225
229     KM      RUNOFF FROM SUB-BASIN 225
230     BA  0.007
231     LS          98              84
232     UK    150  0.008   0.16    50
233     UK    150  0.008   0.16    50
234     RK    150  0.008   0.02  0.005   TRAP    36     1
235     RK    800  0.008  0.035         TRAP    40   1.5   YES

236     KK  HYD225
237     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 225
238     HC      2

239     KK  SUB226
240     KM      RUNOFF FROM SUB-BASIN 226
241     BA  0.347
242     LS          98              81
243     UK    150  0.008   0.16    50
244     UK    150  0.008   0.16    50
245     RK   3000  0.008   0.02  0.02   TRAP    36     1
246     RK   4000  0.008  0.035         TRAP    80   1.5   YES

247     KK  SUB227
```

```
248     KM      RUNOFF FROM SUB-BASIN 227
249     BA  0.208
250     LS          98              87
251     UK   150   0.05   0.13    30
252     UK   150   0.05   0.13    70
253     RK  1800   0.05   0.05   0.02   TRAP    3     2
254     RK  1600   0.10   0.05          TRAP    5   1.5    NO

255     KK  SUB228
256     KM      RUNOFF FROM SUB-BASIN 228
257     BA  0.078
258     LS          98              87
259     UK   150  0.015   0.20    53
260     UK   150  0.015   0.20    47
261     RK  1200  0.015   0.02   0.01   TRAP   36     1
262     RK  1800   0.02  0.035          TRAP   15   1.5    YES

263     KK  SUB229
264     KM      RUNOFF FROM SUB-BASIN 229
265     BA  0.031
266     LS          98              88
267     UK   150  0.015   0.20    70
268     UK   150  0.015   0.20    30
269     RK  1200  0.015   0.02  0.005   TRAP   36     1
270     RK  1350   0.02  0.035          TRAP   15   1.5    YES
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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


271     KK  HYD229
272     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 229
273     HC      2

274     KK  SUB230
275     KM      RUNOFF FROM SUB-BASIN 230
276     BA  0.084
277     LS          98              81
278     UK   150  0.008   0.16    50
279     UK   150  0.008   0.16    50
280     RK  1500  0.008   0.02   0.01   TRAP   36     1
281     RK  1300  0.008  0.035          TRAP   80   1.5    YES

282     KK  SUB231
283     KM      RUNOFF FROM SUB-BASIN 231
284     BA  0.179
285     LS          98              88
286     UK   150   0.18   0.13    23
287     UK   150   0.18   0.13    77
288     RK  1500   0.18   0.05   0.02   TRAP    3     2
289     RK  1100   0.10   0.04          TRAP    5     1    NO

290     KK  SUB232
291     KM      RUNOFF FROM SUB-BASIN 232
292     BA  0.147
293     LS          98              83
294     UK   150   0.04   0.13    28
295     UK   150   0.04   0.13    72
296     RK  1600   0.04   0.05   0.01   TRAP    5     2
297     RK  2300   0.03  0.015          TRAP   25   1.5    YES

298     KK  SUB234
299     KM      RUNOFF FROM SUB-BASIN 234
300     BA  0.101
301     LS          98              88
```

```
302     UK    150   0.18   0.13     23
303     UK    150   0.18   0.13     77
304     RK   1000   0.18   0.05   0.01   TRAP     2     2
305     RK   1500   0.16   0.05          TRAP     5     1     NO

306     KK  SUB235
307     KM       RUNOFF FROM SUB-BASIN 235
308     BA  0.124
309     LS          98                88
310     UK    150   0.04   0.13     24
311     UK    150   0.04   0.13     76
312     RK   2500   0.04   0.05   0.01   TRAP     5     2
313     RK   2100   0.03  0.035          TRAP    20   1.5    YES
1                            HEC-1 INPUT                                PAGE 8

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


314     KK  HYD235
315     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 235
316     HC      2

317     KK  SUB236
318     KM       RUNOFF FROM SUB-BASIN 236
319     BA  0.146
320     LS          98                82
321     UK    150   0.02   0.16     50
322     UK    150   0.02   0.16     50
323     RK    800   0.02   0.02   0.01   TRAP    36     1
324     RK   3600  0.025  0.035          TRAP    20   1.5    YES

325     KK  SUB237
326     KM       RUNOFF FROM SUB-BASIN 237
327     BA  0.010
328     LS          98                81
329     UK    150   0.02   0.16     50
330     UK    150   0.02   0.16     50
331     RK    250   0.02   0.02  0.005   TRAP    36     1
332     RK    800   0.02  0.035          TRAP    35   1.5    YES

333     KK  SUB240
334     KM       RUNOFF FROM SUB-BASIN 240
335     BA  0.056
336     LS          98                88
337     UK    150   0.04   0.13     24
338     UK    150   0.04   0.13     76
339     RK   1500   0.04   0.05  0.005   TRAP     5     1
340     RK    500   0.01  0.015          CIRC     4           NO

341     KK  SUB238
342     KM       RUNOFF FROM SUB-BASIN 238
343     BA  0.060
344     LS          98                88
345     UK    150   0.18   0.13     23
346     UK    150   0.18   0.13     77
347     RK   1000   0.18   0.05  0.005   TRAP     2     1
348     RK   1000   0.16   0.05          TRAP     6     1     NO

349     KK  SUB239
350     KM       RUNOFF FROM SUB-BASIN 239
351     BA  0.022
352     LS          98                88
353     UK    150   0.03   0.13     24
354     UK    150   0.03   0.13     76
355     RK    700   0.03   0.05  0.005   TRAP     5     1
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356      RK   1400   0.05   0.05         TRAP     10      1    YES
1                              HEC-1 INPUT                                PAGE  9

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


357      KK  HYD239
358      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 239
359      HC      2

360      KK  SUB241
361      KM       RUNOFF FROM SUB-BASIN 241
362      BA  0.020
363      LS          98                83
364      UK    150   0.03   0.16     50
365      UK    150   0.03   0.16     50
366      RK    700   0.03   0.02  0.005   TRAP     36      1
367      RK   1000   0.03  0.015         TRAP     15    1.5    YES

368      KK  SUB242
369      KM       RUNOFF FROM SUB-BASIN 242
370      BA  0.105
371      LS          98                88
372      UK    150   0.12   0.13     23
373      UK    150   0.12   0.13     77
374      RK   1000   0.12   0.05   0.01   TRAP      2      1
375      RK   1600   0.05   0.05         TRAP      6      1    NO

376      KK  SUB243
377      KM       RUNOFF FROM SUB-BASIN 243
378      BA  0.087
379      LS          98                84
380      UK    150   0.05   0.13     25
381      UK    150   0.05   0.13     75
382      RK   1700   0.05   0.05   0.01   TRAP      3      2
383      RK   2100   0.04  0.045         TRAP     10      1    YES

384      KK  HYD243
385      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 243
386      HC      2

387      KK  SUB245
388      KM       RUNOFF FROM SUB-BASIN 245
389      BA  0.049
390      LS          98                88
391      UK    150   0.12   0.13     23
392      UK    150   0.12   0.13     77
393      RK    800   0.12   0.05  0.005   TRAP      2      2
394      RK   1200   0.12   0.05         TRAP      5      1    NO

395      KK  SUB246
396      KM       RUNOFF FROM SUB-BASIN 246
397      BA  0.129
398      LS          98                87
399      UK    150   0.02   0.13     24
400      UK    150   0.02   0.13     76
401      RK   2200   0.02   0.02   0.01   TRAP     36      1
402      RK   3200   0.03  0.035         TRAP     15    1.5    YES
1                              HEC-1 INPUT                                PAGE 10

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


403      KK  SUB247
404      KM       RUNOFF FROM SUB-BASIN 247
```

```
405     BA  0.031
406     LS          98              80
407     UK    150   0.02   0.16    38
408     UK    150   0.02   0.16    62
409     RK   1000   0.02   0.02  0.005   TRAP    36     1
410     RK   1200   0.03  0.015         TRAP    20   1.5   YES

411     KK  HYD247
412     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 247
413     HC     2

414     KK  SUB244
415     KM      RUNOFF FROM SUB-BASIN 244
416     BA  0.074
417     LS          98              86
418     UK    150   0.03   0.16    39
419     UK    150   0.03   0.16    61
420     RK   1500   0.03   0.05  0.005   TRAP     3     2
421     RK   1600   0.03  0.045         TRAP    12     1   YES

422     KK  SUB249
423     KM      RUNOFF FROM SUB-BASIN 249
424     BA  0.134
425     LS          98              81
426     UK    150  0.015   0.16    50
427     UK    150  0.015   0.16    50
428     RK   2600  0.015   0.02   0.01   TRAP    36     1
429     RK   1900   0.02  0.035         TRAP    25   1.5   YES

430     KK  HYD249
431     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 249
432     HC     2

433     KK  SUB250
434     KM      RUNOFF FROM SUB-BASIN 250
435     BA  0.417
436     LS          98              82
437     UK    150   0.01   0.16    50
438     UK    150   0.01   0.16    50
439     RK   4700   0.01   0.02   0.02   TRAP    36     1
440     RK   1800   0.01  0.035         TRAP    40   1.5   YES

441     KK  HYD250
442     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 250
443     HC     2

444     KK  SUB251
445     KM      RUNOFF FROM SUB-BASIN 251
446     BA  0.154
447     LS          98              87
448     UK    150  0.007   0.20    68
449     UK    150  0.007   0.20    32
```



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

450     RK   2500  0.007   0.02   0.01   TRAP    36     1
451     RK   2100   0.01  0.035         TRAP   100   1.5   YES

452     KK  SUB252
453     KM      RUNOFF FROM SUB-BASIN 252
454     BA  0.195
455     LS          98              89
456     UK    150  0.007   0.13    71
457     UK    150  0.007   0.13    29
```

```
458     RK   3100  0.007   0.02   0.02   TRAP    36     1
459     RK   2000   0.01   0.02          TRAP    36     1    NO

460     KK  SUB253
461     KM       RUNOFF FROM SUB-BASIN 253
462     BA  0.019
463     LS          98                86
464     UK    150  0.007   0.20    70
465     UK    150  0.007   0.20    30
466     RK    600  0.007   0.02  0.005   TRAP    36     1
467     RK   1200   0.01  0.015         CIRC     4          YES

468     KK  HYD253
469     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 253
470     HC      2

471     KK  SUB254
472     KM       RUNOFF FROM SUB-BASIN 254
473     BA  0.325
474     LS          98                85
475     UK    150  0.007   0.20    68
476     UK    150  0.007   0.20    32
477     RK   3500  0.007   0.02   0.02   TRAP    36     1
478     RK   2300   0.01  0.035         TRAP   100   1.5    YES

479     KK  SUB255
480     KM       RUNOFF FROM SUB-BASIN 255
481     BA  0.080
482     LS          98                88
483     UK    150   0.18   0.13    23
484     UK    150   0.18   0.13    77
485     RK   1300   0.18   0.05   0.01   TRAP     2     2
486     RK    700   0.18   0.05         TRAP     4     1    NO

487     KK  SUB256
488     KM       RUNOFF FROM SUB-BASIN 256
489     BA  0.206
490     LS          98                88
491     UK    150   0.18   0.13    23
492     UK    150   0.18   0.13    77
493     RK   2400   0.18   0.05   0.02   TRAP     3     2
494     RK   2000   0.15   0.05         TRAP    10     1    YES
```



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

495     KK  SUB257
496     KM       RUNOFF FROM SUB-BASIN 257
497     BA  0.088
498     LS          98                84
499     UK    150   0.04   0.13    24
500     UK    150   0.04   0.13    76
501     RK   1600   0.04  0.035   0.01   TRAP     5     2
502     RK   1700   0.05  0.035         TRAP     8     2    YES

503     KK  SUB258
504     KM       RUNOFF FROM SUB-BASIN 258
505     BA  0.197
506     LS          98                82
507     UK    150   0.02   0.13    25
508     UK    150   0.02   0.13    75
509     RK   1800   0.02   0.02   0.02   TRAP    36     1
510     RK   3500  0.025  0.035         TRAP    20   1.5    YES
```

```
511     KK  SUB259
512     KM      RUNOFF FROM SUB-BASIN 259
513     BA  0.137
514     LS          98              78
515     UK   150  0.007   0.16    55
516     UK   150  0.007   0.16    45
517     RK  2500  0.007   0.02   0.01   TRAP    36     1
518     RK  3500   0.01  0.035         TRAP    30    1.5    YES

519     KK  SUB260
520     KM      RUNOFF FROM SUB-BASIN 260
521     BA  0.014
522     LS          98              79
523     UK   150  0.007   0.13    25
524     UK   150  0.007   0.13    75
525     RK   800  0.007   0.02  0.005   TRAP    36     1
526     RK   400  0.025  0.035         TRAP     5    1.5    NO

527     KK  SUB261
528     KM      RUNOFF FROM SUB-BASIN 261
529     BA  0.152
530     LS          98              81
531     UK   150  0.007   0.13    25
532     UK   150  0.007   0.13    75
533     RK  5800  0.007   0.02   0.01   TRAP    36     1
534     RK   800  0.005  0.015         CIRC     4          YES

535     KK  SUB262
536     KM      RUNOFF FROM SUB-BASIN 262
537     BA  0.401
538     LS          98              80
539     UK   150   0.02   0.13    25
540     UK   150   0.02   0.13    75
541     RK  6000   0.02   0.02   0.02   TRAP    36     1
542     RK  1100  0.005  0.015         CIRC     6          YES
```



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

543     KK  SUB263
544     KM      RUNOFF FROM SUB-BASIN 263
545     BA  0.077
546     LS          98              88
547     UK   150   0.15   0.13    23
548     UK   150   0.15   0.13    77
549     RK  1500   0.15   0.05   0.01   TRAP     1     2
550     RK   300   0.11   0.05         TRAP     5     1    NO

551     KK  SUB264
552     KM      RUNOFF FROM SUB-BASIN 264
553     BA  0.090
554     LS          98              80
555     UK   150   0.02   0.13    25
556     UK   150   0.02   0.13    75
557     RK  1500   0.02   0.02   0.01   TRAP    36     1
558     RK  3100  0.025  0.035         TRAP    15    1.5    YES

559     KK  SUB265
560     KM      RUNOFF FROM SUB-BASIN 265
561     BA  0.270
562     LS          98              78
563     UK   150   0.02   0.13    25
564     UK   150   0.02   0.13    75
565     RK  3000   0.02   0.02   0.02   TRAP    36     1
```

```
566     RK   3000  0.025  0.035        TRAP    15    1.5    YES

567     KK  HYD265
568     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 265
569     HC     2

570     KK  SUB266
571     KM      RUNOFF FROM SUB-BASIN 266
572     BA  0.164
573     LS          98              78
574     UK    150   0.02   0.16    50
575     UK    150   0.02   0.16    50
576     RK   2000   0.02   0.02   0.01   TRAP    36     1
577     RK   2500   0.01  0.035        TRAP    25    1.5    YES

578     KK  HYD266
579     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 266
580     HC     2

581     KK  SUB267
582     BA  0.158
583     LS          98              91
584     UK    150   0.01   0.13    88
585     UK    150   0.01   0.13    12
586     RK   4000  0.007   0.02   0.02   TRAP    36     1
587     RK   2000   0.01  0.035        TRAP    40    1.5    YES
```



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

588     KK  SUB285
589     KM      RUNOFF FROM SUB-BASIN 285
590     BA  0.236
591     LS          98              90
592     UK    150   0.01   0.13    76
593     UK    150   0.01   0.13    24
594     RK   3000   0.01   0.02   0.02   TRAP    36     1
595     RK   2500  0.008  0.015        CIRC     4          NO

596     KK  HYD285
597     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 285
598     HC     2

599     KK  SUB268
600     KM      RUNOFF FROM SUB-BASIN 268
601     BA  0.122
602     LS          98              93
603     UK    150  0.007   0.13    94
604     UK    150  0.007   0.13     6
605     RK   2300  0.007   0.02   0.01   TRAP    36     1
606     RK   2500   0.01  0.035        TRAP    40    1.5    YES

607     KK  HYD268
608     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 268
609     HC     2

610     KK  SUB269
611     KM      RUNOFF FROM SUB-BASIN 269
612     BA  0.326
613     LS          98              86
614     UK    150  0.007   0.20    71
615     UK    150  0.007   0.20    29
616     RK   2400  0.007   0.02   0.02   TRAP    36     1
617     RK   3000   0.01  0.035        TRAP   120    1.5    YES
```

```
618     KK  SUB270
619     KM      RUNOFF FROM SUB-BASIN 270
620     BA  0.190
621     LS          98              92
622     UK    150  0.007   0.13    85
623     UK    150  0.007   0.13    15
624     RK   2100  0.007   0.02   0.02   TRAP    36     1
625     RK   2000   0.01   0.02         TRAP    36     1    NO

626     KK  SUB271
627     KM      RUNOFF FROM SUB-BASIN 271
628     BA  0.079
629     LS          98              92
630     UK    150  0.007   0.13    85
631     UK    150  0.007   0.13    15
632     RK   2000  0.007   0.02   0.01   TRAP    36     1
633     RK   1100   0.01  0.035         TRAP    25   1.5    YES
```



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

634     KK  SUB272
635     KM      RUNOFF FROM SUB-BASIN 272
636     BA  0.084
637     LS          98              92
638     UK    150  0.007   0.13    85
639     UK    150  0.007   0.13    15
640     RK   4700  0.007   0.02   0.01   TRAP    36     1
641     RK    900  0.005  0.015         CIRC     4          YES

642     KK  HYD272
643     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 272
644     HC      2

645     KK  SUB274
646     KM      RUNOFF FROM SUB-BASIN 274
647     BA  0.002
648     LS          98              88
649     UK    150  0.007   0.13    85
650     UK    150  0.007   0.13    15
651     RK    150  0.007   0.02  0.002   TRAP    36     1
652     RK    300   0.01  0.035         TRAP   120   1.5    YES

653     KK  SUB273
654     KM      RUNOFF FROM SUB-BASIN 273
655     BA  0.126
656     LS          98              92
657     UK    150   0.02   0.13    81
658     UK    150   0.02   0.13    19
659     RK    800   0.02   0.02   0.01   TRAP    36     1
660     RK   3800   0.04  0.035         TRAP    15   1.5    NO

661     KK  HYD274
662     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 274
663     HC      2

664     KK  SUB275
665     KM      RUNOFF FROM SUB-BASIN 275
666     BA  0.010
667     LS          98              89
668     UK    150  0.007   0.13    85
669     UK    150  0.007   0.13    15
670     RK    900  0.007   0.02  0.005   TRAP    36     1
```

```
671     RK    500   0.01  0.035        TRAP    120    1.5    YES

672     KK  SUB276
673     KM      RUNOFF FROM SUB-BASIN 276
674     BA  0.279
675     LS          98              88
676     UK    150   0.18   0.13    29
677     UK    150   0.18   0.13    71
678     RK   1300   0.18   0.05   0.02   TRAP     3     2
679     RK   3000   0.14   0.05        TRAP     5     1    NO
1                            HEC-1 INPUT                          PAGE 16

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


680     KK  SUB277
681     KM      RUNOFF FROM SUB-BASIN 277
682     BA  0.084
683     LS          98              92
684     UK    150   0.05   0.13    85
685     UK    150   0.05   0.13    15
686     RK   1500   0.05   0.05   0.01   TRAP     2     2
687     RK   4000   0.04   0.05        TRAP    65   1.5    YES

688     KK  HYD277
689     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 277
690     HC     2

691     KK  SUB278
692     KM      RUNOFF FROM SUB-BASIN 278
693     BA  0.304
694     LS          98              92
695     UK    150  0.007   0.13    85
696     UK    150  0.007   0.13    15
697     RK   3600  0.007   0.02   0.02   TRAP    36     1
698     RK   2400   0.01  0.035        TRAP   120   1.5    YES

699     KK  SUB279
700     KM      RUNOFF FROM SUB-BASIN 279
701     BA  0.141
702     LS          98              84
703     UK    150  0.007   0.13    61
704     UK    150  0.007   0.13    39
705     RK   2800  0.007   0.02   0.01   TRAP    36     1
706     RK   2500  0.007   0.02        TRAP    36     1    NO

707     KK  SUB286
708     KM      RUNOFF FROM SUB-BASIN 286
709     BA  0.146
710     LS          98              91
711     UK    150   0.01   0.13    75
712     UK    150   0.01   0.13    25
713     RK   1500   0.01   0.02   0.01   TRAP    36     1
714     RK   4000   0.01   0.02        TRAP    36     1    NO

715     KK  SUB280
716     KM      RUNOFF FROM SUB=BASIN 280
717     BA  0.240
718     LS          98              85
719     UK    150  0.007   0.16    54
720     UK    150  0.007   0.16    46
721     RK   5000  0.007   0.02   0.02   TRAP    36     1
722     RK   1300  0.005  0.015        CIRC     5          YES
1                            HEC-1 INPUT                          PAGE 17
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 723        KK  SUB281
 724        KM      RUNOFF FROM SUB-BASIN 281
 725        BA  0.091
 726        LS          98                86
 727        UK    150   0.01   0.13    24
 728        UK    150   0.01   0.13    76
 729        RK   1800   0.01   0.02   0.01   TRAP    36     1
 730        RK   3500   0.01   0.02          TRAP    36     1     NO

 731        KK  SUB282
 732        KM      RUNOFF FROM SUB-BASIN 282
 733        BA  0.108
 734        LS          98                81
 735        UK    150  0.007   0.13    25
 736        UK    150  0.007   0.13    75
 737        RK   3600  0.007   0.02   0.01   TRAP    36     1
 738        RK   1000  0.005  0.015          CIRC    4          YES

 739        KK  SUB283
 740        KM      RUNOFF FROM SUB-BASIN 283
 741        BA  0.123
 742        LS          98                87
 743        UK    150  0.007   0.13    25
 744        UK    150  0.007   0.13    75
 745        RK   4000  0.007   0.02   0.01   TRAP    36     1
 746        RK    500  0.005  0.015          CIRC    5          YES
 747        ZZ
1
          SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE    (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

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

  6    SUB201
         V
         V
 20    SUB202 ***
         .
         .
 28      .    SUB203
         .       V
         .       V
 36      .    SUB204 ***
         .       .
         .       .
 44    HYD204............
         V
         V
 47    SUB205 ***
         .
         .
 55      .    SUB206
         .       .
         .       .
 63    HYD206............
         V
         V
 66    SUB207 ***
         V
         V
 74    SUB208 ***
```

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        .
        .
 82     .   SUB209
        .     V
        .     V
 90     .   SUB210 ***
        .     .
        .     .
 98   HYD210............
        V
        V
101   SUB211 ***
        .
        .
109     .   SUB212
        .     V
        .     V
117     .   SUB213 ***
        .     .
        .     .
125     .     .   SUB214
        .     .     V
        .     .     V
133     .     .   SUB215 ***
        .     .     .
        .     .     .
141     .   HYD215............
        .     V
        .     V
144     .   SUB216 ***
        .     .
        .     .
152     .     .   SUB217
        .     .     .
        .     .     .
160     .   HYD217............
        .     V
        .     V
163     .   SUB218 ***
        .     .
        .     .
171     .     .   SUB219
        .     .     .
        .     .     .
179     .     .     .   SUB220
        .     .     .     .
        .     .     .     .
187     .     .   HYD220............
        .     .     V
        .     .     V
190     .     .   SUB221 ***
        .     .     .
        .     .     .
198     .     .     .   SUB222
        .     .     .     V
        .     .     .     V
206     .     .     .   SUB223 ***
        .     .     .     .
        .     .     .     .
214     .     .   HYD223............
        .     .     V
        .     .     V
217     .     .   SUB224 ***
        .     .     .
        .     .     .
```

```
225       .    HYD224............
        .       V
        .       V
228       .    SUB225 ***
        .       .
        .       .
236    HYD225............
        V
        V
239    SUB226 ***
        .
        .
247       .    SUB227
        .       V
        .       V
255       .    SUB228 ***
        .       V
        .       V
263       .    SUB229 ***
        .       .
        .       .
271    HYD229............
        V
        V
274    SUB230 ***
        .
        .
282       .    SUB231
        .       V
        .       V
290       .    SUB232 ***
        .       .
        .       .
298       .       .    SUB234
        .       .       V
        .       .       V
306       .       .    SUB235 ***
        .       .       .
        .       .       .
314       .    HYD235............
        .       V
        .       V
317       .    SUB236 ***
        .       V
        .       V
325       .    SUB237 ***
        .       .
        .       .
333       .       .    SUB240
        .       .       .
        .       .       .
341       .       .       .    SUB238
        .       .       .       V
        .       .       .       V
349       .       .       .    SUB239 ***
        .       .       .       .
        .       .       .       .
357       .       .    HYD239............
        .       .       V
        .       .       V
360       .       .    SUB241 ***
        .       .       .
        .       .       .
368       .       .       .    SUB242
        .       .       .       V
```

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        .       .       .       V
376     .       .       .   SUB243 ***
        .       .       .       .
        .       .       .       .
384     .       .   HYD243............
        .       .       .
        .       .       .
387     .       .       .   SUB245
        .       .       .       V
        .       .       .       V
395     .       .       .   SUB246 ***
        .       .       .       V
        .       .       .       V
403     .       .       .   SUB247 ***
        .       .       .       .
        .       .       .       .
411     .       .   HYD247............
        .       .       V
        .       .       V
414     .       .   SUB244 ***
        .       .       V
        .       .       V
422     .       .   SUB249 ***
        .       .       .
        .       .       .
430     .   HYD249............
        .       V
        .       V
433     .   SUB250 ***
        .       .
        .       .
441 HYD250............
     V
     V
444 SUB251 ***
     .
     .
452     .   SUB252
        .       V
        .       V
460     .   SUB253 ***
        .       .
        .       .
468 HYD253............
     V
     V
471 SUB254 ***
     .
     .
479     .   SUB255
        .       V
        .       V
487     .   SUB256 ***
        .       V
        .       V
495     .   SUB257 ***
        .       V
        .       V
503     .   SUB258 ***
        .       V
        .       V
511     .   SUB259 ***
        .       .
        .       .
519     .       .   SUB260
```

```
        .       .       V
        .       .       V
527     .       .     SUB261 ***
        .       .       V
        .       .       V
535     .       .     SUB262 ***
        .       .       .
        .       .       .
543     .       .       .     SUB263
        .       .       .       V
        .       .       .       V
551     .       .       .     SUB264 ***
        .       .       .       V
        .       .       .       V
559     .       .       .     SUB265 ***
        .       .       .       .
        .       .       .       .
567     .       .     HYD265............
        .       .       V
        .       .       V
570     .       .     SUB266 ***
        .       .       .
        .       .       .
578     .     HYD266............
        .       V
        .       V
581     .     SUB267 ***
        .       .
        .       .
588     .       .     SUB285
        .       .       .
        .       .       .
596     .     HYD285............
        .       V
        .       V
599     .     SUB268 ***
        .       .
        .       .
607   HYD268............
        V
        V
610   SUB269 ***
        .
        .
618     .     SUB270
        .       V
        .       V
626     .     SUB271 ***
        .       V
        .       V
634     .     SUB272 ***
        .       .
        .       .
642   HYD272............
        V
        V
645   SUB274 ***
        .
        .
653     .     SUB273
        .       .
        .       .
661   HYD274............
        V
        V
```

```
664    SUB275 ***
        .
        .
672      .    SUB276
        .       V
        .       V
680      .    SUB277 ***
        .       .
        .       .
688    HYD277............
        V
        V
691    SUB278 ***
        .
        .
699      .    SUB279
        .       .
        .       .
707      .       .    SUB286
        .       .       V
        .       .       V
715      .       .    SUB280 ***
        .       .       .
        .       .       .
723      .       .       .    SUB281
        .       .       .       V
        .       .       .       V
731      .       .       .    SUB282 ***
        .       .       .       V
        .       .       .       V
739      .       .       .    SUB283 ***
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1 ****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985

U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

CITY OF PHOENIX -- EAST BISCUIT FLAT DRAINAGE STUDY
KINEMATIC WAVE WATERSHED MODEL - FUTURE DEVELOPMENT (2)
100 YR. - 24 HR. STORM CASE II CONDITION

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

 IT       HYDROGRAPH TIME DATA
            NMIN        20  MINUTES IN COMPUTATION INTERVAL
            IDATE     1   0  STARTING DATE
            ITIME      0000  STARTING TIME
              NQ        80  NUMBER OF HYDROGRAPH ORDINATES
           NDDATE      2   0  ENDING DATE
           NDTIME       0220  ENDING TIME

          COMPUTATION INTERVAL    .33 HOURS
            TOTAL TIME BASE   26.33 HOURS

     ENGLISH UNITS
```

1

RUNOFF SUMMARY

FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB201	111.	6.00	16.	4.	4.	.05		
+	HYDROGRAPH AT	SUB202	470.	6.00	70.	19.	17.	.22		
+	HYDROGRAPH AT	SUB203	186.	6.00	27.	7.	7.	.08		
+	HYDROGRAPH AT	SUB204	426.	6.00	64.	18.	16.	.20		
+	2 COMBINED AT	HYD204	897.	6.00	135.	37.	33.	.42		
+	HYDROGRAPH AT	SUB205	1002.	6.00	154.	42.	38.	.49		
+	HYDROGRAPH AT	SUB206	587.	6.00	87.	24.	22.	.29		
+	2 COMBINED AT	HYD206	1589.	6.00	241.	66.	60.	.77		
+	HYDROGRAPH AT	SUB207	1628.	6.00	270.	74.	67.	.87		
+	HYDROGRAPH AT	SUB208	1727.	6.00	371.	102.	93.	1.22		
+	HYDROGRAPH AT	SUB209	411.	6.00	87.	24.	22.	.29		
+	HYDROGRAPH AT	SUB210	751.	6.33	165.	46.	42.	.55		
+	2 COMBINED AT	HYD210	2387.	6.33	537.	148.	135.	1.77		
+	HYDROGRAPH AT	SUB211	3138.	6.33	704.	195.	178.	2.31		
+	HYDROGRAPH AT	SUB212	278.	6.00	56.	15.	14.	.19		
+	HYDROGRAPH AT	SUB213	389.	6.33	81.	22.	20.	.26		
+	HYDROGRAPH AT	SUB214	255.	6.00	38.	10.	9.	.12		
+	HYDROGRAPH AT	SUB215	451.	6.00	92.	25.	23.	.30		
+	2 COMBINED AT	HYD215	836.	6.33	173.	48.	43.	.56		
	HYDROGRAPH AT									

+	SUB216	1193.	6.33	243.	67.	61.	.78
	HYDROGRAPH AT						
+	SUB217	448.	6.33	91.	25.	23.	.29
	2 COMBINED AT						
+	HYD217	1641.	6.33	333.	92.	84.	1.07
	HYDROGRAPH AT						
+	SUB218	1824.	6.33	381.	106.	96.	1.22
	HYDROGRAPH AT						
+	SUB219	787.	6.00	120.	33.	30.	.38
	HYDROGRAPH AT						
+	SUB220	167.	6.00	25.	7.	6.	.08
	2 COMBINED AT						
+	HYD220	954.	6.00	145.	39.	36.	.46
	HYDROGRAPH AT						
+	SUB221	901.	6.00	161.	44.	40.	.51
	HYDROGRAPH AT						
+	SUB222	259.	6.00	38.	10.	10.	.13
	HYDROGRAPH AT						
+	SUB223	489.	6.33	101.	28.	25.	.33
	2 COMBINED AT						
+	HYD223	1373.	6.00	261.	72.	65.	.84
	HYDROGRAPH AT						
+	SUB224	1782.	6.33	374.	103.	94.	1.21
	2 COMBINED AT						
+	HYD224	3606.	6.33	754.	209.	190.	2.43
	HYDROGRAPH AT						
+	SUB225	3585.	6.33	755.	209.	191.	2.43
	2 COMBINED AT						
+	HYD225	6723.	6.33	1459.	404.	369.	4.74
	HYDROGRAPH AT						
+	SUB226	7030.	6.33	1564.	434.	396.	5.09
	HYDROGRAPH AT						
+	SUB227	439.	6.00	67.	18.	17.	.21
	HYDROGRAPH AT						
+	SUB228	510.	6.00	94.	26.	24.	.29
	HYDROGRAPH AT						
+	SUB229	511.	6.00	106.	29.	26.	.32
	2 COMBINED AT						
+	HYD229	7530.	6.33	1668.	463.	422.	5.40
	HYDROGRAPH AT						
+	SUB230	7529.	6.33	1692.	471.	429.	5.49
	HYDROGRAPH AT						
+	SUB231	406.	6.00	58.	16.	14.	.18

	HYDROGRAPH AT						
+	SUB232	615.	6.00	101.	28.	25.	.33
	HYDROGRAPH AT						
+	SUB234	229.	6.00	33.	9.	8.	.10
	HYDROGRAPH AT						
+	SUB235	428.	6.00	73.	20.	18.	.22
	2 COMBINED AT						
+	HYD235	1043.	6.00	174.	48.	43.	.55
	HYDROGRAPH AT						
+	SUB236	1087.	6.00	220.	60.	55.	.70
	HYDROGRAPH AT						
+	SUB237	1052.	6.00	223.	61.	56.	.71
	HYDROGRAPH AT						
+	SUB240	109.	6.00	18.	5.	5.	.06
	HYDROGRAPH AT						
+	SUB238	136.	6.00	19.	5.	5.	.06
	HYDROGRAPH AT						
+	SUB239	167.	6.00	27.	7.	7.	.08
	2 COMBINED AT						
+	HYD239	275.	6.00	45.	12.	11.	.14
	HYDROGRAPH AT						
+	SUB241	296.	6.00	51.	14.	13.	.16
	HYDROGRAPH AT						
+	SUB242	237.	6.00	34.	9.	8.	.10
	HYDROGRAPH AT						
+	SUB243	383.	6.00	60.	16.	15.	.19
	2 COMBINED AT						
+	HYD243	679.	6.00	111.	30.	28.	.35
	HYDROGRAPH AT						
+	SUB245	111.	6.00	16.	4.	4.	.05
	HYDROGRAPH AT						
+	SUB246	303.	6.00	56.	15.	14.	.18
	HYDROGRAPH AT						
+	SUB247	331.	6.00	65.	18.	16.	.21
	2 COMBINED AT						
+	HYD247	1010.	6.00	177.	48.	44.	.56
	HYDROGRAPH AT						
+	SUB244	1058.	6.00	201.	55.	50.	.63
	HYDROGRAPH AT						
+	SUB249	1112.	6.00	243.	67.	61.	.77
	2 COMBINED AT						
+	HYD249	2164.	6.00	466.	128.	117.	1.47
	HYDROGRAPH AT						
+	SUB250	2835.	6.33	596.	164.	150.	1.89

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     2 COMBINED AT
+                HYD250   10364.  6.33    2285.    635.    579.    7.38

     HYDROGRAPH AT
+                SUB251   10397.  6.33    2336.    650.    592.    7.53

     HYDROGRAPH AT
+                SUB252     413.  6.33      73.     20.     18.     .19

     HYDROGRAPH AT
+                SUB253     444.  6.33      80.     22.     20.     .21

     2 COMBINED AT
+                HYD253   10841.  6.33    2415.    672.    612.    7.75

     HYDROGRAPH AT
+                SUB254   11107.  6.33    2524.    703.    641.    8.07

     HYDROGRAPH AT
+                SUB255     182.  6.00      26.      7.      6.     .08

     HYDROGRAPH AT
+                SUB256     633.  6.00      93.     25.     23.     .29

     HYDROGRAPH AT
+                SUB257     748.  6.00     119.     32.     30.     .37

     HYDROGRAPH AT
+                SUB258     919.  6.00     174.     48.     44.     .57

     HYDROGRAPH AT
+                SUB259    1000.  6.33     215.     59.     54.     .71

     HYDROGRAPH AT
+                SUB260      18.  6.00       4.      1.      1.     .01

     HYDROGRAPH AT
+                SUB261     189.  6.33      42.     12.     11.     .17

     HYDROGRAPH AT
+                SUB262     695.  6.33     148.     42.     38.     .57

     HYDROGRAPH AT
+                SUB263     175.  6.00      25.      7.      6.     .08

     HYDROGRAPH AT
+                SUB264     260.  6.00      49.     13.     12.     .17

     HYDROGRAPH AT
+                SUB265     540.  6.33     118.     33.     30.     .44

     2 COMBINED AT
+                HYD265    1235.  6.33     265.     74.     68.    1.00

     HYDROGRAPH AT
+                SUB266    1474.  6.33     314.     88.     80.    1.17

     2 COMBINED AT
+                HYD266    2474.  6.33     529.    147.    134.    1.88

     HYDROGRAPH AT
+                SUB267    2773.  6.33     589.    164.    150.    2.03

     HYDROGRAPH AT
```

+	SUB285	529.	6.33	90.	25.	22.	.24
	2 COMBINED AT						
+	HYD285	3301.	6.33	679.	189.	172.	2.27
	HYDROGRAPH AT						
+	SUB268	3443.	6.33	725.	202.	184.	2.39
	2 COMBINED AT						
+	HYD268	14550.	6.33	3249.	905.	825.	10.46
	HYDROGRAPH AT						
+	SUB269	14466.	6.33	3353.	937.	854.	10.79
	HYDROGRAPH AT						
+	SUB270	455.	6.33	74.	20.	18.	.19
	HYDROGRAPH AT						
+	SUB271	621.	6.33	105.	29.	26.	.27
	HYDROGRAPH AT						
+	SUB272	787.	6.33	137.	37.	34.	.35
	2 COMBINED AT						
+	HYD272	15253.	6.33	3490.	975.	888.	11.14
	HYDROGRAPH AT						
+	SUB274	15167.	6.33	3489.	975.	888.	11.14
	HYDROGRAPH AT						
+	SUB273	304.	6.33	49.	13.	12.	.13
	2 COMBINED AT						
+	HYD274	15472.	6.33	3537.	988.	901.	11.27
	HYDROGRAPH AT						
+	SUB275	15342.	6.33	3538.	989.	902.	11.28
	HYDROGRAPH AT						
+	SUB276	615.	6.00	92.	25.	23.	.28
	HYDROGRAPH AT						
+	SUB277	654.	6.33	129.	35.	32.	.36
	2 COMBINED AT						
+	HYD277	15996.	6.33	3664.	1024.	934.	11.64
	HYDROGRAPH AT						
+	SUB278	15951.	6.33	3769.	1056.	963.	11.95
	HYDROGRAPH AT						
+	SUB279	264.	6.33	48.	13.	12.	.14
	HYDROGRAPH AT						
+	SUB286	324.	6.33	56.	15.	14.	.15
	HYDROGRAPH AT						
+	SUB280	742.	6.33	135.	37.	34.	.39
	HYDROGRAPH AT						
+	SUB281	133.	6.00	28.	8.	7.	.09
	HYDROGRAPH AT						
+	SUB282	268.	6.33	57.	16.	14.	.20

```
      HYDROGRAPH AT
+                SUB283     450.   6.33       94.       26.       24.      .32


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

```
1                                   ****
                    FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
          U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA.
95616
                                    ****


          THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED
TO 3


1                                HEC-1 INPUT                                PAGE  1

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

       1         ID      CITY OF PHOENIX  --  EAST BISCUIT FLAT DRAINAGE STUDY
       2         ID      KINEMATIC WAVE WATERSHED MODEL  --  FUTURE DEVELOPMENT (3)
       3         ID      100 YR. - 24 HR. STORM    CASE III CONDITION
       4         IT    20                 80
       5         IO     5
                 *DIAGRAM

       6         KK  SUB201
       7         KM       RUNOFF FROM SUB-BASIN 201
       8         BA  0.050
       9         LS          98                 88
      10         PB   4.33
      11         IN    30
      12         PC    0.0  0.005  0.009  0.010  0.013  0.019  0.021  0.028  0.032  0.044
      13         PC  0.057  0.100  0.660  0.745  0.776  0.800  0.816  0.830  0.840  0.850
      14         PC  0.930  0.934  0.939  0.944  0.950  0.958  0.961  0.963  0.969  0.971
      15         PC  0.974  0.979  0.981  0.985  0.989  0.991  0.993  0.996  1.000  1.000
      16         UK    150   0.16  0.130     10
      17         UK    150  0.180  0.130     90
      18         RK   1500   0.18   0.05  0.005   TRAP     3     2
      19         RK    800   0.05   0.05         TRAP     5     1    NO

      20         KK  SUB202
      21         KM       RUNOFF FROM SUB-BASIN 202
      22         BA  0.170
      23         LS          98                 86
      24         UK    150   0.08  0.130      3
      25         UK    150   0.08  0.130     97
      26         RK   1500   0.08   0.05   0.02   TRAP     3     2
      27         RK   2000   0.07   0.05         TRAP     8     1    YES

      28         KK  SUB203
      29         KM       RUNOFF FROM SUB-BASIN 203
      30         BA  0.083
      31         LS          98                 84
      32         UK    150   0.10   0.13      2
      33         UK    150   0.10   0.13     98
      34         RK   2000   0.10   0.05   0.01   TRAP     3     2
      35         RK    600   0.08   0.05         TRAP     5     1    NO

      36         KK  SUB204
      37         KM       RUNOFF FROM SUB-BASIN 204
      38         BA  0.117
      39         LS          98                 84
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 40      UK    150   0.10   0.13     1
 41      UK    150   0.10   0.13    99
 42      RK   2900   0.10   0.05   0.01   TRAP     4     2
 43      RK   1500   0.08   0.05          TRAP     8     1    YES

 44      KK  HYD204
 45      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 204
 46      HC      2
1                          HEC-1 INPUT                          PAGE  2

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


 47      KK  SUB205
 48      KM       RUNOFF FROM SUB-BASIN 205
 49      BA   0.067
 50      LS          98                84
 51      UK    150   0.10   0.13     2
 52      UK    150   0.10   0.13    98
 53      RK   1700   0.10   0.05   0.01   TRAP     3     2
 54      RK    800   0.09   0.05          TRAP    18     1    YES

 55      KK  SUB206
 56      KM       RUNOFF FORM SUB-BASIN 206
 57      BA   0.287
 58      LS          98                86
 59      UK    150   0.09   0.13     6
 60      UK    150   0.09   0.13    94
 61      RK   2000   0.09   0.05   0.02   TRAP     3     2
 62      RK   2600   0.08   0.05          TRAP     8     1    NO

 63      KK  HYD206
 64      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 206
 65      HC      2

 66      KK  SUB207
 67      KM       RUNOFF FROM SUB-BASIN 207
 68      BA   0.095
 69      LS          98                85
 70      UK    150   0.05   0.13     1
 71      UK    150   0.05   0.13    99
 72      RK   1300   0.05   0.05   0.01   TRAP     3     2
 73      RK   2400   0.03  0.045          TRAP    25     1    YES

 74      KK  SUB208
 75      KM       RUNOFF FORM SUB-BASIN 208
 76      BA   0.349
 77      LS          98                85
 78      UK    150   0.01   0.13     1
 79      UK    150   0.01   0.13    99
 80      RK    800   0.01   0.02   0.02   TRAP     6   1.5
 81      RK   4600   0.01  0.035          TRAP    50   1.5    YES

 82      KK  SUB209
 83      KM       RUNOFF FROM SUB-BASIN 209
 84      BA   0.293
 85      LS          98                86
 86      UK    150  0.005   0.13     1
 87      UK    150  0.005   0.13    99
 88      RK    700  0.005   0.02   0.02   TRAP    36     1
 89      RK   4200  0.005   0.02          TRAP    36     1    NO
1                          HEC-1 INPUT                          PAGE  3

LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
 90      KK  SUB210
 91      KM      RUNOFF FROM SUB-BASIN 210
 92      BA  0.258
 93      LS          86
 94      UK    150  0.008   0.13    100
 95      RK   2000  0.008   0.02   0.02   TRAP    36     1
 96      RK   4700  0.008  0.035         TRAP    10   1.5    YES

 97      KK  HYD210
 98      KM      COMBINE HYDRAGRAPHS AT OUTLET FROM 210
 99      HC      2

100      KK  SUB211
101      KM      RUNOFF FROM SUB-BASIN 211
102      BA  0.537
103      LS          98              87
104      UK    150   0.02   0.13     2
105      UK    150   0.02   0.13    98
106      RK   3500   0.02   0.02   0.02   TRAP    36     1
107      RK   2600  0.008  0.035         TRAP    70   1.5    YES

108      KK  SUB212
109      KM      RUNOFF FROM SUB-BASIN 212
110      BA  0.185
111      LS          98              87
112      UK    150   0.02   0.13     2
113      UK    150   0.02   0.13    98
114      RK   2800   0.02   0.02   0.01   TRAP    36     1
115      RK   2500   0.02   0.02         TRAP    36     1    NO

116      KK  SUB213
117      KM      RUNOFF FROM SUB-BASIN 213
118      BA  0.080
119      LS          98              84
120      UK    150   0.02   0.16     1
121      UK    150   0.02   0.16    99
122      RK   1900   0.02   0.02   0.01   TRAP    36     1
123      RK   2100  0.008  0.035         TRAP    20   4.0    YES

124      KK  SUB214
125      KM      RUNOFF FROM SUB-BASIN 214
126      BA  0.118
127      LS          98              88
128      UK    150   0.18   0.13     2
129      UK    150   0.18   0.13    98
130      RK   1800   0.18   0.05   0.01   TRAP     3     2
131      RK   1900   0.15  0.035         TRAP    20   4.0    NO

132      KK  SUB215
133      KM      RUNOFF FROM SUB-BASIN 215
134      BA  0.182
135      LS          98              84
136      UK    150   0.05   0.16     1
137      UK    150   0.05   0.16    99
```



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

138      RK   2100   0.05   0.05   0.02   TRAP     3     2
139      RK   3200   0.04  0.015         CIRC    12         YES

140      KK  HYD215
141      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 215
142      HC      2
```

```
143     KK  SUB216
144     KM      RUNOFF FROM SUB-BASIN 216
145     BA  0.217
146     LS          88
147     UK    150  0.005   0.16    100
148     RK    200  0.005   0.02   0.02   TRAP    36     1
149     RK   3100  0.008  0.035          TRAP    50   4.0    YES

150     KK  SUB217
151     KM      RUNOFF FROM SUB-BASIN 217
152     BA  0.287
153     LS          98                86
154     UK    150  0.015   0.13      4
155     UK    150  0.015   0.13     96
156     RK   4500  0.015   0.02   0.02   TRAP    36     1
157     RK   2800  0.013  0.035          TRAP    40   4.0    NO

158     KK  HYD217
159     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 217
160     HC      2

161     KK  SUB218
162     KM      RUNOFF FROM SUB-BASIN 218
163     BA  0.151
164     LS          88
165     UK    150  0.005   0.16    100
166     RK   2100  0.005   0.02   0.01   TRAP    36     1
167     RK   3000  0.008  0.035          TRAP    40   4.0    YES

168     KK  SUB219
169     KM      RUNOFF FROM SUB-BAISN 219
170     BA  0.382
171     LS          98                87
172     UK    150   0.08   0.13      3
173     UK    150   0.08   0.13     97
174     RK   3000   0.08   0.05   0.02   TRAP     4     2
175     RK   2500   0.05   0.05          TRAP    10   1.5    NO

176     KK  SUB220
177     KM      RUNOFF FROM SUB-BASIN 220
178     BA  0.078
179     LS          98                87
180     UK    150   0.10   0.13      6
181     UK    150   0.10   0.13     94
182     RK   2000   0.10   0.05   0.01   TRAP     3     2
183     RK   2100   0.08   0.05          TRAP     8     1    NO
```



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

184     KK  HYD220
185     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 220
186     HC      2

187     KK  SUB221
188     KM      RUNOFF FROM SUB-BASIN 221
189     BA  0.054
190     LS          80
191     UK    150   0.04   0.16    100
192     RK   2200   0.04   0.05  0.005   TRAP     3     2
193     RK   2500   0.03   0.05          TRAP    12   1.5    YES

194     KK  SUB222
```

```
195     KM      RUNOFF FROM SUB-BASIN 222
196     BA  0.126
197     LS          98              85
198     UK    150   0.10   0.13     4
199     UK    150   0.10   0.13    96
200     RK   1800   0.10   0.05   0.01   TRAP     3     2
201     RK   1200   0.04  0.035         TRAP    12   1.5    NO

202     KK  SUB223
203     KM      RUNOFF FROM SUB-BASIN 223
204     BA  0.202
205     LS          84
206     UK    150   0.02   0.16   100
207     RK   2200   0.02   0.02   0.02   TRAP    36     1
208     RK   2800   0.02  0.035         TRAP    15   1.5   YES

209     KK  HYD223
210     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 223
211     HC     2

212     KK  SUB224
213     KM      RUNOFF FROM SUB-BASIN 224
214     BA  0.364
215     LS          98              86
216     UK    150   0.02   0.16     1
217     UK    150   0.02   0.16    99
218     RK   6600   0.02   0.02   0.02   TRAP    36     1
219     RK   1350  0.005  0.035         TRAP    60   4.0   YES

220     KK  HYD224
221     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 224
222     HC     2

223     KK  SUB225
224     KM      RUNOFF FROM SUB-BASIN 225
225     BA  0.007
226     LS          98              86
227     UK    150  0.008   0.16     1
228     UK    150  0.008   0.16    99
229     RK    150  0.008   0.02  0.005   TRAP    36     1
230     RK    800  0.008  0.035         TRAP    40   1.5   YES
```



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

231     KK  HYD225
232     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 225
233     HC     2

234     KK  SUB226
235     KM      RUNOFF FROM SUB-BASIN 226
236     BA  0.347
237     LS          98              86
238     UK    150  0.008   0.16     2
239     UK    150  0.008   0.16    98
240     RK   3000  0.008   0.02   0.02   TRAP    36     1
241     RK   4000  0.008  0.035         TRAP    80   1.5   YES

242     KK  SUB227
243     KM      RUNOFF FROM SUB-BASIN 227
244     BA  0.208
245     LS          98              88
246     UK    150   0.05   0.13     7
247     UK    150   0.05   0.13    93
```

```
248      RK   1800   0.05   0.05   0.02   TRAP     3      2
249      RK   1600   0.10   0.05          TRAP     5    1.5    NO

250      KK  SUB228
251      KM       RUNOFF FROM SUB-BASIN 228
252      BA  0.078
253      LS          98                86
254      UK    150  0.015   0.20     2
255      UK    150  0.015   0.20    98
256      RK   1200  0.015   0.02   0.01   TRAP    36      1
257      RK   1800   0.02  0.035          TRAP    15    1.5    YES

258      KK  SUB229
259      KM       RUNOFF FROM SUB-BASIN 229
260      BA  0.031
261      LS          86
262      UK    150  0.015   0.20   100
263      RK   1200  0.015   0.02  0.005   TRAP    36      1
264      RK   1350   0.02  0.035          TRAP    15    1.5    YES

265      KK  HYD229
266      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 229
267      HC      2

268      KK  SUB230
269      KM       RUNOFF FROM SUB-BASIN 230
270      BA  0.084
271      LS          79
272      UK    150  0.008   0.16   100
273      RK   1500  0.008   0.02   0.01   TRAP    36      1
274      RK   1300  0.008  0.035          TRAP    80    1.5    YES
```



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

275      KK  SUB231
276      KM       RUNOFF FROM SUB-BASIN 231
277      BA  0.179
278      LS          98                88
279      UK    150   0.18   0.13     10
280      UK    150   0.18   0.13     90
281      RK   1500   0.18   0.05   0.02   TRAP     3      2
282      RK   1100   0.10   0.04          TRAP     5      1    NO

283      KK  SUB232
284      KM       RUNOFF FROM SUB-BASIN 232
285      BA  0.147
286      LS          85
287      UK    150   0.04   0.13    100
288      RK   1600   0.04   0.05   0.01   TRAP     5      2
289      RK   2500   0.03  0.035          TRAP    25    4.0    YES

290      KK  SUB234
291      KM       RUNOFF FROM SUB-BASIN 234
292      BA  0.101
293      LS          98                88
294      UK    150   0.18   0.13     10
295      UK    150   0.18   0.13     90
296      RK   1000   0.18   0.05   0.01   TRAP     2      2
297      RK   1500   0.16   0.05          TRAP     5      1    NO

298      KK  SUB235
299      KM       RUNOFF FROM SUB-BASIN 235
300      BA  0.124
```

```
301      LS          98                86
302      UK    150   0.04   0.13     3
303      UK    150   0.04   0.13    97
304      RK   2500   0.04   0.05   0.01   TRAP     5     2
305      RK   2100   0.03  0.035         TRAP    20   1.5   YES

306      KK  HYD235
307      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 235
308      HC      2

309      KK  RES235
310      KM       RESERVOIR AT SUB-BASIN 235
311      RS      1   ELEV  1660.
312      SQ    0.0   15.0   25.0   40.0   60.0   80.0  300.0  700.0
313      SE  1660.  1661.  1663.  1665.  1667.  1668.  1669.  1671.
314      SV    0.0    7.0   20.0   35.0   53.0   75.0  100.0  130.0
315      SE  1660.  1661.  1663.  1665.  1667.  1668.  1669.  1671.

316      KK  SUB236
317      KM       RUNOFF FROM SUB-BASIN 236
318      BA  0.146
319      LS          85
320      UK    150   0.02   0.16    100
321      RK    800   0.02   0.02   0.01   TRAP    36     1
322      RK   3600  0.025  0.035         TRAP    20   1.5   YES
```



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

323      KK  SUB237
324      KM       RUNOFF FROM SUB-BASIN 237
325      BA  0.010
326      LS          85
327      UK    150   0.02   0.16    100
328      RK    250   0.02   0.02  0.005   TRAP    36     1
329      RK    800   0.02  0.035         TRAP    40   4.0   YES

330      KK  SUB240
331      KM       RUNOFF FROM SUB-BASIN 240
332      BA  0.056
333      LS          98                86
334      UK    150   0.04   0.13     2
335      UK    150   0.04   0.13    98
336      RK   1500   0.04   0.05  0.005   TRAP     5     1
337      RK    500   0.01  0.035         TRAP    10   4.0    NO

338      KK  SUB238
339      KM       RUNOFF FROM SUB-BASIN 238
340      BA  0.060
341      LS          98                88
342      UK    150   0.18   0.13    10
343      UK    150   0.18   0.13    90
344      RK   1000   0.18   0.05  0.005   TRAP     2     1
345      RK   1000   0.16   0.05         TRAP     6     1    NO

346      KK  SUB239
347      KM       RUNOFF FROM SUB-BASIN 239
348      BA  0.022
349      LS          98                87
350      UK    150   0.03   0.13     2
351      UK    150   0.03   0.13    98
352      RK    700   0.03   0.05  0.005   TRAP     5     1
353      RK   1400   0.05   0.05         TRAP    10     1   YES
```

```
354     KK  HYD239
355     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 239
356     HC      2

357     KK  SUB241
358     KM      RUNOFF FROM SUB-BASIN 241
359     BA  0.020
360     LS          87
361     UK    150   0.03   0.16    100
362     RK    700   0.03   0.02  0.005   TRAP    36     1
363     RK   1000   0.03  0.035         TRAP    20   4.0   YES

364     KK  SUB242
365     KM      RUNOFF FROM SUB-BASIN 242
366     BA  0.105
367     LS          98                88
368     UK    150   0.12   0.13     10
369     UK    150   0.12   0.13     90
370     RK   1000   0.12   0.05   0.01   TRAP     2     1
1                          HEC-1 INPUT                          PAGE 9

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

371     RK   1600   0.05   0.05         TRAP     6     1    NO

372     KK  SUB243
373     KM      RUNOFF FROM SUB-BASIN 243
374     BA  0.087
375     LS          98                87
376     UK    150   0.05   0.13      3
377     UK    150   0.05   0.13     97
378     RK   1700   0.05   0.05   0.01   TRAP     3     2
379     RK   2100   0.04  0.045         TRAP    10     1   YES

380     KK  HYD243
381     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 243
382     HC      2

383     KK  SUB245
384     KM      RUNOFF FROM SUB-BASIN 245
385     BA  0.049
386     LS          98                88
387     UK    150   0.12   0.13     10
388     UK    150   0.12   0.13     90
389     RK    800   0.12   0.05  0.005   TRAP     2     2
390     RK   1200   0.12   0.05         TRAP     5     1    NO

391     KK  SUB246
392     KM      RUNOFF FROM SUB-BASIN 246
393     BA  0.129
394     LS          87
395     UK    150   0.02   0.13    100
396     RK   2200   0.02   0.02   0.01   TRAP    36     1
397     RK   3200   0.03  0.035         TRAP    15   1.5   YES

398     KK  SUB247
399     KM      RUNOFF FROM SUB-BASIN 247
400     BA  0.031
401     LS          84
402     UK    150   0.02   0.16    100
403     RK   1000   0.02   0.02  0.005   TRAP    36     1
404     RK   1200   0.03  0.015         TRAP    40   4.0   YES

405     KK  HYD247
406     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 247
```

```
407      HC     2

408      KK  RES243
409      KM      RESERVOIR AT SUB-BASIN 243
410      RS     1   ELEV  1645.
411      SQ    0.0   15.0   30.0   50.0   68.0   90.0  300.0  700.0
412      SE  1645.  1646.  1648.  1650.  1652.  1653.  1654.  1656.
413      SV    0.0    7.0   22.0   38.0   70.0   85.0  100.0  135.0
414      SE  1645.  1646.  1648.  1650.  1652.  1653.  1654.  1656.
```



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


415      KK  SUB244
416      KM      RUNOFF FROM SUB-BASIN 244
417      BA  0.074
418      LS          86
419      UK    150   0.03   0.16    100
420      RK   1500   0.03   0.05  0.005   TRAP     3     2
421      RK   1600   0.03  0.045         TRAP    12     1   YES

422      KK  SUB249
423      KM      RUNOFF FROM SUB-BASIN 249
424      BA  0.134
425      LS          85
426      UK    150  0.015   0.16    100
427      RK   2600  0.015   0.02   0.01   TRAP    36     1
428      RK   1900   0.02  0.035         TRAP    25   1.5   YES

429      KK  HYD249
430      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 249
431      HC     2

432      KK  SUB250
433      KM      RUNOFF FROM SUB-BASIN 250
434      BA  0.417
435      LS          85
436      UK    150   0.01   0.16    100
437      RK   4700   0.01   0.02   0.02   TRAP    36     1
438      RK   1800   0.01  0.035         TRAP    40   1.5   YES

439      KK  HYD250
440      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 250
441      HC     2

442      KK  SUB251
443      KM      RUNOFF FROM SUB-BASIN 251
444      BA  0.154
445      LS          83
446      UK    150  0.007   0.20    100
447      RK   2500  0.007   0.02   0.01   TRAP    36     1
448      RK   2100   0.01  0.035         TRAP   100   1.5   YES

449      KK  SUB252
450      KM      RUNOFF FROM SUB-BASIN 252
451      BA  0.195
452      LS          85
453      UK    150  0.007   0.13    100
454      RK   3100  0.007   0.02   0.02   TRAP    36     1
455      RK   2000   0.01   0.02         TRAP    36     1    NO

456      KK  SUB253
457      KM      RUNOFF FROM SUB-BASIN 253
458      BA  0.019
```

```
459      LS          86
460      UK    150  0.007   0.20    100
461      RK    600  0.007   0.02  0.005   TRAP    36     1
1                          HEC-1 INPUT                          PAGE 11

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

462      RK   1200   0.01  0.015         CIRC    15          YES

463      KK  HYD253
464      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 253
465      HC     2

466      KK  SUB254
467      KM      RUNOFF FROM SUB-BASIN 254
468      BA  0.325
469      LS          98                84
470      UK    150  0.007   0.20     1
471      UK    150  0.007   0.20    99
472      RK   3500  0.007   0.02   0.02   TRAP    36     1
473      RK   2300   0.01  0.035         TRAP   100    1.5    YES

474      KK  SUB255
475      KM      RUNOFF FROM SUB-BASIN 255
476      BA  0.080
477      LS          98                88
478      UK    150   0.18   0.13    12
479      UK    150   0.18   0.13    88
480      RK   1300   0.18   0.05   0.01   TRAP     2     2
481      RK    700   0.18   0.05         TRAP     4     1    NO

482      KK  SUB256
483      KM      RUNOFF FROM SUB-BASIN 256
484      BA  0.206
485      LS          98                88
486      UK    150   0.18   0.13    10
487      UK    150   0.18   0.13    90
488      RK   2400   0.18   0.05   0.02   TRAP     3     2
489      RK   2000   0.15   0.05         TRAP    10     1    YES

490      KK  SUB257
491      KM      RUNOFF FROM SUB-BASIN 257
492      BA  0.088
493      LS          85
494      UK    150   0.04   0.13   100
495      RK   1600   0.04  0.035   0.01   TRAP     5     2
496      RK   1700   0.05  0.035         TRAP     8     2    YES

497      KK  SUB258
498      KM      RUNOFF FROM SUB-BASIN 258
499      BA  0.197
500      LS          84
501      UK    150   0.02   0.13   100
502      RK   1800   0.02   0.02   0.02   TRAP    36     1
503      RK   3500  0.025  0.035         TRAP    20    1.5    YES

504      KK  SUB259
505      KM      RUNOFF FROM SUB-BASIN 259
506      BA  0.137
507      LS          80
508      UK    150  0.007   0.16   100
509      RK   2500  0.007   0.02   0.01   TRAP    36     1
1                          HEC-1 INPUT                          PAGE 12

LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
510     RK   3500   0.01   0.035          TRAP    30    1.5    YES

511     KK  SUB260
512     KM       RUNOFF FROM SUB-BASIN 260
513     BA  0.014
514     LS          83
515     UK    150  0.007   0.13    100
516     RK    800  0.007   0.02  0.005   TRAP    36     1
517     RK    400  0.025  0.035          TRAP     5   1.5    NO

518     KK  SUB261
519     KM       RUNOFF FROM SUB-BASIN 261
520     BA  0.152
521     LS          85
522     UK    150  0.007   0.13    100
523     RK   5800  0.007   0.02   0.01   TRAP    36     1
524     RK    800  0.005  0.035          TRAP    10   4.0    YES

525     KK  SUB262
526     KM       RUNOFF FROM SUB-BASIN 262
527     BA  0.401
528     LS          81
529     UK    150   0.02   0.13    100
530     RK   6000   0.02   0.02   0.02   TRAP    36     1
531     RK   1100  0.005  0.035          TRAP    30   4.0    YES

532     KK  SUB263
533     KM       RUNOFF FROM SUB-BASIN 263
534     BA  0.077
535     LS          88
536     UK    150   0.15   0.13    100
537     RK   1500   0.15   0.05   0.01   TRAP     1     2
538     RK    300   0.11   0.05          TRAP     5     1    NO

539     KK  SUB264
540     KM       RUNOFF FROM SUB-BASIN 264
541     BA  0.090
542     LS          76
543     UK    150   0.02   0.13    100
544     RK   1500   0.02   0.02   0.01   TRAP    36     1
545     RK   3100  0.025  0.035          TRAP    15   1.5    YES

546     KK  SUB265
547     KM       RUNOFF FROM SUB-BASIN 265
548     BA  0.270
549     LS          83
550     UK    150   0.02   0.13    100
551     RK   3000   0.02   0.02   0.02   TRAP    36     1
552     RK   3000  0.025  0.035          TRAP    15   1.5    YES
```



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

553     KK  HYD265
554     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 265
555     HC      2

556     KK  RES265
557     KM       RESERVOIR AT SUB-BASIN 265
558     RS      1   ELEV  1634.
559     SQ    0.0    30.0    50.0   100.0   160.0   200.0   800.0  2000.0
560     SE  1634.   1635.   1637.   1639.   1641.   1642.   1643.   1645.
561     SV    0.0     6.0    14.0    31.0    50.0    65.0    70.0    90.0
```

```
562     SE  1634.  1635.  1637.  1639.  1641.  1642.  1643.  1645.

563     KK  SUB266
564     KM      RUNOFF FROM SUB-BASIN 266
565     BA  0.164
566     LS          84
567     UK    150   0.02   0.16    100
568     RK   2000   0.02   0.02   0.01   TRAP    36     1
569     RK   2500   0.01  0.035         TRAP    50   4.0    YES

570     KK  HYD266
571     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 266
572     HC      2

573     KK  SUB267
574     KM      RUNOFF FROM SUB-BASIN 267
575     BA  0.158
576     LS          78
577     UK    150   0.01   0.13    100
578     RK   4000  0.007   0.02   0.02   TRAP    36     1
579     RK   2000   0.01  0.035         TRAP    40   1.5    YES

580     KK  SUB285
581     KM      RUNOFF FROM SUB-BASIN 285
582     BA  0.236
583     LS          84
584     UK    150   0.01   0.13    100
585     RK   3000   0.01   0.02   0.02   TRAP    36     1
586     RK   2500  0.008  0.015         CIRC     8          NO

587     KK  HYD285
588     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 285
589     HC      2

590     KK  SUB268
591     KM      RUNOFF FROM SUB-BASIN 268
592     BA  0.122
593     LS          81
594     UK    150  0.007   0.13    100
595     RK   2300  0.007   0.02   0.01   TRAP    36     1
596     RK   2500   0.01  0.035         TRAP    40   1.5    YES
```



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

597     KK  HYD268
598     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 268
599     HC      2

600     KK  SUB269
601     KM      RUNOFF FROM SUB-BASIN 269
602     BA  0.326
603     LS          98              78
604     UK    150  0.007   0.20     5
605     UK    150  0.007   0.20    95
606     RK   2400  0.007   0.02   0.02   TRAP    36     1
607     RK   3000   0.01  0.035         TRAP   120   1.5    YES

608     KK  SUB270
609     KM      RUNOFF FROM SUB-BASIN 270
610     BA  0.190
611     LS          88
612     UK    150  0.007   0.13    100
613     RK   2100  0.007   0.02   0.02   TRAP    36     1
```

```
614     RK   2000   0.01   0.02        TRAP    36     1    NO

615     KK  SUB271
616     KM      RUNOFF FROM SUB-BASIN 271
617     BA  0.079
618     LS          88
619     UK    150  0.007   0.13    100
620     RK   2000  0.007   0.02   0.01   TRAP    36     1
621     RK   1100   0.01  0.035        TRAP    20   4.0   YES

622     KK  SUB272
623     KM      RUNOFF FROM SUB-BASIN 272
624     BA  0.084
625     LS          84
626     UK    150  0.007   0.13    100
627     RK   4700  0.007   0.02   0.01   TRAP    36     1
628     RK    900  0.005  0.035        TRAP    30   4.0   YES

629     KK  HYD272
630     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 272
631     HC      2

632     KK  SUB274
633     KM      RUNOFF FROM SUB-BASIN 274
634     BA  0.002
635     LS          98              79
636     UK    150  0.007   0.13     1
637     UK    150  0.007   0.13    99
638     RK    150  0.007   0.02  0.002   TRAP    36     1
639     RK    300   0.01  0.035        TRAP   120   1.5   YES
```



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

640     KK  SUB273
641     KM      RUNOFF FROM SUB-BASIN 273
642     BA  0.126
643     LS          98              86
644     UK    150   0.02   0.13     4
645     UK    150   0.02   0.13    96
646     RK    800   0.02   0.02   0.01   TRAP    36     1
647     RK   3800   0.04  0.035        TRAP    15   1.5    NO

648     KK  HYD274
649     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 274
650     HC      2

651     KK  SUB275
652     KM      RUNOFF FROM SUB-BASIN 275
653     BA  0.010
654     LS          81
655     UK    150  0.007   0.13    100
656     RK    900  0.007   0.02  0.005   TRAP    36     1
657     RK    500   0.01  0.035        TRAP   120   1.5   YES

658     KK  SUB276
659     KM      RUNOFF FROM SUB-BASIN 276
660     BA  0.279
661     LS          98              88
662     UK    150   0.18   0.13    12
663     UK    150   0.18   0.13    88
664     RK   1300   0.18   0.05   0.02   TRAP     3     2
665     RK   3000   0.14   0.05        TRAP     5     1    NO
```

```
666     KK  SUB277
667     KM      RUNOFF FROM SUB-BASIN 277
668     BA  0.084
669     LS          98              85
670     UK    150   0.05   0.13     1
671     UK    150   0.05   0.13    99
672     RK   1500   0.05   0.05   0.01   TRAP     2     2
673     RK   4000   0.04   0.05          TRAP    65   1.5   YES

674     KK  HYD277
675     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 277
676     HC      2

677     KK  SUB278
678     KM      RUNOFF FROM SUB-BASIN 278
679     BA  0.304
680     LS          85
681     UK    150  0.007   0.13    100
682     RK   3600  0.007   0.02   0.02   TRAP    36     1
683     RK   2400   0.01  0.035          TRAP   120   1.5   YES
```



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

684     KK  SUB279
685     KM      RUNOFF FROM SUB-BASIN 279
686     BA  0.141
687     LS          87
688     UK    150  0.007   0.13    100
689     RK   2800  0.007   0.02   0.01   TRAP    36     1
690     RK   2500  0.007   0.02          TRAP    10   4.0    NO

691     KK  SUB286
692     KM      RUNOFF FROM SUB-BASIN 286
693     BA  0.146
694     LS          88
695     UK    150   0.01   0.13    100
696     RK   1500   0.01   0.02   0.01   TRAP    36     1
697     RK   4000   0.01   0.02          TRAP    36     1    NO

698     KK  SUB280
699     KM      RUNOFF FROM SUB=BASIN 280
700     BA  0.240
701     LS          87
702     UK    150  0.007   0.16    100
703     RK   5000  0.007   0.02   0.02   TRAP    36     1
704     RK   1300  0.005  0.035          TRAP    20   4.0   YES

705     KK  SUB281
706     KM      RUNOFF FROM SUB-BASIN 281
707     BA  0.091
708     LS          85
709     UK    150   0.01   0.13    100
710     RK   1800   0.01   0.02   0.01   TRAP    36     1
711     RK   3500   0.01   0.02          TRAP    36     1    NO

712     KK  SUB282
713     KM      RUNOFF FROM SUB-BASIN 282
714     BA  0.108
715     LS          86
716     UK    150  0.007   0.13    100
717     RK   3600  0.007   0.02   0.01   TRAP    36     1
718     RK   1000  0.005  0.035          TRAP    10   4.0   YES
```

```
719        KK  SUB283
720        KM      RUNOFF FROM SUB-BASIN 283
721        BA  0.123
722        LS          86
723        UK    150  0.007   0.13    100
724        RK   4000  0.007   0.02   0.01   TRAP    36     1
725        RK    500  0.005  0.035         TRAP    20    4.0    YES

726        KK  HYD288
727        KM      COMBINE HYDROGRAPHS AT OUTLET FROM 288
728        HC      4
729        ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

  6    SUB201
         V
         V
 20    SUB202 ***
         .
         .
 28       .    SUB203
         .       V
         .       V
 36       .    SUB204 ***
         .       .
         .       .
 44    HYD204............
         V
         V
 47    SUB205 ***
         .
         .
 55       .    SUB206
         .       .
         .       .
 63    HYD206............
         V
         V
 66    SUB207 ***
         V
         V
 74    SUB208 ***
         .
         .
 82       .    SUB209
         .       V
         .       V
 90       .    SUB210 ***
         .       .
         .       .
 97    HYD210............
         V
         V
100    SUB211 ***
         .
         .
108       .    SUB212
         .       V
         .       V
116       .    SUB213 ***
```

```
        .       .
        .       .
124     .       .   SUB214
        .       .     V
        .       .     V
132     .       .   SUB215 ***
        .       .     .
        .       .     .
140     .     HYD215............
        .       V
        .       V
143     .     SUB216 ***
        .       .
        .       .
150     .       .   SUB217
        .       .     .
        .       .     .
158     .     HYD217............
        .       V
        .       V
161     .     SUB218 ***
        .       .
        .       .
168     .       .   SUB219
        .       .     .
        .       .     .
176     .       .       .   SUB220
        .       .     .       .
        .       .     .       .
184     .       .   HYD220............
        .       .     V
        .       .     V
187     .       .   SUB221 ***
        .       .     .
        .       .     .
194     .       .       .   SUB222
        .       .     .       V
        .       .     .       V
202     .       .       .   SUB223 ***
        .       .     .       .
        .       .     .       .
209     .       .   HYD223............
        .       .     V
        .       .     V
212     .       .   SUB224 ***
        .       .     .
        .       .     .
220     .     HYD224............
        .       V
        .       V
223     .     SUB225 ***
        .       .
        .       .
231   HYD225............
        V
        V
234   SUB226 ***
        .
        .
242     .     SUB227
        .       V
        .       V
250     .     SUB228 ***
        .       V
        .       V
```

```
258       .    SUB229 ***
        .       .
        .       .
265   HYD229............
        V
        V
268   SUB230 ***
        .
        .
275       .    SUB231
        .       V
        .       V
283       .    SUB232 ***
        .       .
        .       .
290       .       .    SUB234
        .       .       V
        .       .       V
298       .       .    SUB235 ***
        .       .       .
        .       .       .
306       .    HYD235............
        .       V
        .       V
309       .    RES235
        .       V
        .       V
316       .    SUB236 ***
        .       V
        .       V
323       .    SUB237 ***
        .       .
        .       .
330       .       .    SUB240
        .       .       .
        .       .       .
338       .       .       .    SUB238
        .       .       .       V
        .       .       .       V
346       .       .       .    SUB239 ***
        .       .       .       .
        .       .       .       .
354       .       .    HYD239............
        .       .       V
        .       .       V
357       .       .    SUB241 ***
        .       .       .
        .       .       .
364       .       .       .    SUB242
        .       .       .       V
        .       .       .       V
372       .       .       .    SUB243 ***
        .       .       .       .
        .       .       .       .
380       .       .    HYD243............
        .       .       .
        .       .       .
383       .       .       .    SUB245
        .       .       .       V
        .       .       .       V
391       .       .       .    SUB246 ***
        .       .       .       V
        .       .       .       V
398       .       .       .    SUB247 ***
        .       .       .       .
```

```
        .       .       .       .
405     .       .     HYD247............
        .       .       V
        .       .       V
408     .       .     RES243
        .       .       V
        .       .       V
415     .       .     SUB244 ***
        .       .       V
        .       .       V
422     .       .     SUB249 ***
        .       .       .
        .       .       .
429     .     HYD249............
        .       V
        .       V
432     .     SUB250 ***
        .       .
        .       .
439   HYD250............
        V
        V
442   SUB251 ***
        .
        .
449     .     SUB252
        .       V
        .       V
456     .     SUB253 ***
        .       .
        .       .
463   HYD253............
        V
        V
466   SUB254 ***
        .
        .
474     .     SUB255
        .       V
        .       V
482     .     SUB256 ***
        .       V
        .       V
490     .     SUB257 ***
        .       V
        .       V
497     .     SUB258 ***
        .       V
        .       V
504     .     SUB259 ***
        .       .
        .       .
511     .       .     SUB260
        .       .       V
        .       .       V
518     .       .     SUB261 ***
        .       .       V
        .       .       V
525     .       .     SUB262 ***
        .       .       .
        .       .       .
532     .       .       .     SUB263
        .       .       .       V
        .       .       .       V
539     .       .       .     SUB264 ***
```

```
        .       .       .       V
        .       .       .       V
546     .       .       .    SUB265 ***
        .       .       .       .
        .       .       .       .
553     .       .    HYD265............
        .       .       V
        .       .       V
556     .       .    RES265
        .       .       V
        .       .       V
563     .       .    SUB266 ***
        .       .       .
        .       .       .
570     .    HYD266............
        .       V
        .       V
573     .    SUB267 ***
        .       .
        .       .
580     .       .    SUB285
        .       .       .
        .       .       .
587     .    HYD285............
        .       V
        .       V
590     .    SUB268 ***
        .       .
        .       .
597  HYD268............
      V
      V
600  SUB269 ***
      .
      .
608     .    SUB270
        .       V
        .       V
615     .    SUB271 ***
        .       V
        .       V
622     .    SUB272 ***
        .       .
        .       .
629  HYD272............
      V
      V
632  SUB274 ***
      .
      .
640     .    SUB273
        .       .
        .       .
648  HYD274............
      V
      V
651  SUB275 ***
      .
      .
658     .    SUB276
        .       V
        .       V
666     .    SUB277 ***
        .       .
        .       .
```

```
674    HYD277............
        V
        V
677    SUB278 ***
        .
        .
684      .    SUB279
        .      .
        .      .
691      .      .    SUB286
        .      .      V
        .      .      V
698      .      .    SUB280 ***
        .      .      .
        .      .      .
705      .      .      .    SUB281
        .      .      .      V
        .      .      .      V
712      .      .      .    SUB282 ***
        .      .      .      V
        .      .      .      V
719      .      .      .    SUB283 ***
        .      .      .      .
        .      .      .      .
726    HYD288.....................................
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

1 ****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985

U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

****

CITY OF PHOENIX -- EAST BISCUIT FLAT DRAINAGE STUDY
KINEMATIC WAVE WATERSHED MODEL -- FUTURE DEVELOPMENT (3)
100 YR. - 24 HR. STORM CASE III CONDITION

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

  IT       HYDROGRAPH TIME DATA
             NMIN        20  MINUTES IN COMPUTATION INTERVAL
             IDATE     1   0  STARTING DATE
             ITIME      0000  STARTING TIME
              NQ        80  NUMBER OF HYDROGRAPH ORDINATES
            NDDATE     2   0  ENDING DATE
            NDTIME      0220  ENDING TIME

           COMPUTATION INTERVAL     .33 HOURS
             TOTAL TIME BASE   26.33 HOURS

      ENGLISH UNITS
```

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 200. TO 800.

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.)

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB201	119.	6.00	16.	4.	4.	.05		
+	HYDROGRAPH AT	SUB202	495.	6.00	64.	18.	16.	.22		
+	HYDROGRAPH AT	SUB203	177.	6.00	22.	6.	6.	.08		
+	HYDROGRAPH AT	SUB204	412.	6.00	53.	15.	13.	.20		
+	2 COMBINED AT	HYD204	907.	6.00	117.	32.	29.	.42		
+	HYDROGRAPH AT	SUB205	1028.	6.00	136.	37.	34.	.49		
+	HYDROGRAPH AT	SUB206	644.	6.00	83.	23.	21.	.29		
+	2 COMBINED AT	HYD206	1672.	6.00	219.	60.	55.	.77		
+	HYDROGRAPH AT	SUB207	1741.	6.00	247.	68.	62.	.87		
+	HYDROGRAPH AT	SUB208	1905.	6.00	339.	94.	85.	1.22		
+	HYDROGRAPH AT	SUB209	500.	6.00	81.	22.	20.	.29		
+	HYDROGRAPH AT	SUB210	782.	6.33	154.	43.	39.	.55		
+	2 COMBINED AT	HYD210	2317.	6.00	492.	136.	124.	1.77		
+	HYDROGRAPH AT	SUB211	2858.	6.00	643.	179.	163.	2.31		
+	HYDROGRAPH AT	SUB212	334.	6.00	54.	15.	13.	.19		
+	HYDROGRAPH AT	SUB213	383.	6.00	74.	20.	19.	.26		
+	HYDROGRAPH AT	SUB214	288.	6.00	36.	10.	9.	.12		
+	HYDROGRAPH AT	SUB215	604.	6.00	83.	23.	21.	.30		
+	2 COMBINED AT	HYD215	988.	6.00	157.	43.	40.	.56		

	HYDROGRAPH AT						
+	SUB216	1048.	6.33	225.	62.	57.	.78
	HYDROGRAPH AT						
+	SUB217	435.	6.00	81.	22.	20.	.29
	2 COMBINED AT						
+	HYD217	1371.	6.33	305.	84.	77.	1.07
	HYDROGRAPH AT						
+	SUB218	1596.	6.33	350.	97.	88.	1.22
	HYDROGRAPH AT						
+	SUB219	883.	6.00	113.	31.	28.	.38
	HYDROGRAPH AT						
+	SUB220	180.	6.00	23.	6.	6.	.08
	2 COMBINED AT						
+	HYD220	1063.	6.00	136.	37.	34.	.46
	HYDROGRAPH AT						
+	SUB221	951.	6.00	148.	40.	37.	.51
	HYDROGRAPH AT						
+	SUB222	276.	6.00	35.	10.	9.	.13
	HYDROGRAPH AT						
+	SUB223	451.	6.33	88.	24.	22.	.33
	2 COMBINED AT						
+	HYD223	1275.	6.00	236.	65.	59.	.84
	HYDROGRAPH AT						
+	SUB224	1611.	6.00	333.	92.	84.	1.21
	2 COMBINED AT						
+	HYD224	2979.	6.33	680.	189.	173.	2.43
	HYDROGRAPH AT						
+	SUB225	2969.	6.33	682.	190.	173.	2.43
	2 COMBINED AT						
+	HYD225	5573.	6.33	1323.	369.	336.	4.74
	HYDROGRAPH AT						
+	SUB226	5848.	6.33	1413.	395.	360.	5.09
	HYDROGRAPH AT						
+	SUB227	498.	6.00	64.	17.	16.	.21
	HYDROGRAPH AT						
+	SUB228	596.	6.00	86.	23.	21.	.29
	HYDROGRAPH AT						
+	SUB229	561.	6.00	94.	26.	24.	.32
	2 COMBINED AT						
+	HYD229	6186.	6.33	1505.	421.	384.	5.40
	HYDROGRAPH AT						
+	SUB230	6224.	6.33	1528.	427.	389.	5.49
	HYDROGRAPH AT						
+	SUB231	427.	6.00	56.	15.	14.	.18

```
     HYDROGRAPH AT
+              SUB232    455.  6.33      95.      26.      24.      .33

     HYDROGRAPH AT
+              SUB234    241.  6.00      31.       9.       8.      .10

     HYDROGRAPH AT
+              SUB235    443.  6.00      66.      18.      17.      .22

     2 COMBINED AT
+              HYD235    860.  6.00     161.      44.      40.      .55

     ROUTED TO
+              RES235     63. 10.67      60.      37.      33.      .55
+                                                      1667.14     10.67

     HYDROGRAPH AT
+              SUB236    293.  6.33      95.      47.      43.      .70

     HYDROGRAPH AT
+              SUB237    290.  6.33      97.      48.      44.      .71

     HYDROGRAPH AT
+              SUB240    109.  6.00      16.       4.       4.      .06

     HYDROGRAPH AT
+              SUB238    143.  6.00      19.       5.       5.      .06

     HYDROGRAPH AT
+              SUB239    176.  6.00      25.       7.       6.      .08

     2 COMBINED AT
+              HYD239    286.  6.00      41.      11.      10.      .14

     HYDROGRAPH AT
+              SUB241    274.  6.00      46.      13.      12.      .16

     HYDROGRAPH AT
+              SUB242    249.  6.00      33.       9.       8.      .10

     HYDROGRAPH AT
+              SUB243    426.  6.00      59.      16.      15.      .19

     2 COMBINED AT
+              HYD243    701.  6.00     105.      29.      26.      .35

     HYDROGRAPH AT
+              SUB245    117.  6.00      15.       4.       4.      .05

     HYDROGRAPH AT
+              SUB246    297.  6.33      52.      14.      13.      .18

     HYDROGRAPH AT
+              SUB247    341.  6.33      60.      17.      15.      .21

     2 COMBINED AT
+              HYD247    830.  6.00     165.      45.      41.      .56

     ROUTED TO
+              RES243     61. 10.67      59.      39.      35.      .56
+                                                      1651.23     10.67

     HYDROGRAPH AT
+              SUB244    182.  6.33      77.      44.      40.      .63
```

	HYDROGRAPH AT						
+	SUB249	371.	6.33	112.	54.	49.	.77
	2 COMBINED AT						
+	HYD249	661.	6.33	209.	102.	93.	1.47
	HYDROGRAPH AT						
+	SUB250	1125.	6.33	315.	132.	120.	1.89
	2 COMBINED AT						
+	HYD250	7349.	6.33	1838.	559.	509.	7.38
	HYDROGRAPH AT						
+	SUB251	7324.	6.33	1866.	569.	518.	7.53
	HYDROGRAPH AT						
+	SUB252	295.	6.33	52.	14.	13.	.19
	HYDROGRAPH AT						
+	SUB253	315.	6.33	57.	16.	14.	.21
	2 COMBINED AT						
+	HYD253	7639.	6.33	1923.	584.	533.	7.75
	HYDROGRAPH AT						
+	SUB254	7633.	6.33	1993.	607.	553.	8.07
	HYDROGRAPH AT						
+	SUB255	190.	6.00	25.	7.	6.	.08
	HYDROGRAPH AT						
+	SUB256	666.	6.00	89.	24.	22.	.29
	HYDROGRAPH AT						
+	SUB257	660.	6.00	113.	31.	28.	.37
	HYDROGRAPH AT						
+	SUB258	811.	6.33	163.	45.	41.	.57
	HYDROGRAPH AT						
+	SUB259	892.	6.33	195.	54.	49.	.71
	HYDROGRAPH AT						
+	SUB260	23.	6.33	3.	1.	1.	.01
	HYDROGRAPH AT						
+	SUB261	213.	6.67	43.	12.	11.	.17
	HYDROGRAPH AT						
+	SUB262	576.	6.67	133.	38.	35.	.57
	HYDROGRAPH AT						
+	SUB263	191.	6.33	23.	6.	6.	.08
	HYDROGRAPH AT						
+	SUB264	256.	6.33	40.	11.	10.	.17
	HYDROGRAPH AT						
+	SUB265	625.	6.33	107.	30.	27.	.44
	2 COMBINED AT						
+	HYD265	1182.	6.33	240.	68.	62.	1.00
	ROUTED TO						

```
+                RES265    200.  7.67     164.     67.     61.    1.00
+                                                        1641.99      7.67

     HYDROGRAPH AT
+                SUB266    283.  6.33     195.     79.     72.    1.17

     2 COMBINED AT
+                HYD266   1175.  6.33     383.    133.    121.    1.88

     HYDROGRAPH AT
+                SUB267   1221.  6.33     411.    142.    129.    2.03

     HYDROGRAPH AT
+                SUB285    366.  6.33      61.     17.     15.     .24

     2 COMBINED AT
+                HYD285   1587.  6.33     472.    159.    145.    2.27

     HYDROGRAPH AT
+                SUB268   1534.  6.33     497.    166.    152.    2.39

     2 COMBINED AT
+                HYD268   9167.  6.33    2487.    773.    705.   10.46

     HYDROGRAPH AT
+                SUB269   8764.  6.33    2534.    792.    721.   10.79

     HYDROGRAPH AT
+                SUB270    356.  6.33      56.     15.     14.     .19

     HYDROGRAPH AT
+                SUB271    462.  6.33      79.     22.     20.     .27

     HYDROGRAPH AT
+                SUB272    488.  6.33     100.     28.     25.     .35

     2 COMBINED AT
+                HYD272   9253.  6.33    2634.    819.    747.   11.14

     HYDROGRAPH AT
+                SUB274   9174.  6.33    2632.    819.    747.   11.14

     HYDROGRAPH AT
+                SUB273    235.  6.00      36.     10.      9.     .13

     2 COMBINED AT
+                HYD274   9290.  6.33    2667.    829.    756.   11.27

     HYDROGRAPH AT
+                SUB275   9174.  6.33    2665.    830.    756.   11.28

     HYDROGRAPH AT
+                SUB276    658.  6.00      87.     24.     22.     .28

     HYDROGRAPH AT
+                SUB277    680.  6.00     115.     31.     29.     .36

     2 COMBINED AT
+                HYD277   9597.  6.33    2776.    861.    785.   11.64

     HYDROGRAPH AT
+                SUB278   9460.  6.33    2846.    884.    805.   11.95

     HYDROGRAPH AT
+                SUB279    224.  6.33      40.     11.     10.     .14
```

```
      HYDROGRAPH AT
+                SUB286    269.  6.33      43.      12.      11.      .15

      HYDROGRAPH AT
+                SUB280    538.  6.33     109.      31.      28.      .39

      HYDROGRAPH AT
+                SUB281    141.  6.33      24.       7.       6.      .09

      HYDROGRAPH AT
+                SUB282    263.  6.33      53.      15.      14.      .20

      HYDROGRAPH AT
+                SUB283    401.  6.33      86.      24.      22.      .32

      4 COMBINED AT
+                HYD288  10623.  6.33    3082.     949.     865.    12.80


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

APPENDIX D

1

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FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616

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THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3

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

  1       ID      CITY OF PHOENIX  --  EAST BISCUIT FLAT DRAINAGE STUDY
  2       ID      KINEMATIC WAVE WATERSHED MODEL  --  STORM DRAIN CONCEPT
  3       ID      2 YR. - 24 HR. STORM    CASE IV CONDITION
  4       IT     6                150
  5       IO     5
          *DIAGRAM

  6       KK  SUB201
  7       KM      RUNOFF FROM SUB-BASIN 201
  8       BA  0.050
  9       LS          98                88
 10       PB   1.77
 11       IN    30
 12       PC    0.0  0.005  0.009  0.010  0.013  0.019  0.021  0.028  0.032  0.044
 13       PC  0.057  0.100  0.660  0.745  0.776  0.800  0.816  0.830  0.840  0.850
 14       PC  0.930  0.934  0.939  0.944  0.950  0.958  0.961  0.963  0.969  0.971
 15       PC  0.974  0.979  0.981  0.985  0.989  0.991  0.993  0.996  1.000  1.000
 16       UK    150   0.16  0.130     10
 17       UK    150  0.180  0.130     90
 18       RK   1500   0.18   0.05  0.005   TRAP     3     2
 19       RK    800   0.05   0.05         TRAP     5     1    NO

 20       KK  SUB202
 21       KM      RUNOFF FROM SUB-BASIN 202
 22       BA  0.170
 23       LS          98                86
 24       UK    150   0.08  0.130      3
 25       UK    150   0.08  0.130     97
 26       RK   1500   0.08   0.05   0.02   TRAP     3     2
 27       RK   2000   0.07   0.05         TRAP     8     1    YES

 28       KK  SUB203
 29       KM      RUNOFF FROM SUB-BASIN 203
 30       BA  0.083
 31       LS          98                84
 32       UK    150   0.10   0.13      2
 33       UK    150   0.10   0.13     98
 34       RK   2000   0.10   0.05   0.01   TRAP     3     2
 35       RK    600   0.08   0.05         TRAP     5     1    NO

 36       KK  SUB204
 37       KM      RUNOFF FROM SUB-BASIN 204
 38       BA  0.117
 39       LS          98                84
 40       UK    150   0.10   0.13      1
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 41      UK    150   0.10   0.13    99
 42      RK   2900   0.10   0.05   0.01   TRAP     4     2
 43      RK   1500   0.08   0.05          TRAP     8     1    YES

 44      KK  HYD204
 45      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 204
 46      HC      2
1                          HEC-1 INPUT                          PAGE  2

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


 47      KK  SUB205
 48      KM       RUNOFF FROM SUB-BASIN 205
 49      BA  0.067
 50      LS          98                84
 51      UK    150   0.10   0.13     2
 52      UK    150   0.10   0.13    98
 53      RK   1700   0.10   0.05   0.01   TRAP     3     2
 54      RK    800   0.09   0.05          TRAP    18     1    YES

 55      KK  SUB206
 56      KM       RUNOFF FORM SUB-BASIN 206
 57      BA  0.287
 58      LS          98                86
 59      UK    150   0.09   0.13     6
 60      UK    150   0.09   0.13    94
 61      RK   2000   0.09   0.05   0.02   TRAP     3     2
 62      RK   2600   0.08   0.05          TRAP     8     1    NO

 63      KK  HYD206
 64      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 206
 65      HC      2

 66      KK  SUB207
 67      KM       RUNOFF FROM SUB-BASIN 207
 68      BA  0.095
 69      LS          98                85
 70      UK    150   0.05   0.13     1
 71      UK    150   0.05   0.13    99
 72      RK   1300   0.05   0.05   0.01   TRAP     3     2
 73      RK   2400   0.03   0.045         TRAP    25     1    YES

 74      KK  SUB208
 75      KM       RUNOFF FORM SUB-BASIN 208
 76      BA  0.349
 77      LS          98                85
 78      UK    150   0.01   0.13     1
 79      UK    150   0.01   0.13    99
 80      RK    800   0.01   0.02   0.02   TRAP     6   1.5
 81      RK   4600   0.01   0.035         TRAP    50   1.5    YES

 82      KK  SUB209
 83      KM       RUNOFF FROM SUB-BASIN 209
 84      BA  0.274
 85      LS          98                86
 86      UK    150  0.005   0.13     1
 87      UK    150  0.005   0.13    99
 88      RK    700  0.005   0.02   0.02   TRAP    36     1
 89      RK   4200  0.005   0.02          TRAP    36     1    NO
1                          HEC-1 INPUT                          PAGE  3

LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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 90      KK   SD-1
 91      KM       STORM DRAIN SD-1
 92      BA  0.008
 93      LS          98
 94      UK    150  0.005   0.10    100
 95      RK   1000  0.005   0.02  0.004   TRAP     60      1
 96      RK    990  0.005  0.015         CIRC      3          NO

 97      KK   SD-2
 98      KM       STORM DRAIN SD-2
 99      BA  0.011
100      LS          98
101      UK    150  0.005   0.10    100
102      RK   1000  0.005   0.02  0.005   TRAP     60      1
103      RK   1600  0.005  0.015         CIRC      3          NO

104      KK  HYDSD
105      KM       COMBINE HYDROGRAPHS AT SD-1/SD-2
106      HC      3

107      KK  SUB210
108      KM       RUNOFF FROM SUB-BASIN 210
109      BA  0.258
110      LS          86
111      UK    150  0.008   0.13    100
112      RK   2000  0.008   0.02   0.02   TRAP     36      1
113      RK   4700  0.008  0.035         TRAP     10    1.5    YES

114      KK  HYD210
115      KM       COMBINE HYDRAGRAPHS AT OUTLET FROM 210
116      HC      2

117      KK  SUB211
118      KM       RUNOFF FROM SUB-BASIN 211
119      BA  0.537
120      LS          98                87
121      UK    150   0.02   0.13      2
122      UK    150   0.02   0.13     98
123      RK   3500   0.02   0.02   0.02   TRAP     36      1
124      RK   2600  0.008  0.035         TRAP     70    1.5    YES

125      KK  SUB212
126      KM       RUNOFF FROM SUB-BASIN 212
127      BA  0.176
128      LS          98                87
129      UK    150   0.02   0.13      2
130      UK    150   0.02   0.13     98
131      RK   2800   0.02   0.02   0.01   TRAP     36      1
132      RK   2500   0.02   0.02         TRAP     36      1     NO
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LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

133      KK   SD-3
134      KM       STORM DRAIN SD-3
135      BA  0.009
136      LS          98
137      UK    150   0.02   0.10    100
138      RK   1000   0.02   0.02  0.005   TRAP     60      1
139      RK   1100   0.02  0.005         CIRC      2          NO

140      KK  HYDSD
141      KM       COMBINE HYDROGRAPHS AT SD-3
142      HC      2
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143     KK  SUB213
144     KM      RUNOFF FROM SUB-BASIN 213
145     BA  0.070
146     LS          98                  84
147     UK    150   0.02   0.16     1
148     UK    150   0.02   0.16    99
149     RK   1900   0.02   0.02   0.01   TRAP    36     1
150     RK   2100  0.008  0.035          TRAP    20   4.0    YES

151     KK   SD-4
152     KM      STORM DRAIN SD-4
153     BA  0.010
154     LS          98
155     UK    150   0.02   0.10   100
156     RK   1000   0.01   0.02  0.005   TRAP    60     1
157     RK   1320   0.01  0.015          CIRC     2          NO

158     KK  HYDSD
159     KM      COMBINE HYDROGRAPHS AT SD-4
160     HC      2

161     KK  SUB214
162     KM      RUNOFF FROM SUB-BASIN 214
163     BA  0.118
164     LS          98                  88
165     UK    150   0.18   0.13     2
166     UK    150   0.18   0.13    98
167     RK   1800   0.18   0.05   0.01   TRAP     3     2
168     RK   1900   0.15  0.035          TRAP    20   4.0     NO

169     KK  SUB215
170     KM      RUNOFF FROM SUB-BASIN 215
171     BA  0.182
172     LS          98                  84
173     UK    150   0.05   0.16     1
174     UK    150   0.05   0.16    99
175     RK   2100   0.05   0.05   0.02   TRAP     3     2
176     RK   3200   0.04  0.015          CIRC    12          YES
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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

177     KK  HYD215
178     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 215
179     HC      2

180     KK  SUB216
181     KM      RUNOFF FROM SUB-BASIN 216
182     BA  0.217
183     LS          88
184     UK    150  0.005   0.16   100
185     RK    200  0.005   0.02   0.02   TRAP    36     1
186     RK   3100  0.008  0.035          TRAP    50   4.0    YES

187     KK  SUB217
188     KM      RUNOFF FROM SUB-BASIN 217
189     BA  0.276
190     LS          98                  86
191     UK    150  0.015   0.13     4
192     UK    150  0.015   0.13    96
193     RK   4500  0.015   0.02   0.02   TRAP    36     1
194     RK   2800  0.013  0.035          TRAP    40   4.0     NO
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195     KK   SD-5
196     KM       STORM DRAIN SD-5
197     BA  0.011
198     LS          98
199     UK    150   0.01   0.10    100
200     RK   1000   0.01   0.02  0.005   TRAP     60      1
201     RK   1540   0.01  0.015         CIRC      2          NO

202     KK  HYD217
203     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 217
204     HC      3

205     KK  SUB218
206     KM       RUNOFF FROM SUB-BASIN 218
207     BA  0.151
208     LS          88
209     UK    150  0.005   0.16    100
210     RK   2100  0.005   0.02   0.01   TRAP     36      1
211     RK   3000  0.008  0.035         TRAP     40    4.0    YES

212     KK  SUB219
213     KM       RUNOFF FROM SUB-BAISN 219
214     BA  0.382
215     LS          98                 87
216     UK    150   0.08   0.13      3
217     UK    150   0.08   0.13     97
218     RK   3000   0.08   0.05   0.02   TRAP      4      2
219     RK   2500   0.05   0.05         TRAP     10    1.5     NO
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


220     KK  SUB220
221     KM       RUNOFF FROM SUB-BASIN 220
222     BA  0.078
223     LS          98                 87
224     UK    150   0.10   0.13      6
225     UK    150   0.10   0.13     94
226     RK   2000   0.10   0.05   0.01   TRAP      3      2
227     RK   2100   0.08   0.05         TRAP      8      1     NO

228     KK  HYD220
229     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 220
230     HC      2

231     KK  SUB221
232     KM       RUNOFF FROM SUB-BASIN 221
233     BA  0.054
234     LS          80
235     UK    150   0.04   0.16    100
236     RK   2200   0.04   0.05  0.005   TRAP      3      2
237     RK   2500   0.03   0.05         TRAP     12    1.5    YES

238     KK  SUB222
239     KM       RUNOFF FROM SUB-BASIN 222
240     BA  0.126
241     LS          98                 85
242     UK    150   0.10   0.13      4
243     UK    150   0.10   0.13     96
244     RK   1800   0.10   0.05   0.01   TRAP      3      2
245     RK   1200   0.04  0.035         TRAP     12    1.5     NO

246     KK  SUB223
247     KM       RUNOFF FROM SUB-BASIN 223
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248      BA  0.176
249      LS          84
250      UK   150   0.02   0.16    100
251      RK   2200   0.02   0.02   0.02   TRAP    36     1
252      RK   2800   0.02  0.035         TRAP    15   1.5    YES

253      KK   SD-9
254      KM      STORM DRAIN SD-9
255      BA  0.010
256      LS          98
257      UK   150   0.01   0.10    100
258      RK   1000   0.01   0.02  0.005   TRAP    60     1
259      RK   1320   0.01  0.015         CIRC     2          NO

260      KK  SD-10
261      KM      STORM DRAIN SD-10
262      BA  0.006
263      LS          98
264      UK   150   0.01   0.10    100
265      RK   500   0.01   0.02  0.003   TRAP    60     1
266      RK   1430   0.01  0.015         CIRC     3          YES
1                              HEC-1 INPUT                                PAGE 7

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


267      KK  HYD223
268      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 223
269      HC     3

270      KK  SUB224
271      KM      RUNOFF FROM SUB-BASIN 224
272      BA  0.353
273      LS          98                86
274      UK   150   0.02   0.16     1
275      UK   150   0.02   0.16    99
276      RK   6600   0.02   0.02   0.02   TRAP    36     1
277      RK   1350  0.005  0.035         TRAP    60   4.0    YES

278      KK   SD-6
279      KM      STORM DRAIN SD-6
280      BA  0.010
281      LS          98
282      UK   150   0.01   0.10    100
283      RK   1000   0.01   0.02  0.005   TRAP    60     1
284      RK   1650   0.01  0.015         CIRC     2          NO

285      KK  HYD224
286      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 224
287      HC     3

288      KK  SUB225
289      KM      RUNOFF FROM SUB-BASIN 225
290      BA  0.007
291      LS          98                86
292      UK   150  0.008   0.16     1
293      UK   150  0.008   0.16    99
294      RK   150  0.008   0.02  0.005   TRAP    36     1
295      RK   800  0.008  0.035         TRAP    40   1.5    YES

296      KK  HYD225
297      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 225
298      HC     2

299      KK  SUB226
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300     KM      RUNOFF FROM SUB-BASIN 226
301     BA  0.337
302     LS          98                  86
303     UK    150  0.008   0.16     2
304     UK    150  0.008   0.16    98
305     RK   3000  0.008   0.02   0.02   TRAP    36     1
306     RK   4000  0.008  0.035         TRAP    80   1.5    YES

307     KK  SD-11
308     KM      STORM DRAIN SD-11
309     BA  0.010
310     LS          98
311     UK    150   0.02   0.10    100
312     RK   1000   0.02   0.02  0.005   TRAP    60     1
313     RK   1430   0.02  0.015         CIRC     2          NO
1                            HEC-1 INPUT                                PAGE  8

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


314     KK  HYDSD
315     KM      COMBINE HYDROGRAPHS AT SD-11
316     HC     2

317     KK  SUB227
318     KM      RUNOFF FROM SUB-BASIN 227
319     BA  0.208
320     LS          98                  88
321     UK    150   0.05   0.13     7
322     UK    150   0.05   0.13    93
323     RK   1800   0.05   0.05   0.02   TRAP     3     2
324     RK   1600   0.10   0.05         TRAP     5   1.5    NO

325     KK  SUB228
326     KM      RUNOFF FROM SUB-BASIN 228
327     BA  0.069
328     LS          98                  86
329     UK    150  0.015   0.20     2
330     UK    150  0.015   0.20    98
331     RK   1200  0.015   0.02   0.01   TRAP    36     1
332     RK   1800   0.02  0.035         TRAP    15   1.5    YES

333     KK  SD-12
334     KM      STORM DRAIN SD-12
335     BA  0.009
336     LS          98
337     UK    150   0.02   0.10    100
338     RK   1000   0.02   0.02  0.005   TRAP    60     1
339     RK   1100   0.02  0.015         CIRC     2          NO

340     KK  HYDSD
341     KM      COMBINE HYDROGRAPHS AT SD-12
342     HC     2

343     KK  SUB229
344     KM      RUNOFF FROM SUB-BASIN 229
345     BA  0.031
346     LS          86
347     UK    150  0.015   0.20    100
348     RK   1200  0.015   0.02  0.005   TRAP    36     1
349     RK   1350   0.02  0.035         TRAP    15   1.5    YES

350     KK  HYD229
351     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 229
352     HC     2
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353     KK  SUB230
354     KM      RUNOFF FROM SUB-BASIN 230
355     BA  0.084
356     LS          79
357     UK    150  0.008   0.16    100
358     RK   1500  0.008   0.02   0.01   TRAP    36     1
359     RK   1300  0.008  0.035         TRAP    80   1.5    YES
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LINE    ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

360     KK  SUB231
361     KM      RUNOFF FROM SUB-BASIN 231
362     BA  0.179
363     LS          98                88
364     UK    150   0.18   0.13     10
365     UK    150   0.18   0.13     90
366     RK   1500   0.18   0.05   0.02   TRAP     3     2
367     RK   1100   0.10   0.04         TRAP     5     1    NO

368     KK  SUB232
369     KM      RUNOFF FROM SUB-BASIN 232
370     BA  0.124
371     LS          85
372     UK    150   0.04   0.13    100
373     RK   1600   0.04   0.05   0.01   TRAP     5     2
374     RK   2500   0.03  0.035         TRAP    25   4.0    YES

375     KK   SD-7
376     KM      STORM DRAIN SD-7
377     BA  0.003
378     LS          98
379     UK    150   0.03   0.10    100
380     RK   1000   0.03   0.02  0.005   TRAP    60     1
381     RK   1320   0.03  0.015         CIRC     2          NO

382     KK   SD-8
383     KM      STORM DRAIN SD-8
384     BA  0.010
385     LS          98
386     UK    150  0.005   0.10    100
387     RK    500  0.005   0.02  0.002   TRAP    60     1
388     RK    700  0.005  0.015         CIRC     3          YES

389     KK  HYDSD
390     KM      COMBINE HYDROGRAPHS AT SD-7/SD-8
391     HC      2

392     KK  SUB234
393     KM      RUNOFF FROM SUB-BASIN 234
394     BA  0.101
395     LS          98                88
396     UK    150   0.18   0.13     10
397     UK    150   0.18   0.13     90
398     RK   1000   0.18   0.05   0.01   TRAP     2     2
399     RK   1500   0.16   0.05         TRAP     5     1    NO

400     KK  SUB235
401     KM      RUNOFF FROM SUB-BASIN 235
402     BA  0.124
403     LS          98                86
404     UK    150   0.04   0.13      3
405     UK    150   0.04   0.13     97
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406      RK   2500   0.04   0.05   0.01   TRAP     5     2
407      RK   2100   0.03  0.035         TRAP    20   1.5    YES
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LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


408      KK  HYD235
409      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 235
410      HC      2

411      KK  SUB236
412      KM       RUNOFF FROM SUB-BASIN 236
413      BA  0.146
414      LS          85
415      UK    150   0.02   0.16    100
416      RK    800   0.02   0.02   0.01   TRAP    36     1
417      RK   3600  0.025  0.035         TRAP    20   1.5    YES

418      KK  SUB237
419      KM       RUNOFF FROM SUB-BASIN 237
420      BA  0.010
421      LS          85
422      UK    150   0.02   0.16    100
423      RK    250   0.02   0.02  0.005   TRAP    36     1
424      RK    800   0.02  0.035         TRAP    40   4.0    YES

425      KK  SUB240
426      KM       RUNOFF FROM SUB-BASIN 240
427      BA  0.056
428      LS          98                 86
429      UK    150   0.04   0.13      2
430      UK    150   0.04   0.13     98
431      RK   1500   0.04   0.05  0.005   TRAP     5     1
432      RK    500   0.01  0.035         TRAP    10   4.0     NO

433      KK  SUB238
434      KM       RUNOFF FROM SUB-BASIN 238
435      BA  0.060
436      LS          98                 88
437      UK    150   0.18   0.13     10
438      UK    150   0.18   0.13     90
439      RK   1000   0.18   0.05  0.005   TRAP     2     1
440      RK   1000   0.16   0.05         TRAP     6     1     NO

441      KK  SUB239
442      KM       RUNOFF FROM SUB-BASIN 239
443      BA  0.022
444      LS          98                 87
445      UK    150   0.03   0.13      2
446      UK    150   0.03   0.13     98
447      RK    700   0.03   0.05  0.005   TRAP     5     1
448      RK   1400   0.05   0.05         TRAP    10     1    YES

449      KK  HYD239
450      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 239
451      HC      2
1                          HEC-1 INPUT                                PAGE 11

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


452      KK  SUB241
453      KM       RUNOFF FROM SUB-BASIN 241
454      BA  0.020
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455      LS          87
456      UK   150   0.03   0.16    100
457      RK   700   0.03   0.02  0.005   TRAP    36     1
458      RK   1000   0.03  0.035         TRAP    20    4.0    YES

459      KK  SUB242
460      KM       RUNOFF FROM SUB-BASIN 242
461      BA  0.105
462      LS          98                88
463      UK   150   0.12   0.13     10
464      UK   150   0.12   0.13     90
465      RK   1000   0.12   0.05   0.01   TRAP     2     1
466      RK   1600   0.05   0.05         TRAP     6     1     NO

467      KK  SUB243
468      KM       RUNOFF FROM SUB-BASIN 243
469      BA  0.087
470      LS          98                87
471      UK   150   0.05   0.13      3
472      UK   150   0.05   0.13     97
473      RK   1700   0.05   0.05   0.01   TRAP     3     2
474      RK   2100   0.04  0.045         TRAP    10     1    YES

475      KK  HYD243
476      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 243
477      HC      2

478      KK  SUB245
479      KM       RUNOFF FROM SUB-BASIN 245
480      BA  0.049
481      LS          98                88
482      UK   150   0.12   0.13     10
483      UK   150   0.12   0.13     90
484      RK   800   0.12   0.05  0.005   TRAP     2     2
485      RK   1200   0.12   0.05         TRAP     5     1     NO

486      KK  SUB246
487      KM       RUNOFF FROM SUB-BASIN 246
488      BA  0.129
489      LS          87
490      UK   150   0.02   0.13    100
491      RK   2200   0.02   0.02   0.01   TRAP    36     1
492      RK   3200   0.03  0.035         TRAP    15    1.5    YES

493      KK  SUB247
494      KM       RUNOFF FROM SUB-BASIN 247
495      BA  0.031
496      LS          84
497      UK   150   0.02   0.16    100
498      RK   1000   0.02   0.02  0.005   TRAP    36     1
499      RK   1200   0.03  0.015         TRAP    40    4.0    YES
```



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

500      KK  HYD247
501      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 247
502      HC      2

503      KK  SUB244
504      KM       RUNOFF FROM SUB-BASIN 244
505      BA  0.074
506      LS          86
507      UK   150   0.03   0.16    100
```

```
508     RK   1500   0.03   0.05  0.005   TRAP     3     2
509     RK   1600   0.03  0.045         TRAP    12     1    YES

510     KK  SUB249
511     KM       RUNOFF FROM SUB-BASIN 249
512     BA  0.134
513     LS          85
514     UK    150  0.015   0.16    100
515     RK   2600  0.015   0.02   0.01   TRAP    36     1
516     RK   1900   0.02  0.035         TRAP    25   1.5    YES

517     KK  HYD249
518     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 249
519     HC      2

520     KK  SUB250
521     KM       RUNOFF FROM SUB-BASIN 250
522     BA  0.381
523     LS          85
524     UK    150   0.01   0.16    100
525     RK   4700   0.01   0.02   0.02   TRAP    36     1
526     RK   1800   0.01  0.035         TRAP    40   1.5    YES

527     KK  SD-16
528     KM       STORM DRAIN SD-16
529     BA  0.013
530     LS          98
531     UK    150   0.02   0.10    100
532     RK   1000   0.02   0.02  0.005   TRAP    60     1
533     RK   2090   0.02  0.015         CIRC     2          NO

534     KK  SD-15
535     KM       STORM DRAIN SD-15
536     BA  0.010
537     LS          98
538     UK    150   0.01   0.10    100
539     RK    500   0.01   0.02  0.005   TRAP    60     1
540     RK   2310   0.01  0.015         CIRC     3          YES

541     KK  SD-14
542     KM       STORM DRIAN SD-14
543     BA  0.013
544     LS          98
545     UK    150  0.005   0.10    100
546     RK    500  0.005   0.02  0.006   TRAP    60     1
```



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

547     RK   2860  0.005  0.015          CIRC     3          YES

548     KK  HYD250
549     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 250
550     HC      3

551     KK  SUB251
552     KM       RUNOFF FROM SUB-BASIN 251
553     BA  0.144
554     LS          83
555     UK    150  0.007   0.20    100
556     RK   2500  0.007   0.02   0.01   TRAP    36     1
557     RK   2100   0.01  0.035         TRAP   100   1.5    YES

558     KK  SD-13
559     KM       STORM DRAIN SD-13
```

```
560     BA  0.010
561     LS          98
562     UK    150  0.005   0.10    100
563     RK   1000  0.005   0.02  0.005   TRAP     60      1
564     RK   1320  0.005  0.015         CIRC      3          NO

565     KK  HYDSD
566     KM       COMBINE HYDROGRAPHS AT SD-13
567     HC      2

568     KK  SUB252
569     KM       RUNOFF FROM SUB-BASIN 252
570     BA  0.195
571     LS          85
572     UK    150  0.007   0.13    100
573     RK   3100  0.007   0.02   0.02   TRAP     36      1
574     RK   2000   0.01   0.02         TRAP     36      1     NO

575     KK  SUB253
576     KM       RUNOFF FROM SUB-BASIN 253
577     BA  0.019
578     LS          86
579     UK    150  0.007   0.20    100
580     RK    600  0.007   0.02  0.005   TRAP     36      1
581     RK   1200   0.01  0.015         CIRC     15          YES

582     KK  HYD253
583     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 253
584     HC      2

585     KK  SUB254
586     KM       RUNOFF FROM SUB-BASIN 254
587     BA  0.325
588     LS          98                 84
589     UK    150  0.007   0.20      1
590     UK    150  0.007   0.20     99
591     RK   3500  0.007   0.02   0.02   TRAP     36      1
592     RK   2300   0.01  0.035         TRAP    100    1.5    YES
```



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

593     KK  SUB255
594     KM       RUNOFF FROM SUB-BASIN 255
595     BA  0.080
596     LS          98                 88
597     UK    150   0.18   0.13     12
598     UK    150   0.18   0.13     88
599     RK   1300   0.18   0.05   0.01   TRAP      2      2
600     RK    700   0.18   0.05         TRAP      4      1     NO

601     KK  SUB256
602     KM       RUNOFF FROM SUB-BASIN 256
603     BA  0.206
604     LS          98                 88
605     UK    150   0.18   0.13     10
606     UK    150   0.18   0.13     90
607     RK   2400   0.18   0.05   0.02   TRAP      3      2
608     RK   2000   0.15   0.05         TRAP     10      1    YES

609     KK  SUB257
610     KM       RUNOFF FROM SUB-BASIN 257
611     BA  0.088
612     LS          85
```

```
613     UK    150   0.04   0.13    100
614     RK   1600   0.04  0.035   0.01   TRAP     5     2
615     RK   1700   0.05  0.035         TRAP     8     2   YES

616     KK  SUB258
617     KM       RUNOFF FROM SUB-BASIN 258
618     BA  0.187
619     LS          84
620     UK    150   0.02   0.13    100
621     RK   1800   0.02   0.02   0.02   TRAP    36     1
622     RK   3500  0.025  0.035         TRAP    20   1.5   YES

623     KK  SD-17
624     KM       STORM DRAIN SD-17
625     BA  0.010
626     LS          98
627     UK    150  0.005   0.10    100
628     RK   1000  0.005   0.02  0.005   TRAP    60     1
629     RK   1430  0.005  0.015         CIRC     3          NO

630     KK  HYDSD
631     KM       COMBINE HYDROGRAPHS AT SD-17
632     HC      2

633     KK  SUB259
634     KM       RUNOFF FROM SUB-BASIN 259
635     BA  0.137
636     LS          80
637     UK    150  0.007   0.16    100
638     RK   2500  0.007   0.02   0.01   TRAP    36     1
639     RK   3500   0.01  0.035         TRAP    30   1.5   YES
```



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


640     KK  SUB260
641     KM       RUNOFF FROM SUB-BASIN 260
642     BA  0.014
643     LS          83
644     UK    150  0.007   0.13    100
645     RK    800  0.007   0.02  0.005   TRAP    36     1
646     RK    400  0.025  0.035         TRAP     5   1.5    NO

647     KK  SUB261
648     KM       RUNOFF FROM SUB-BASIN 261
649     BA  0.152
650     LS          85
651     UK    150  0.007   0.13    100
652     RK   5800  0.007   0.02   0.01   TRAP    36     1
653     RK    800  0.005  0.035         TRAP    10   4.0   YES

654     KK  SUB262
655     KM       RUNOFF FROM SUB-BASIN 262
656     BA  0.401
657     LS          81
658     UK    150   0.02   0.13    100
659     RK   6000   0.02   0.02   0.02   TRAP    36     1
660     RK   1100  0.005  0.035         TRAP    30   4.0   YES

661     KK  SUB263
662     KM       RUNOFF FROM SUB-BASIN 263
663     BA  0.063
664     LS          88
665     UK    150   0.15   0.13    100
```

```
666     RK   1500   0.15   0.05   0.01   TRAP     1     2
667     RK    300   0.11   0.05          TRAP     5     1    NO

668     KK  SD-18
669     KM       STORM DRAIN SD-18
670     BA  0.014
671     LS          98
672     UK    150   0.01   0.10    100
673     RK   1000   0.01   0.02  0.007   TRAP    60     1
674     RK   2310   0.01  0.015          CIRC     3          NO

675     KK  HYDSD
676     KM       COMBINE HYDROGRAPHS AT SD-18
677     HC      2

678     KK  SUB264
679     KM       RUNOFF FROM SUB-BASIN 264
680     BA  0.090
681     LS          76
682     UK    150   0.02   0.13    100
683     RK   1500   0.02   0.02   0.01   TRAP    36     1
684     RK   3100  0.025  0.035          TRAP    15   1.5    YES
```



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


685     KK  SUB265
686     KM       RUNOFF FROM SUB-BASIN 265
687     BA  0.270
688     LS          83
689     UK    150   0.02   0.13    100
690     RK   3000   0.02   0.02   0.02   TRAP    36     1
691     RK   3000  0.025  0.035          TRAP    15   1.5    YES

692     KK  HYD265
693     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 265
694     HC      2

695     KK  SUB266
696     KM       RUNOFF FROM SUB-BASIN 266
697     BA  0.164
698     LS          84
699     UK    150   0.02   0.16    100
700     RK   2000   0.02   0.02   0.01   TRAP    36     1
701     RK   2500   0.01  0.035          TRAP    50    4.0    YES

702     KK  SD-24
703     KM       STORM DRAIN SD-24
704     BA  0.016
705     LS          98
706     UK    150   0.01   0.10    100
707     RK   1000   0.01   0.02  0.008   TRAP    60     1
708     RK   2750   0.01  0.015          CIRC     3          NO

709     KK  HYD266
710     KM       COMBINE HYDROGRAPHS AT OUTLET FROM 266
711     HC      3

712     KK  SUB267
713     KM       RUNOFF FROM SUB-BASIN 267
714     BA  0.158
715     LS          78
716     UK    150   0.01   0.13    100
717     RK   4000  0.007   0.02   0.02   TRAP    36     1
```

```
718      RK   2000   0.01   0.035         TRAP     40    1.5    YES

719      KK  SUB285
720      KM       RUNOFF FROM SUB-BASIN 285
721      BA  0.236
722      LS          84
723      UK    150   0.01   0.13    100
724      RK   3000   0.01   0.02   0.02   TRAP     36      1
725      RK   2500  0.008  0.015         CIRC      8          NO

726      KK  HYD285
727      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 285
728      HC      2
```



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


729      KK  SUB268
730      KM       RUNOFF FROM SUB-BASIN 268
731      BA  0.122
732      LS          81
733      UK    150  0.007   0.13    100
734      RK   2300  0.007   0.02   0.01   TRAP     36      1
735      RK   2500   0.01  0.035         TRAP     40    1.5    YES

736      KK  HYD268
737      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 268
738      HC      2

739      KK  SUB269
740      KM       RUNOFF FROM SUB-BASIN 269
741      BA  0.291
742      LS          98                 78
743      UK    150  0.007   0.20      5
744      UK    150  0.007   0.20     95
745      RK   2400  0.007   0.02   0.02   TRAP     36      1
746      RK   3000   0.01  0.035         TRAP    120    1.5    YES

747      KK  SD-26
748      KM       STORM DRAIN SD-26
749      BA  0.012
750      LS          98
751      UK    150   0.01   0.10    100
752      RK   1000   0.01   0.02  0.006   TRAP     60      1
753      RK   1760   0.01  0.015         CIRC      2          NO

754      KK  SD-27
755      KM       STORM DRAIN SD-27
756      BA  0.011
757      LS          98
758      UK    150   0.02   0.10    100
759      RK   1000   0.02   0.02  0.005   TRAP     60      1
760      RK   1650   0.02  0.015         CIRC      2          NO

761      KK  HYDSD
762      KM       COMBINE HYDROGRAPHS AT SD-26/SD-27
763      HC      2

764      KK  SD-28
765      KM       STORM DRAIN SD-28
766      BA  0.006
767      LS          98
768      UK    150  0.005   0.10    100
769      RK    500  0.005   0.02  0.003   TRAP     60      1
```

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 770      RK   1320  0.005  0.015        CIRC     3         YES
1                              HEC-1 INPUT                              PAGE 18

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


 771      KK  HYDSD
 772      KM      COMBINE HYDROGRAPHS AT SD-28
 773      HC      2

 774      KK  SUB270
 775      KM      RUNOFF FROM SUB-BASIN 270
 776      BA  0.190
 777      LS          88
 778      UK    150  0.007   0.13    100
 779      RK   2100  0.007   0.02   0.02   TRAP    36     1
 780      RK   2000   0.01   0.02        TRAP    36     1    NO

 781      KK  SUB271
 782      KM      RUNOFF FROM SUB-BASIN 271
 783      BA  0.079
 784      LS          88
 785      UK    150  0.007   0.13    100
 786      RK   2000  0.007   0.02   0.01   TRAP    36     1
 787      RK   1100   0.01  0.035        TRAP    20   4.0    YES

 788      KK  SUB272
 789      KM      RUNOFF FROM SUB-BASIN 272
 790      BA  0.084
 791      LS          84
 792      UK    150  0.007   0.13    100
 793      RK   4700  0.007   0.02   0.01   TRAP    36     1
 794      RK    900  0.005  0.035        TRAP    30   4.0    YES

 795      KK  HYD272
 796      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 272
 797      HC      2

 798      KK  SUB274
 799      KM      RUNOFF FROM SUB-BASIN 274
 800      BA  0.002
 801      LS          98              79
 802      UK    150  0.007   0.13     1
 803      UK    150  0.007   0.13    99
 804      RK    150  0.007   0.02  0.002   TRAP    36     1
 805      RK    300   0.01  0.035        TRAP   120   1.5    YES

 806      KK  SUB273
 807      KM      RUNOFF FROM SUB-BASIN 273
 808      BA  0.126
 809      LS          98              86
 810      UK    150   0.02   0.13     4
 811      UK    150   0.02   0.13    96
 812      RK    800   0.02   0.02   0.01   TRAP    36     1
 813      RK   3800   0.04  0.035        TRAP    15   1.5    NO
1                              HEC-1 INPUT                              PAGE 19

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


 814      KK  HYD274
 815      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 274
 816      HC      2

 817      KK  SUB275
```

```
818     KM      RUNOFF FROM SUB-BASIN 275
819     BA  0.010
820     LS          81
821     UK    150  0.007   0.13    100
822     RK    900  0.007   0.02  0.005   TRAP    36     1
823     RK    500   0.01  0.035         TRAP   120    1.5    YES

824     KK  SUB276
825     KM      RUNOFF FROM SUB-BASIN 276
826     BA  0.279
827     LS          98                 88
828     UK    150   0.18   0.13     12
829     UK    150   0.18   0.13     88
830     RK   1300   0.18   0.05   0.02   TRAP     3     2
831     RK   3000   0.14   0.05         TRAP     5     1    NO

832     KK  SUB277
833     KM      RUNOFF FROM SUB-BASIN 277
834     BA  0.084
835     LS          98                 85
836     UK    150   0.05   0.13      1
837     UK    150   0.05   0.13     99
838     RK   1500   0.05   0.05   0.01   TRAP     2     2
839     RK   4000   0.04   0.05         TRAP    65    1.5    YES

840     KK  HYD277
841     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 277
842     HC      2

843     KK  SUB278
844     KM      RUNOFF FROM SUB-BASIN 278
845     BA  0.304
846     LS          85
847     UK    150  0.007   0.13    100
848     RK   3600  0.007   0.02   0.02   TRAP    36     1
849     RK   2400   0.01  0.035         TRAP   120    1.5    YES

850     KK  SUB279
851     KM      RUNOFF FROM SUB-BASIN 279
852     BA  0.141
853     LS          87
854     UK    150  0.007   0.13    100
855     RK   2800  0.007   0.02   0.01   TRAP    36     1
856     RK   2500  0.007   0.02         TRAP    10    4.0    NO
```



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


857     KK  SUB286
858     KM      RUNOFF FROM SUB-BASIN 286
859     BA  0.146
860     LS          88
861     UK    150   0.01   0.13    100
862     RK   1500   0.01   0.02   0.01   TRAP    36     1
863     RK   4000   0.01   0.02         TRAP    36     1    NO

864     KK  SUB280
865     KM      RUNOFF FROM SUB=BASIN 280
866     BA  0.229
867     LS          87
868     UK    150  0.007   0.16    100
869     RK   5000  0.007   0.02   0.02   TRAP    36     1
870     RK   1300  0.005  0.035         TRAP    20    4.0    YES
```

```
871     KK  SUB281
872     KM      RUNOFF FROM SUB-BASIN 281
873     BA  0.045
874     LS          85
875     UK    150   0.01   0.13    100
876     RK   1800   0.01   0.02   0.01   TRAP    36     1
877     RK   3500   0.01   0.02          TRAP    36     1    NO

878     KK  SUB282
879     KM      RUNOFF FROM SUB-BASIN 282
880     BA  0.098
881     LS          86
882     UK    150  0.007   0.13    100
883     RK   3600  0.007   0.02   0.01   TRAP    36     1
884     RK   1000  0.005  0.035          TRAP    10   4.0    YES

885     KK  SUB283
886     KM      RUNOFF FROM SUB-BASIN 283
887     BA  0.123
888     LS          86
889     UK    150  0.007   0.13    100
890     RK   4000  0.007   0.02   0.01   TRAP    36     1
891     RK    500  0.005  0.035          TRAP    20   4.0    YES

892     KK  HYD288
893     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 288
894     HC      4

895     KK  SD-19
896     KM      STORM DRAIN SD-19
897     BA  0.013
898     LS          98
899     UK    150   0.02   0.10    100
900     RK   1000   0.02   0.02  0.006   TRAP    60     1
901     RK   1980   0.02  0.015          CIRC     2          NO
```



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

902     KK  SD-20
903     KM      STORM DRAIN SD-20
904     BA  0.011
905     LS          98
906     UK    150   0.01   0.10    100
907     RK    500   0.01   0.02  0.005   TRAP    60     1
908     RK   1540   0.01  0.015          CIRC     3          YES

909     KK  SD-21
910     KM      STORM DRAIN S-21
911     BA  0.013
912     LS          98
913     UK    150   0.01   0.10    100
914     RK   1000   0.01   0.02  0.006   TRAP    60     1
915     RK   1980   0.01  0.015          CIRC     3          NO

916     KK  SD-22
917     KM      STORM DRAIN SD-22
918     BA  0.008
919     LS          98
920     UK    150   0.01   0.10    100
921     RK    500   0.01   0.02  0.004   TRAP    60     1
922     RK   2020   0.01  0.015          CIRC     3          YES

923     KK  SD-23
```

```
924     KM      STORM DRAIN SD-23
925     BA  0.010
926     LS          98
927     UK    150  0.005   0.10    100
928     RK    500  0.005   0.02  0.005   TRAP    60     1
929     RK   2200  0.005  0.015         CIRC    4        YES

930     KK  SD-25
931     KM      STORM DRAIN SD-25
932     BA  0.011
933     LS          98
934     UK    150  0.005   0.10    100
935     RK   1000  0.005   0.02  0.005   TRAP    60     1
936     RK   1540  0.005  0.015         CIRC    3        NO
937     ZZ
1
        SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE   (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

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

  6    SUB201
         V
         V
 20    SUB202 ***
         .
         .
 28       .    SUB203
         .       V
         .       V
 36       .    SUB204 ***
         .       .
         .       .
 44    HYD204............
         V
         V
 47    SUB205 ***
         .
         .
 55       .    SUB206
         .       .
         .       .
 63    HYD206............
         V
         V
 66    SUB207 ***
         V
         V
 74    SUB208 ***
         .
         .
 82       .    SUB209
         .       .
         .       .
 90       .       .     SD-1
         .       .       .
         .       .       .
 97       .       .       .     SD-2
         .       .       .       .
         .       .       .       .
104       .    HYDSD ........................
         .       V
         .       V
107       .    SUB210 ***
```

```
        .       .
        .       .
114     HYD210............
         V
         V
117     SUB211 ***
        .
        .
125      .    SUB212
        .       .
        .       .
133      .       .     SD-3
        .       .       .
        .       .       .
140      .    HYDSD .............
        .       V
        .       V
143      .    SUB213 ***
        .       .
        .       .
151      .       .     SD-4
        .       .       .
        .       .       .
158      .    HYDSD .............
        .       .
        .       .
161      .       .    SUB214
        .       .       V
        .       .       V
169      .       .    SUB215 ***
        .       .       .
        .       .       .
177      .    HYD215............
        .       V
        .       V
180      .    SUB216 ***
        .       .
        .       .
187      .       .    SUB217
        .       .       .
        .       .       .
195      .       .       .     SD-5
        .       .       .       .
        .       .       .       .
202      .    HYD217........................
        .       V
        .       V
205      .    SUB218 ***
        .       .
        .       .
212      .       .    SUB219
        .       .       .
        .       .       .
220      .       .       .    SUB220
        .       .       .       .
        .       .       .       .
228      .       .    HYD220............
        .       .       V
        .       .       V
231      .       .    SUB221 ***
        .       .       .
        .       .       .
238      .       .       .    SUB222
        .       .       .       V
        .       .       .       V
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246      .       .       .    SUB223 ***
       .       .       .       .
       .       .       .       .
253      .       .       .       .     SD-9
       .       .       .       .       V
       .       .       .       .       V
260      .       .       .       .    SD-10 ***
       .       .       .       .       .
       .       .       .       .       .
267      .       .    HYD223.......................
       .       .       V
       .       .       V
270      .       .    SUB224 ***
       .       .       .
       .       .       .
278      .       .       .     SD-6
       .       .       .       .
       .       .       .       .
285      .    HYD224.......................
       .       V
       .       V
288      .    SUB225 ***
       .       .
       .       .
296    HYD225............
        V
        V
299    SUB226 ***
       .
       .
307      .     SD-11
       .       .
       .       .
314    HYDSD .............
       .
       .
317      .    SUB227
       .       V
       .       V
325      .    SUB228 ***
       .       .
       .       .
333      .       .     SD-12
       .       .       .
       .       .       .
340      .    HYDSD .............
       .       V
       .       V
343      .    SUB229 ***
       .       .
       .       .
350    HYD229............
        V
        V
353    SUB230 ***
       .
       .
360      .    SUB231
       .       V
       .       V
368      .    SUB232 ***
       .       .
       .       .
375      .       .     SD-7
       .       .       V
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        .       .       V
382     .       .       SD-8 ***
        .       .       .
        .       .       .
389     .       HYDSD ............
        .       .
        .       .
392     .       .       SUB234
        .       .       V
        .       .       V
400     .       .       SUB235 ***
        .       .       .
        .       .       .
408     .       HYD235............
        .       V
        .       V
411     .       SUB236 ***
        .       V
        .       V
418     .       SUB237 ***
        .       .
        .       .
425     .       .       SUB240
        .       .       .
        .       .       .
433     .       .       .       SUB238
        .       .       .       V
        .       .       .       V
441     .       .       .       SUB239 ***
        .       .       .       .
        .       .       .       .
449     .       .       HYD239............
        .       .       V
        .       .       V
452     .       .       SUB241 ***
        .       .       .
        .       .       .
459     .       .       .       SUB242
        .       .       .       V
        .       .       .       V
467     .       .       .       SUB243 ***
        .       .       .       .
        .       .       .       .
475     .       .       HYD243............
        .       .       .
        .       .       .
478     .       .       .       SUB245
        .       .       .       V
        .       .       .       V
486     .       .       .       SUB246 ***
        .       .       .       V
        .       .       .       V
493     .       .       .       SUB247 ***
        .       .       .       .
        .       .       .       .
500     .       .       HYD247............
        .       .       V
        .       .       V
503     .       .       SUB244 ***
        .       .       V
        .       .       V
510     .       .       SUB249 ***
        .       .       .
        .       .       .
517     .       HYD249............
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        .       V
        .       V
520       .   SUB250 ***
        .       .
        .       .
527       .       .     SD-16
        .       .       V
        .       .       V
534       .       .     SD-15 ***
        .       .       V
        .       .       V
541       .       .     SD-14 ***
        .       .       .
        .       .       .
548   HYD250.......................
        V
        V
551   SUB251 ***
        .
        .
558       .   SD-13
        .       .
        .       .
565   HYDSD ............
        .
        .
568       .   SUB252
        .       V
        .       V
575       .   SUB253 ***
        .       .
        .       .
582   HYD253............
        V
        V
585   SUB254 ***
        .
        .
593       .   SUB255
        .       V
        .       V
601       .   SUB256 ***
        .       V
        .       V
609       .   SUB257 ***
        .       V
        .       V
616       .   SUB258 ***
        .       .
        .       .
623       .       .     SD-17
        .       .       .
        .       .       .
630       .   HYDSD ............
        .       V
        .       V
633       .   SUB259 ***
        .       .
        .       .
640       .       .     SUB260
        .       .       V
        .       .       V
647       .       .     SUB261 ***
        .       .       V
        .       .       V
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654      .       .    SUB262 ***
       .       .       .
       .       .       .
661      .       .       .    SUB263
       .       .       .       .
       .       .       .       .
668      .       .       .       .    SD-18
       .       .       .       .       .
       .       .       .       .       .
675      .       .       .    HYDSD ............
       .       .       .       V
       .       .       .       V
678      .       .       .    SUB264 ***
       .       .       .       V
       .       .       .       V
685      .       .       .    SUB265 ***
       .       .       .       .
       .       .       .       .
692      .       .    HYD265............
       .       .       V
       .       .       V
695      .       .    SUB266 ***
       .       .       .
       .       .       .
702      .       .       .    SD-24
       .       .       .       .
       .       .       .       .
709      .    HYD266........................
       .       V
       .       V
712      .    SUB267 ***
       .       .
       .       .
719      .       .    SUB285
       .       .       .
       .       .       .
726      .    HYD285............
       .       V
       .       V
729      .    SUB268 ***
       .       .
       .       .
736    HYD268............
        V
        V
739    SUB269 ***
        .
        .
747      .    SD-26
       .       .
       .       .
754      .       .    SD-27
       .       .       .
       .       .       .
761      .    HYDSD ............
       .       V
       .       V
764      .    SD-28 ***
       .       .
       .       .
771    HYDSD ............
        .
        .
774      .    SUB270
       .       V
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        .       V
781       .   SUB271 ***
        .       V
        .       V
788       .   SUB272 ***
        .       .
        .       .
795   HYD272............
       V
       V
798   SUB274 ***
        .
        .
806       .   SUB273
        .       .
        .       .
814   HYD274............
       V
       V
817   SUB275 ***
        .
        .
824       .   SUB276
        .       V
        .       V
832       .   SUB277 ***
        .       .
        .       .
840   HYD277............
       V
       V
843   SUB278 ***
        .
        .
850       .   SUB279
        .       .
        .       .
857       .       .   SUB286
        .       .       V
        .       .       V
864       .       .   SUB280 ***
        .       .       .
        .       .       .
871       .       .       .   SUB281
        .       .       .       V
        .       .       .       V
878       .       .       .   SUB282 ***
        .       .       .       V
        .       .       .       V
885       .       .       .   SUB283 ***
        .       .       .       .
        .       .       .       .
892   HYD288.................................
        .
        .
895       .   SD-19
        .       V
        .       V
902       .   SD-20 ***
        .       .
        .       .
909       .       .   SD-21
        .       .       V
        .       .       V
916       .       .   SD-22 ***
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          .      .      V
          .      .      V
 923      .      .     SD-23 ***
          .      .      .
          .      .      .
 930      .      .      .     SD-25

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION
1                                        ****
                 FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
        U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                         ****


                 CITY OF PHOENIX -- EAST BISCUIT FLAT DRAINAGE STUDY
                 KINEMATIC WAVE WATERSHED MODEL -- STORM DRAIN CONCEPT
                 2 YR. - 24 HR. STORM    CASE IV CONDITION

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

   IT        HYDROGRAPH TIME DATA
               NMIN        6  MINUTES IN COMPUTATION INTERVAL
              IDATE     1   0  STARTING DATE
              ITIME     0000  STARTING TIME
                NQ      150  NUMBER OF HYDROGRAPH ORDINATES
             NDDATE     1   0  ENDING DATE
             NDTIME     1454  ENDING TIME

           COMPUTATION INTERVAL    .10 HOURS
              TOTAL TIME BASE   14.90 HOURS

       ENGLISH UNITS
1
                                  RUNOFF SUMMARY
                              FLOW IN CUBIC FEET PER SECOND
                            TIME IN HOURS,  AREA IN SQUARE MILES

                          PEAK  TIME OF   AVERAGE FLOW FOR MAXIMUM PERIOD    BASIN   MAXIMUM    TIME OF
       OPERATION       STATION   FLOW   PEAK                                AREA    STAGE   MAX STAGE
+                                        6-HOUR   24-HOUR   72-HOUR

       HYDROGRAPH AT
+                SUB201     39.  6.00      4.       2.       2.      .05

       HYDROGRAPH AT
+                SUB202    142.  6.00     16.       7.       7.      .22

       HYDROGRAPH AT
+                SUB203     43.  6.00      5.       2.       2.      .08

       HYDROGRAPH AT
+                SUB204     93.  6.10     11.       5.       5.      .20

       2 COMBINED AT
+                HYD204    230.  6.00     28.      12.      12.      .42

       HYDROGRAPH AT
+                SUB205    249.  6.00     31.      13.      13.      .49

       HYDROGRAPH AT
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+	SUB206	184.	6.00	21.	9.	9.	.29
	2 COMBINED AT						
+	HYD206	432.	6.00	52.	22.	22.	.77
	HYDROGRAPH AT						
+	SUB207	447.	6.10	59.	25.	25.	.87
	HYDROGRAPH AT						
+	SUB208	535.	6.10	83.	36.	36.	1.22
	HYDROGRAPH AT						
+	SUB209	83.	6.20	17.	7.	7.	.27
	HYDROGRAPH AT						
+	SD-1	9.	6.10	1.	0.	0.	.01
	HYDROGRAPH AT						
+	SD-2	13.	6.10	2.	1.	1.	.01
	3 COMBINED AT						
+	HYDSD	103.	6.20	20.	9.	9.	.29
	HYDROGRAPH AT						
+	SUB210	184.	6.30	36.	16.	16.	.55
	2 COMBINED AT						
+	HYD210	667.	6.30	119.	51.	51.	1.77
	HYDROGRAPH AT						
+	SUB211	771.	6.30	156.	67.	67.	2.31
	HYDROGRAPH AT						
+	SUB212	58.	6.20	12.	5.	5.	.18
	HYDROGRAPH AT						
+	SD-3	11.	6.10	1.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	68.	6.10	13.	6.	6.	.19
	HYDROGRAPH AT						
+	SUB213	83.	6.30	17.	7.	7.	.25
	HYDROGRAPH AT						
+	SD-4	13.	6.10	2.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	88.	6.30	19.	8.	8.	.26
	HYDROGRAPH AT						
+	SUB214	87.	6.00	9.	4.	4.	.12
	HYDROGRAPH AT						
+	SUB215	152.	6.00	20.	8.	8.	.30
	2 COMBINED AT						
+	HYD215	218.	6.10	38.	17.	17.	.56
	HYDROGRAPH AT						
+	SUB216	283.	6.30	56.	24.	24.	.78
	HYDROGRAPH AT						
+	SUB217	65.	6.40	17.	7.	7.	.28

	HYDROGRAPH AT						
+	SD-5	14.	6.10	2.	1.	1.	.01
	3 COMBINED AT						
+	HYD217	353.	6.30	75.	32.	32.	1.07
	HYDROGRAPH AT						
+	SUB218	382.	6.40	88.	38.	38.	1.22
	HYDROGRAPH AT						
+	SUB219	245.	6.00	28.	12.	12.	.38
	HYDROGRAPH AT						
+	SUB220	53.	6.00	6.	3.	3.	.08
	2 COMBINED AT						
+	HYD220	298.	6.00	34.	14.	14.	.46
	HYDROGRAPH AT						
+	SUB221	276.	6.10	37.	16.	16.	.51
	HYDROGRAPH AT						
+	SUB222	74.	6.00	8.	4.	4.	.13
	HYDROGRAPH AT						
+	SUB223	106.	6.20	18.	8.	8.	.30
	HYDROGRAPH AT						
+	SD-9	13.	6.10	2.	1.	1.	.01
	HYDROGRAPH AT						
+	SD-10	20.	6.10	2.	1.	1.	.02
	3 COMBINED AT						
+	HYD223	383.	6.10	57.	24.	24.	.83
	HYDROGRAPH AT						
+	SUB224	413.	6.20	80.	34.	34.	1.18
	HYDROGRAPH AT						
+	SD-6	13.	6.10	2.	1.	1.	.01
	3 COMBINED AT						
+	HYD224	797.	6.20	169.	73.	73.	2.41
	HYDROGRAPH AT						
+	SUB225	749.	6.30	168.	73.	73.	2.42
	2 COMBINED AT						
+	HYD225	1520.	6.30	324.	141.	141.	4.73
	HYDROGRAPH AT						
+	SUB226	1532.	6.40	352.	152.	152.	5.06
	HYDROGRAPH AT						
+	SD-11	13.	6.10	2.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	1534.	6.40	353.	153.	153.	5.07
	HYDROGRAPH AT						
+	SUB227	151.	6.00	17.	7.	7.	.21
	HYDROGRAPH AT						
+	SUB228	162.	6.10	22.	9.	9.	.28

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      HYDROGRAPH AT
+                SD-12     11.   6.10       1.       1.       1.      .01

      2 COMBINED AT
+                HYDSD    174.   6.10      23.      10.      10.      .29

      HYDROGRAPH AT
+                SUB229   168.   6.10      25.      11.      11.      .32

      2 COMBINED AT
+                HYD229  1611.   6.40     376.     164.     164.     5.39

      HYDROGRAPH AT
+                SUB230  1568.   6.50     379.     165.     165.     5.48

      HYDROGRAPH AT
+                SUB231   143.   6.00      15.       7.       7.      .18

      HYDROGRAPH AT
+                SUB232   176.   6.10      23.      10.      10.      .30

      HYDROGRAPH AT
+                 SD-7      4.   6.10       0.       0.       0.      .00

      HYDROGRAPH AT
+                 SD-8     16.   6.10       2.       1.       1.      .01

      2 COMBINED AT
+                HYDSD    192.   6.10      25.      11.      11.      .32

      HYDROGRAPH AT
+                SUB234    81.   6.00       9.       4.       4.      .10

      HYDROGRAPH AT
+                SUB235   139.   6.10      17.       7.       7.      .22

      2 COMBINED AT
+                HYD235   331.   6.10      42.      18.      18.      .54

      HYDROGRAPH AT
+                SUB236   350.   6.20      52.      22.      22.      .69

      HYDROGRAPH AT
+                SUB237   345.   6.20      53.      23.      23.      .70

      HYDROGRAPH AT
+                SUB240    31.   6.10       4.       2.       2.      .06

      HYDROGRAPH AT
+                SUB238    48.   6.00       5.       2.       2.      .06

      HYDROGRAPH AT
+                SUB239    57.   6.00       7.       3.       3.      .08

      2 COMBINED AT
+                HYD239    87.   6.00      11.       5.       5.      .14

      HYDROGRAPH AT
+                SUB241    93.   6.10      12.       5.       5.      .16

      HYDROGRAPH AT
+                SUB242    82.   6.00       9.       4.       4.      .10

      HYDROGRAPH AT
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+	SUB243	125.	6.00	15.	7.	7.	.19
	2 COMBINED AT						
+	HYD243	214.	6.10	27.	12.	12.	.35
	HYDROGRAPH AT						
+	SUB245	39.	6.00	4.	2.	2.	.05
	HYDROGRAPH AT						
+	SUB246	83.	6.20	13.	6.	6.	.18
	HYDROGRAPH AT						
+	SUB247	89.	6.20	15.	6.	6.	.21
	2 COMBINED AT						
+	HYD247	277.	6.10	42.	18.	18.	.56
	HYDROGRAPH AT						
+	SUB244	289.	6.10	47.	20.	20.	.63
	HYDROGRAPH AT						
+	SUB249	300.	6.20	56.	24.	24.	.77
	2 COMBINED AT						
+	HYD249	646.	6.20	109.	46.	46.	1.46
	HYDROGRAPH AT						
+	SUB250	742.	6.10	132.	57.	57.	1.85
	HYDROGRAPH AT						
+	SD-16	16.	6.10	2.	1.	1.	.01
	HYDROGRAPH AT						
+	SD-15	29.	6.10	4.	1.	1.	.02
	HYDROGRAPH AT						
+	SD-14	42.	6.10	6.	2.	2.	.04
	3 COMBINED AT						
+	HYD250	2114.	6.40	516.	224.	224.	7.36
	HYDROGRAPH AT						
+	SUB251	2068.	6.50	522.	227.	227.	7.50
	HYDROGRAPH AT						
+	SD-13	12.	6.10	1.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	2071.	6.50	523.	228.	228.	7.51
	HYDROGRAPH AT						
+	SUB252	39.	6.50	11.	5.	5.	.19
	HYDROGRAPH AT						
+	SUB253	42.	6.50	12.	5.	5.	.21
	2 COMBINED AT						
+	HYD253	2114.	6.50	535.	233.	233.	7.73
	HYDROGRAPH AT						
+	SUB254	2113.	6.50	555.	241.	241.	8.05
	HYDROGRAPH AT						
+	SUB255	65.	6.00	7.	3.	3.	.08

	HYDROGRAPH AT						
+	SUB256	222.	6.00	25.	11.	11.	.29
	HYDROGRAPH AT						
+	SUB257	229.	6.00	30.	13.	13.	.37
	HYDROGRAPH AT						
+	SUB258	269.	6.20	41.	18.	18.	.56
	HYDROGRAPH AT						
+	SD-17	12.	6.10	1.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	279.	6.20	43.	18.	18.	.57
	HYDROGRAPH AT						
+	SUB259	268.	6.30	49.	21.	21.	.71
	HYDROGRAPH AT						
+	SUB260	3.	6.30	1.	0.	0.	.01
	HYDROGRAPH AT						
+	SUB261	16.	7.10	9.	4.	4.	.17
	HYDROGRAPH AT						
+	SUB262	52.	6.80	24.	11.	11.	.57
	HYDROGRAPH AT						
+	SUB263	47.	6.10	5.	2.	2.	.06
	HYDROGRAPH AT						
+	SD-18	18.	6.10	2.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	65.	6.10	7.	3.	3.	.08
	HYDROGRAPH AT						
+	SUB264	61.	6.20	10.	4.	4.	.17
	HYDROGRAPH AT						
+	SUB265	121.	6.30	24.	10.	10.	.44
	2 COMBINED AT						
+	HYD265	145.	6.40	48.	21.	21.	1.00
	HYDROGRAPH AT						
+	SUB266	174.	6.50	57.	25.	25.	1.17
	HYDROGRAPH AT						
+	SD-24	20.	6.10	2.	1.	1.	.02
	3 COMBINED AT						
+	HYD266	416.	6.30	108.	48.	48.	1.89
	HYDROGRAPH AT						
+	SUB267	410.	6.40	113.	50.	50.	2.05
	HYDROGRAPH AT						
+	SUB285	44.	6.40	12.	5.	5.	.24
	2 COMBINED AT						
+	HYD285	454.	6.40	125.	55.	55.	2.29
	HYDROGRAPH AT						
+	SUB268	453.	6.50	131.	58.	58.	2.41

	2 COMBINED AT						
+	HYD268	2566.	6.50	685.	299.	299.	10.46
	HYDROGRAPH AT						
+	SUB269	2540.	6.60	703.	307.	307.	10.75
	HYDROGRAPH AT						
+	SD-26	15.	6.10	2.	1.	1.	.01
	HYDROGRAPH AT						
+	SD-27	14.	6.10	2.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	29.	6.10	4.	1.	1.	.02
	HYDROGRAPH AT						
+	SD-28	36.	6.10	4.	2.	2.	.03
	2 COMBINED AT						
+	HYDSD	2545.	6.60	706.	308.	308.	10.78
	HYDROGRAPH AT						
+	SUB270	73.	6.30	13.	6.	6.	.19
	HYDROGRAPH AT						
+	SUB271	91.	6.30	19.	8.	8.	.27
	HYDROGRAPH AT						
+	SUB272	92.	6.40	23.	10.	10.	.35
	2 COMBINED AT						
+	HYD272	2625.	6.60	729.	319.	319.	11.13
	HYDROGRAPH AT						
+	SUB274	2613.	6.60	728.	318.	318.	11.13
	HYDROGRAPH AT						
+	SUB273	61.	6.10	8.	4.	4.	.13
	2 COMBINED AT						
+	HYD274	2629.	6.60	734.	322.	322.	11.26
	HYDROGRAPH AT						
+	SUB275	2607.	6.60	734.	322.	322.	11.27
	HYDROGRAPH AT						
+	SUB276	223.	6.00	25.	10.	10.	.28
	HYDROGRAPH AT						
+	SUB277	241.	6.10	32.	13.	13.	.36
	2 COMBINED AT						
+	HYD277	2659.	6.60	757.	335.	335.	11.63
	HYDROGRAPH AT						
+	SUB278	2661.	6.70	775.	343.	343.	11.94
	HYDROGRAPH AT						
+	SUB279	33.	6.50	9.	4.	4.	.14
	HYDROGRAPH AT						
+	SUB286	69.	6.30	10.	4.	4.	.15
	HYDROGRAPH AT						

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+                SUB280     92.   6.40      25.      11.      11.      .38

     HYDROGRAPH AT
+                SUB281      8.   6.50       2.       1.       1.      .05

     HYDROGRAPH AT
+                SUB282     25.   6.70       8.       4.       4.      .14

     HYDROGRAPH AT
+                SUB283     44.   6.70      15.       7.       7.      .27

     4 COMBINED AT
+                HYD288   2803.   6.70     824.     365.     365.    12.72

     HYDROGRAPH AT
+                 SD-19     16.   6.10       2.       1.       1.      .01

     HYDROGRAPH AT
+                 SD-20     30.   6.10       4.       2.       2.      .02

     HYDROGRAPH AT
+                 SD-21     16.   6.10       2.       1.       1.      .01

     HYDROGRAPH AT
+                 SD-22     26.   6.10       3.       1.       1.      .02

     HYDROGRAPH AT
+                 SD-23     35.   6.10       5.       2.       2.      .03

     HYDROGRAPH AT
+                 SD-25     13.   6.10       2.       1.       1.      .01


*** NORMAL END OF HEC-1 ***
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APPENDIX E

1 ****

FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
****

THIS HEC-1 VERSION CONTAINS ALL OPTIONS EXCEPT ECONOMICS, AND THE NUMBER OF PLANS ARE REDUCED TO 3

1 HEC-1 INPUT PAGE 1

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

  1       ID      CITY OF PHOENIX  --  EAST BISCUIT FLAT DRAINAGE STUDY
  2       ID      KINEMATIC WAVE WATERSHED MODEL  --  DRAINAGE & S. D. CONCEPT
  3       ID      100 YR. - 24 HR. STORM    CASE V CONDITION
  4       IT    20                 80
  5       IO     5
          *DIAGRAM

  6       KK  SUB201
  7       KM      RUNOFF FROM SUB-BASIN 201
  8       BA  0.050
  9       LS          98                 88
 10       PB   4.33
 11       IN    30
 12       PC    0.0  0.005  0.009  0.010  0.013  0.019  0.021  0.028  0.032  0.044
 13       PC  0.057  0.100  0.660  0.745  0.776  0.800  0.816  0.830  0.840  0.850
 14       PC  0.930  0.934  0.939  0.944  0.950  0.958  0.961  0.963  0.969  0.971
 15       PC  0.974  0.979  0.981  0.985  0.989  0.991  0.993  0.996  1.000  1.000
 16       UK    150   0.16  0.130     10
 17       UK    150  0.180  0.130     90
 18       RK   1500   0.18   0.05  0.005   TRAP     3     2
 19       RK    800   0.05   0.05         TRAP     5     1    NO

 20       KK  SUB202
 21       KM      RUNOFF FROM SUB-BASIN 202
 22       BA  0.170
 23       LS          98                 86
 24       UK    150   0.08  0.130      3
 25       UK    150   0.08  0.130     97
 26       RK   1500   0.08   0.05   0.02   TRAP     3     2
 27       RK   2000   0.07   0.05         TRAP     8     1    YES

 28       KK  SUB203
 29       KM      RUNOFF FROM SUB-BASIN 203
 30       BA  0.083
 31       LS          98                 84
 32       UK    150   0.10   0.13      2
 33       UK    150   0.10   0.13     98
 34       RK   2000   0.10   0.05   0.01   TRAP     3     2
 35       RK    600   0.08   0.05         TRAP     5     1    NO

 36       KK  SUB204
 37       KM      RUNOFF FROM SUB-BASIN 204
 38       BA  0.117
 39       LS          98                 84
 40       UK    150   0.10   0.13      1
 41       UK    150   0.10   0.13     99
```

```
 42      RK   2900   0.10   0.05   0.01   TRAP     4     2
 43      RK   1500   0.08   0.05          TRAP     8     1    YES

 44      KK  HYD204
 45      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 204
 46      HC      2
1                          HEC-1 INPUT                          PAGE  2

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


 47      KK  SUB205
 48      KM       RUNOFF FROM SUB-BASIN 205
 49      BA   0.067
 50      LS          98                84
 51      UK    150   0.10   0.13     2
 52      UK    150   0.10   0.13    98
 53      RK   1700   0.10   0.05   0.01   TRAP     3     2
 54      RK    800   0.09   0.05          TRAP    18     1    YES

 55      KK  SUB206
 56      KM       RUNOFF FORM SUB-BASIN 206
 57      BA   0.287
 58      LS          98                86
 59      UK    150   0.09   0.13     6
 60      UK    150   0.09   0.13    94
 61      RK   2000   0.09   0.05   0.02   TRAP     3     2
 62      RK   2600   0.08   0.05          TRAP     8     1    NO

 63      KK  HYD206
 64      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 206
 65      HC      2

 66      KK  SUB207
 67      KM       RUNOFF FROM SUB-BASIN 207
 68      BA   0.095
 69      LS          98                85
 70      UK    150   0.05   0.13     1
 71      UK    150   0.05   0.13    99
 72      RK   1300   0.05   0.05   0.01   TRAP     3     2
 73      RK   2400   0.03  0.045          TRAP    25     1    YES

 74      KK  SUB208
 75      KM       RUNOFF FORM SUB-BASIN 208
 76      BA   0.349
 77      LS          98                85
 78      UK    150   0.01   0.13     1
 79      UK    150   0.01   0.13    99
 80      RK    800   0.01   0.02   0.02   TRAP     6   1.5
 81      RK   4600   0.01  0.035          TRAP    50   1.5    YES

 82      KK  SUB209
 83      KM       RUNOFF FROM SUB-BASIN 209
 84      BA   0.274
 85      LS          98                86
 86      UK    150  0.005   0.13     1
 87      UK    150  0.005   0.13    99
 88      RK    700  0.005   0.02   0.02   TRAP    36     1
 89      RK   4200  0.005   0.02          TRAP    36     1    NO
1                          HEC-1 INPUT                          PAGE  3

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


 90      KK   SD-1
```

```
 91      KM      STORM DRAIN SD-1
 92      BA  0.008
 93      LS          98
 94      UK    150  0.005   0.10    100
 95      RK   1000  0.005   0.02  0.004   TRAP     60      1
 96      RK    990  0.005  0.015         CIRC      3          NO

 97      KK   SD-2
 98      KM      STORM DRAIN SD-2
 99      BA  0.011
100      LS          98
101      UK    150  0.005   0.10    100
102      RK   1000  0.005   0.02  0.005   TRAP     60      1
103      RK   1600  0.005  0.015         CIRC      3          NO

104      KK  HYDSD
105      KM      COMBINE HYDROGRAPHS AT SD-1/SD-2
106      HC      3

107      KK  SUB210
108      KM      RUNOFF FROM SUB-BASIN 210
109      BA  0.258
110      LS          86
111      UK    150  0.008   0.13    100
112      RK   2000  0.008   0.02   0.02   TRAP     36      1
113      RK   4700  0.008  0.035         TRAP     10    1.5    YES

114      KK  HYD210
115      KM      COMBINE HYDRAGRAPHS AT OUTLET FROM 210
116      HC      2

117      KK  SUB211
118      KM      RUNOFF FROM SUB-BASIN 211
119      BA  0.537
120      LS          98              87
121      UK    150   0.02   0.13     2
122      UK    150   0.02   0.13    98
123      RK   3500   0.02   0.02   0.02   TRAP     36      1
124      RK   2600  0.008  0.035         TRAP     70    1.5    YES

125      KK  SUB212
126      KM      RUNOFF FROM SUB-BASIN 212
127      BA  0.176
128      LS          98              87
129      UK    150   0.02   0.13     2
130      UK    150   0.02   0.13    98
131      RK   2800   0.02   0.02   0.01   TRAP     36      1
132      RK   2500   0.02   0.02         TRAP     36      1     NO
1                            HEC-1 INPUT                                PAGE  4

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


133      KK   SD-3
134      KM      STORM DRAIN SD-3
135      BA  0.009
136      LS          98
137      UK    150   0.02   0.10    100
138      RK   1000   0.02   0.02  0.005   TRAP     60      1
139      RK   1100   0.02  0.005         CIRC      2          NO

140      KK  HYDSD
141      KM      COMBINE HYDROGRAPHS AT SD-3
142      HC      2
```

```
143     KK  SUB213
144     KM      RUNOFF FROM SUB-BASIN 213
145     BA  0.070
146     LS          98                  84
147     UK    150   0.02   0.16     1
148     UK    150   0.02   0.16    99
149     RK   1900   0.02   0.02   0.01   TRAP    36     1
150     RK   2100  0.008  0.035          TRAP    20   4.0    YES

151     KK   SD-4
152     KM      STORM DRAIN SD-4
153     BA  0.010
154     LS          98
155     UK    150   0.02   0.10   100
156     RK   1000   0.01   0.02  0.005   TRAP    60     1
157     RK   1320   0.01  0.015          CIRC     2          NO

158     KK  HYDSD
159     KM      COMBINE HYDROGRAPHS AT SD-4
160     HC     2

161     KK  SUB214
162     KM      RUNOFF FROM SUB-BASIN 214
163     BA  0.118
164     LS          98                  88
165     UK    150   0.18   0.13     2
166     UK    150   0.18   0.13    98
167     RK   1800   0.18   0.05   0.01   TRAP     3     2
168     RK   1900   0.15  0.035          TRAP    20   4.0     NO

169     KK  SUB215
170     KM      RUNOFF FROM SUB-BASIN 215
171     BA  0.182
172     LS          98                  84
173     UK    150   0.05   0.16     1
174     UK    150   0.05   0.16    99
175     RK   2100   0.05   0.05   0.02   TRAP     3     2
176     RK   3200   0.04  0.015          CIRC    12          YES
```



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


177     KK  HYD215
178     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 215
179     HC     2

180     KK  SUB216
181     KM      RUNOFF FROM SUB-BASIN 216
182     BA  0.217
183     LS          88
184     UK    150  0.005   0.16   100
185     RK    200  0.005   0.02   0.02   TRAP    36     1
186     RK   3100  0.008  0.035          TRAP    50   4.0    YES

187     KK  SUB217
188     KM      RUNOFF FROM SUB-BASIN 217
189     BA  0.276
190     LS          98                  86
191     UK    150  0.015   0.13     4
192     UK    150  0.015   0.13    96
193     RK   4500  0.015   0.02   0.02   TRAP    36     1
194     RK   2800  0.013  0.035          TRAP    40   4.0     NO

195     KK   SD-5
```

```
196     KM      STORM DRAIN SD-5
197     BA  0.011
198     LS          98
199     UK    150   0.01   0.10    100
200     RK   1000   0.01   0.02  0.005   TRAP    60     1
201     RK   1540   0.01  0.015         CIRC     2          NO

202     KK  HYD217
203     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 217
204     HC     3

205     KK  SUB218
206     KM      RUNOFF FROM SUB-BASIN 218
207     BA  0.151
208     LS          88
209     UK    150  0.005   0.16    100
210     RK   2100  0.005   0.02   0.01   TRAP    36     1
211     RK   3000  0.008  0.035         TRAP    40   4.0    YES

212     KK  SUB219
213     KM      RUNOFF FROM SUB-BAISN 219
214     BA  0.382
215     LS          98                87
216     UK    150   0.08   0.13     3
217     UK    150   0.08   0.13    97
218     RK   3000   0.08   0.05   0.02   TRAP     4     2
219     RK   2500   0.05   0.05         TRAP    10   1.5     NO
1                          HEC-1 INPUT                                PAGE  6

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


220     KK  SUB220
221     KM      RUNOFF FROM SUB-BASIN 220
222     BA  0.078
223     LS          98                87
224     UK    150   0.10   0.13     6
225     UK    150   0.10   0.13    94
226     RK   2000   0.10   0.05   0.01   TRAP     3     2
227     RK   2100   0.08   0.05         TRAP     8     1     NO

228     KK  HYD220
229     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 220
230     HC     2

231     KK  SUB221
232     KM      RUNOFF FROM SUB-BASIN 221
233     BA  0.054
234     LS          80
235     UK    150   0.04   0.16    100
236     RK   2200   0.04   0.05  0.005   TRAP     3     2
237     RK   2500   0.03   0.05         TRAP    12   1.5    YES

238     KK  SUB222
239     KM      RUNOFF FROM SUB-BASIN 222
240     BA  0.126
241     LS          98                85
242     UK    150   0.10   0.13     4
243     UK    150   0.10   0.13    96
244     RK   1800   0.10   0.05   0.01   TRAP     3     2
245     RK   1200   0.04  0.035         TRAP    12   1.5     NO

246     KK  SUB223
247     KM      RUNOFF FROM SUB-BASIN 223
248     BA  0.176
```

```
249      LS          84
250      UK    150   0.02   0.16    100
251      RK   2200   0.02   0.02   0.02   TRAP    36     1
252      RK   2800   0.02  0.035         TRAP    15   1.5    YES

253      KK   SD-9
254      KM       STORM DRAIN SD-9
255      BA  0.010
256      LS          98
257      UK    150   0.01   0.10    100
258      RK   1000   0.01   0.02  0.005   TRAP    60     1
259      RK   1320   0.01  0.015         CIRC     2          NO

260      KK  SD-10
261      KM       STORM DRAIN SD-10
262      BA  0.006
263      LS          98
264      UK    150   0.01   0.10    100
265      RK    500   0.01   0.02  0.003   TRAP    60     1
266      RK   1430   0.01  0.015         CIRC     3          YES
```



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


267      KK  HYD223
268      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 223
269      HC      3

270      KK  SUB224
271      KM       RUNOFF FROM SUB-BASIN 224
272      BA  0.353
273      LS          98                86
274      UK    150   0.02   0.16      1
275      UK    150   0.02   0.16     99
276      RK   6600   0.02   0.02   0.02   TRAP    36     1
277      RK   1350  0.005  0.035         TRAP    60   4.0    YES

278      KK   SD-6
279      KM       STORM DRAIN SD-6
280      BA  0.010
281      LS          98
282      UK    150   0.01   0.10    100
283      RK   1000   0.01   0.02  0.005   TRAP    60     1
284      RK   1650   0.01  0.015         CIRC     2          NO

285      KK  HYD224
286      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 224
287      HC      3

288      KK  SUB225
289      KM       RUNOFF FROM SUB-BASIN 225
290      BA  0.007
291      LS          98                86
292      UK    150  0.008   0.16      1
293      UK    150  0.008   0.16     99
294      RK    150  0.008   0.02  0.005   TRAP    36     1
295      RK    800  0.008  0.035         TRAP    40   1.5    YES

296      KK  HYD225
297      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 225
298      HC      2

299      KK  SUB226
300      KM       RUNOFF FROM SUB-BASIN 226
```

```
301     BA  0.337
302     LS          98              86
303     UK   150  0.008   0.16    2
304     UK   150  0.008   0.16    98
305     RK   3000  0.008   0.02   0.02   TRAP    36     1
306     RK   4000  0.008  0.035         TRAP    80    1.5    YES

307     KK  SD-11
308     KM      STORM DRAIN SD-11
309     BA  0.010
310     LS          98
311     UK   150   0.02   0.10    100
312     RK   1000   0.02   0.02  0.005   TRAP    60     1
313     RK   1430   0.02  0.015         CIRC    2          NO
```



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


314     KK  HYDSD
315     KM      COMBINE HYDROGRAPHS AT SD-11
316     HC     2

317     KK  SUB227
318     KM      RUNOFF FROM SUB-BASIN 227
319     BA  0.208
320     LS          98              88
321     UK   150   0.05   0.13     7
322     UK   150   0.05   0.13    93
323     RK   1800   0.05   0.05   0.02   TRAP     3     2
324     RK   1600   0.10   0.05         TRAP     5    1.5    NO

325     KK  SUB228
326     KM      RUNOFF FROM SUB-BASIN 228
327     BA  0.069
328     LS          98              86
329     UK   150  0.015   0.20     2
330     UK   150  0.015   0.20    98
331     RK   1200  0.015   0.02   0.01   TRAP    36     1
332     RK   1800   0.02  0.035         TRAP    15    1.5    YES

333     KK  SD-12
334     KM      STORM DRAIN SD-12
335     BA  0.009
336     LS          98
337     UK   150   0.02   0.10    100
338     RK   1000   0.02   0.02  0.005   TRAP    60     1
339     RK   1100   0.02  0.015         CIRC    2          NO

340     KK  HYDSD
341     KM      COMBINE HYDROGRAPHS AT SD-12
342     HC     2

343     KK  SUB229
344     KM      RUNOFF FROM SUB-BASIN 229
345     BA  0.031
346     LS          86
347     UK   150  0.015   0.20    100
348     RK   1200  0.015   0.02  0.005   TRAP    36     1
349     RK   1350   0.02  0.035         TRAP    15    1.5    YES

350     KK  HYD229
351     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 229
352     HC     2
```

```
353     KK  SUB230
354     KM      RUNOFF FROM SUB-BASIN 230
355     BA  0.084
356     LS          79
357     UK    150  0.008   0.16    100
358     RK   1500  0.008   0.02   0.01   TRAP    36     1
359     RK   1300  0.008  0.035         TRAP    80   1.5    YES
```



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

360     KK  SUB231
361     KM      RUNOFF FROM SUB-BASIN 231
362     BA  0.179
363     LS          98                88
364     UK    150   0.18   0.13     10
365     UK    150   0.18   0.13     90
366     RK   1500   0.18   0.05   0.02   TRAP     3     2
367     RK   1100   0.10   0.04         TRAP     5     1    NO

368     KK  SUB232
369     KM      RUNOFF FROM SUB-BASIN 232
370     BA  0.124
371     LS          85
372     UK    150   0.04   0.13    100
373     RK   1600   0.04   0.05   0.01   TRAP     5     2
374     RK   2500   0.03  0.035         TRAP    25   4.0    YES

375     KK   SD-7
376     KM      STORM DRAIN SD-7
377     BA  0.003
378     LS          98
379     UK    150   0.03   0.10    100
380     RK   1000   0.03   0.02  0.005   TRAP    60     1
381     RK   1320   0.03  0.015         CIRC     2          NO

382     KK   SD-8
383     KM      STORM DRAIN SD-8
384     BA  0.010
385     LS          98
386     UK    150  0.005   0.10    100
387     RK    500  0.005   0.02  0.002   TRAP    60     1
388     RK    700  0.005  0.015         CIRC     3          YES

389     KK  HYDSD
390     KM      COMBINE HYDROGRAPHS AT SD-7/SD-8
391     HC      2

392     KK  SUB234
393     KM      RUNOFF FROM SUB-BASIN 234
394     BA  0.101
395     LS          98                88
396     UK    150   0.18   0.13     10
397     UK    150   0.18   0.13     90
398     RK   1000   0.18   0.05   0.01   TRAP     2     2
399     RK   1500   0.16   0.05         TRAP     5     1    NO

400     KK  SUB235
401     KM      RUNOFF FROM SUB-BASIN 235
402     BA  0.124
403     LS          98                86
404     UK    150   0.04   0.13      3
405     UK    150   0.04   0.13     97
406     RK   2500   0.04   0.05   0.01   TRAP     5     2
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407      RK   2100   0.03  0.035        TRAP    20    1.5    YES
1                          HEC-1 INPUT                          PAGE 10

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


408      KK  HYD235
409      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 235
410      HC     2

411      KK  RES235
412      KM      RESERVOIR AT SUB-BASIN 235
413      RS     1   ELEV  1660.
414      SQ    0.0   15.0   25.0   40.0   60.0   80.0  300.0  700.0
415      SE  1660.  1661.  1663.  1665.  1667.  1668.  1669.  1671.
416      SV    0.0    7.0   20.0   35.0   53.0   75.0  100.0  130.0
417      SE  1660.  1661.  1663.  1665.  1667.  1668.  1669.  1671.

418      KK  SUB236
419      KM      RUNOFF FROM SUB-BASIN 236
420      BA  0.146
421      LS          85
422      UK    150   0.02   0.16    100
423      RK    800   0.02   0.02   0.01   TRAP    36     1
424      RK   3600  0.025  0.035        TRAP    20    1.5    YES

425      KK  SUB237
426      KM      RUNOFF FROM SUB-BASIN 237
427      BA  0.010
428      LS          85
429      UK    150   0.02   0.16    100
430      RK    250   0.02   0.02  0.005   TRAP    36     1
431      RK    800   0.02  0.035        TRAP    40    4.0    YES

432      KK  SUB240
433      KM      RUNOFF FROM SUB-BASIN 240
434      BA  0.056
435      LS          98              86
436      UK    150   0.04   0.13     2
437      UK    150   0.04   0.13    98
438      RK   1500   0.04   0.05  0.005   TRAP     5     1
439      RK    500   0.01  0.035        TRAP    10    4.0    NO

440      KK  SUB238
441      KM      RUNOFF FROM SUB-BASIN 238
442      BA  0.060
443      LS          98              88
444      UK    150   0.18   0.13    10
445      UK    150   0.18   0.13    90
446      RK   1000   0.18   0.05  0.005   TRAP     2     1
447      RK   1000   0.16   0.05        TRAP     6     1    NO

448      KK  SUB239
449      KM      RUNOFF FROM SUB-BASIN 239
450      BA  0.022
451      LS          98              87
452      UK    150   0.03   0.13     2
453      UK    150   0.03   0.13    98
454      RK    700   0.03   0.05  0.005   TRAP     5     1
455      RK   1400   0.05   0.05        TRAP    10     1    YES
1                          HEC-1 INPUT                          PAGE 11

LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
456      KK  HYD239
457      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 239
458      HC      2

459      KK  SUB241
460      KM      RUNOFF FROM SUB-BASIN 241
461      BA  0.020
462      LS          87
463      UK    150   0.03   0.16    100
464      RK    700   0.03   0.02  0.005   TRAP    36     1
465      RK   1000   0.03  0.035         TRAP    20   4.0    YES

466      KK  SUB242
467      KM      RUNOFF FROM SUB-BASIN 242
468      BA  0.105
469      LS          98                 88
470      UK    150   0.12   0.13     10
471      UK    150   0.12   0.13     90
472      RK   1000   0.12   0.05   0.01   TRAP     2     1
473      RK   1600   0.05   0.05         TRAP     6     1    NO

474      KK  SUB243
475      KM      RUNOFF FROM SUB-BASIN 243
476      BA  0.087
477      LS          98                 87
478      UK    150   0.05   0.13      3
479      UK    150   0.05   0.13     97
480      RK   1700   0.05   0.05   0.01   TRAP     3     2
481      RK   2100   0.04  0.045         TRAP    10     1    YES

482      KK  HYD243
483      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 243
484      HC      2

485      KK  SUB245
486      KM      RUNOFF FROM SUB-BASIN 245
487      BA  0.049
488      LS          98                 88
489      UK    150   0.12   0.13     10
490      UK    150   0.12   0.13     90
491      RK    800   0.12   0.05  0.005   TRAP     2     2
492      RK   1200   0.12   0.05         TRAP     5     1    NO

493      KK  SUB246
494      KM      RUNOFF FROM SUB-BASIN 246
495      BA  0.129
496      LS          87
497      UK    150   0.02   0.13    100
498      RK   2200   0.02   0.02   0.01   TRAP    36     1
499      RK   3200   0.03  0.035         TRAP    15   1.5    YES
```



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

500      KK  SUB247
501      KM      RUNOFF FROM SUB-BASIN 247
502      BA  0.031
503      LS          84
504      UK    150   0.02   0.16    100
505      RK   1000   0.02   0.02  0.005   TRAP    36     1
506      RK   1200   0.03  0.015         TRAP    40   4.0    YES

507      KK  HYD247
508      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 247
```

```
509      HC     2

510      KK  RES243
511      KM      RESERVOIR AT SUB-BASIN 243
512      RS     1   ELEV  1645.
513      SQ    0.0   15.0   30.0   50.0   68.0   90.0  300.0  700.0
514      SE  1645.  1646.  1648.  1650.  1652.  1653.  1654.  1656.
515      SV    0.0    7.0   22.0   38.0   70.0   85.0  100.0  135.0
516      SE  1645.  1646.  1648.  1650.  1652.  1653.  1654.  1656.

517      KK  SUB244
518      KM      RUNOFF FROM SUB-BASIN 244
519      BA  0.074
520      LS          86
521      UK    150   0.03   0.16    100
522      RK   1500   0.03   0.05  0.005   TRAP     3     2
523      RK   1600   0.03  0.045         TRAP    12     1    YES

524      KK  SUB249
525      KM      RUNOFF FROM SUB-BASIN 249
526      BA  0.134
527      LS          85
528      UK    150  0.015   0.16    100
529      RK   2600  0.015   0.02   0.01   TRAP    36     1
530      RK   1900   0.02  0.035         TRAP    25   1.5    YES

531      KK  HYD249
532      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 249
533      HC     2

534      KK  SUB250
535      KM      RUNOFF FROM SUB-BASIN 250
536      BA  0.381
537      LS          85
538      UK    150   0.01   0.16    100
539      RK   4700   0.01   0.02   0.02   TRAP    36     1
540      RK   1800   0.01  0.035         TRAP    40   1.5    YES

541      KK  SD-16
542      KM      STORM DRAIN SD-16
543      BA  0.013
544      LS          98
545      UK    150   0.02   0.10    100
546      RK   1000   0.02   0.02  0.005   TRAP    60     1
```



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

547      RK   2090   0.02  0.015         CIRC     2          NO

548      KK  SD-15
549      KM      STORM DRAIN SD-15
550      BA  0.010
551      LS          98
552      UK    150   0.01   0.10    100
553      RK    500   0.01   0.02  0.005   TRAP    60     1
554      RK   2310   0.01  0.015         CIRC     3         YES

555      KK  SD-14
556      KM      STORM DRIAN SD-14
557      BA  0.013
558      LS          98
559      UK    150  0.005   0.10    100
560      RK    500  0.005   0.02  0.006   TRAP    60     1
561      RK   2860  0.005  0.015         CIRC     3         YES
```

```
562     KK  HYD250
563     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 250
564     HC      3

565     KK  SUB251
566     KM      RUNOFF FROM SUB-BASIN 251
567     BA  0.144
568     LS          83
569     UK    150  0.007   0.20    100
570     RK   2500  0.007   0.02   0.01   TRAP    36     1
571     RK   2100   0.01  0.035         TRAP   100   1.5   YES

572     KK  SD-13
573     KM      STORM DRAIN SD-13
574     BA  0.010
575     LS          98
576     UK    150  0.005   0.10    100
577     RK   1000  0.005   0.02  0.005   TRAP    60     1
578     RK   1320  0.005  0.015         CIRC     3          NO

579     KK  HYDSD
580     KM      COMBINE HYDROGRAPHS AT SD-13
581     HC      2

582     KK  SUB252
583     KM      RUNOFF FROM SUB-BASIN 252
584     BA  0.195
585     LS          85
586     UK    150  0.007   0.13    100
587     RK   3100  0.007   0.02   0.02   TRAP    36     1
588     RK   2000   0.01   0.02         TRAP    36     1    NO
```



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

589     KK  SUB253
590     KM      RUNOFF FROM SUB-BASIN 253
591     BA  0.019
592     LS          86
593     UK    150  0.007   0.20    100
594     RK    600  0.007   0.02  0.005   TRAP    36     1
595     RK   1200   0.01  0.015         CIRC    15          YES

596     KK  HYD253
597     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 253
598     HC      2

599     KK  SUB254
600     KM      RUNOFF FROM SUB-BASIN 254
601     BA  0.325
602     LS          98                 84
603     UK    150  0.007   0.20      1
604     UK    150  0.007   0.20     99
605     RK   3500  0.007   0.02   0.02   TRAP    36     1
606     RK   2300   0.01  0.035         TRAP   100   1.5   YES

607     KK  SUB255
608     KM      RUNOFF FROM SUB-BASIN 255
609     BA  0.080
610     LS          98                 88
611     UK    150   0.18   0.13     12
612     UK    150   0.18   0.13     88
613     RK   1300   0.18   0.05   0.01   TRAP     2     2
```

```
614      RK   700   0.18   0.05         TRAP     4     1    NO

615      KK  SUB256
616      KM       RUNOFF FROM SUB-BASIN 256
617      BA  0.206
618      LS          98                88
619      UK    150   0.18   0.13    10
620      UK    150   0.18   0.13    90
621      RK   2400   0.18   0.05   0.02   TRAP     3     2
622      RK   2000   0.15   0.05         TRAP    10     1    YES

623      KK  SUB257
624      KM       RUNOFF FROM SUB-BASIN 257
625      BA  0.088
626      LS          85
627      UK    150   0.04   0.13    100
628      RK   1600   0.04  0.035   0.01   TRAP     5     2
629      RK   1700   0.05  0.035         TRAP     8     2    YES

630      KK  SUB258
631      KM       RUNOFF FROM SUB-BASIN 258
632      BA  0.187
633      LS          84
634      UK    150   0.02   0.13    100
635      RK   1800   0.02   0.02   0.02   TRAP    36     1
636      RK   3500  0.025  0.035         TRAP    20   1.5    YES
1                          HEC-1 INPUT                                PAGE 15

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


637      KK  SD-17
638      KM       STORM DRAIN SD-17
639      BA  0.010
640      LS          98
641      UK    150  0.005   0.10    100
642      RK   1000  0.005   0.02  0.005   TRAP    60     1
643      RK   1430  0.005  0.015         CIRC     3          NO

644      KK  HYDSD
645      KM       COMBINE HYDROGRAPHS AT SD-17
646      HC      2

647      KK  SUB259
648      KM       RUNOFF FROM SUB-BASIN 259
649      BA  0.137
650      LS          80
651      UK    150  0.007   0.16    100
652      RK   2500  0.007   0.02   0.01   TRAP    36     1
653      RK   3500   0.01  0.035         TRAP    30   1.5    YES

654      KK  SUB260
655      KM       RUNOFF FROM SUB-BASIN 260
656      BA  0.014
657      LS          83
658      UK    150  0.007   0.13    100
659      RK    800  0.007   0.02  0.005   TRAP    36     1
660      RK    400  0.025  0.035         TRAP     5   1.5    NO

661      KK  SUB261
662      KM       RUNOFF FROM SUB-BASIN 261
663      BA  0.152
664      LS          85
665      UK    150  0.007   0.13    100
666      RK   5800  0.007   0.02   0.01   TRAP    36     1
```

```
667      RK    800  0.005  0.035         TRAP     10    4.0    YES

668      KK  SUB262
669      KM       RUNOFF FROM SUB-BASIN 262
670      BA  0.401
671      LS          81
672      UK    150   0.02   0.13    100
673      RK   6000   0.02   0.02   0.02   TRAP     36     1
674      RK   1100  0.005  0.035         TRAP     30    4.0    YES

675      KK  SUB263
676      KM       RUNOFF FROM SUB-BASIN 263
677      BA  0.063
678      LS          88
679      UK    150   0.15   0.13    100
680      RK   1500   0.15   0.05   0.01   TRAP      1      2
681      RK    300   0.11   0.05         TRAP      5      1     NO
1                              HEC-1 INPUT                                PAGE 16

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


682      KK  SD-18
683      KM       STORM DRAIN SD-18
684      BA  0.014
685      LS          98
686      UK    150   0.01   0.10    100
687      RK   1000   0.01   0.02  0.007   TRAP     60      1
688      RK   2310   0.01  0.015         CIRC      3            NO

689      KK  HYDSD
690      KM       COMBINE HYDROGRAPHS AT SD-18
691      HC      2

692      KK  SUB264
693      KM       RUNOFF FROM SUB-BASIN 264
694      BA  0.090
695      LS          76
696      UK    150   0.02   0.13    100
697      RK   1500   0.02   0.02   0.01   TRAP     36      1
698      RK   3100  0.025  0.035         TRAP     15    1.5    YES

699      KK  SUB265
700      KM       RUNOFF FROM SUB-BASIN 265
701      BA  0.270
702      LS          83
703      UK    150   0.02   0.13    100
704      RK   3000   0.02   0.02   0.02   TRAP     36      1
705      RK   3000  0.025  0.035         TRAP     15    1.5    YES

706      KK  HYD265
707      KM       COMBINE HYDROGRAPHS AT OUTLET FROM 265
708      HC      2

709      KK  RES265
710      KM       RESERVOIR AT SUB-BASIN 265
711      RS      1   ELEV  134.
712      SQ    0.0   30.0   50.0  100.0  160.0  200.0  800.0 2000.0
713      SE  1634.  1635.  1637.  1639.  1641.  1642.  1643.  1645.
714      SV    0.0    6.0   14.0   31.0   50.0   65.0   70.0   90.0
715      SE  1634.  1635.  1637.  1639.  1641.  1642.  1643.  1645.

716      KK  SUB266
717      KM       RUNOFF FROM SUB-BASIN 266
718      BA  0.164
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```
719     LS          84
720     UK    150   0.02   0.16    100
721     RK   2000   0.02   0.02   0.01   TRAP    36     1
722     RK   2500   0.01   0.035         TRAP    50    4.0    YES

723     KK  SD-24
724     KM      STORM DRAIN SD-24
725     BA  0.016
726     LS          98
727     UK    150   0.01   0.10    100
728     RK   1000   0.01   0.02  0.008   TRAP    60     1
```



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

729     RK   2750   0.01   0.015         CIRC    3           NO

730     KK  HYD266
731     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 266
732     HC     3

733     KK  SUB267
734     KM      RUNOFF FROM SUB-BASIN 267
735     BA  0.158
736     LS          78
737     UK    150   0.01   0.13    100
738     RK   4000  0.007   0.02   0.02   TRAP    36     1
739     RK   2000   0.01   0.035         TRAP    40    1.5    YES

740     KK  SUB285
741     KM      RUNOFF FROM SUB-BASIN 285
742     BA  0.236
743     LS          84
744     UK    150   0.01   0.13    100
745     RK   3000   0.01   0.02   0.02   TRAP    36     1
746     RK   2500  0.008  0.015         CIRC    8           NO

747     KK  HYD285
748     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 285
749     HC     2

750     KK  SUB268
751     KM      RUNOFF FROM SUB-BASIN 268
752     BA  0.122
753     LS          81
754     UK    150  0.007   0.13    100
755     RK   2300  0.007   0.02   0.01   TRAP    36     1
756     RK   2500   0.01   0.035         TRAP    40    1.5    YES

757     KK  HYD268
758     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 268
759     HC     2

760     KK  SUB269
761     KM      RUNOFF FROM SUB-BASIN 269
762     BA  0.291
763     LS          98                 78
764     UK    150  0.007   0.20     5
765     UK    150  0.007   0.20    95
766     RK   2400  0.007   0.02   0.02   TRAP    36     1
767     RK   3000   0.01   0.035         TRAP   120    1.5    YES

768     KK  SD-26
769     KM      STORM DRAIN SD-26
770     BA  0.012
```

```
771      LS          98
772      UK   150   0.01   0.10   100
773      RK   1000   0.01   0.02  0.006   TRAP    60     1
774      RK   1760   0.01  0.015         CIRC     2          NO
```



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

775      KK  SD-27
776      KM      STORM DRAIN SD-27
777      BA  0.011
778      LS          98
779      UK   150   0.02   0.10   100
780      RK   1000   0.02   0.02  0.005   TRAP    60     1
781      RK   1650   0.02  0.015         CIRC     2          NO

782      KK  HYDSD
783      KM      COMBINE HYDROGRAPHS AT SD-26/SD-27
784      HC     2

785      KK  SD-28
786      KM      STORM DRAIN SD-28
787      BA  0.006
788      LS          98
789      UK   150  0.005   0.10   100
790      RK   500  0.005   0.02  0.003   TRAP    60     1
791      RK   1320  0.005  0.015         CIRC     3          YES

792      KK  HYDSD
793      KM      COMBINE HYDROGRAPHS AT SD-28
794      HC     2

795      KK  SUB270
796      KM      RUNOFF FROM SUB-BASIN 270
797      BA  0.190
798      LS          88
799      UK   150  0.007   0.13   100
800      RK   2100  0.007   0.02   0.02   TRAP    36     1
801      RK   2000   0.01   0.02         TRAP    36     1     NO

802      KK  SUB271
803      KM      RUNOFF FROM SUB-BASIN 271
804      BA  0.079
805      LS          88
806      UK   150  0.007   0.13   100
807      RK   2000  0.007   0.02   0.01   TRAP    36     1
808      RK   1100   0.01  0.035         TRAP    20    4.0    YES

809      KK  SUB272
810      KM      RUNOFF FROM SUB-BASIN 272
811      BA  0.084
812      LS          84
813      UK   150  0.007   0.13   100
814      RK   4700  0.007   0.02   0.01   TRAP    36     1
815      RK    900  0.005  0.035         TRAP    30    4.0    YES

816      KK  HYD272
817      KM      COMBINE HYDROGRAPHS AT OUTLET FROM 272
818      HC     2
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LINE     ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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819     KK  SUB274
820     KM      RUNOFF FROM SUB-BASIN 274
821     BA  0.002
822     LS          98              79
823     UK    150  0.007   0.13     1
824     UK    150  0.007   0.13    99
825     RK    150  0.007   0.02  0.002   TRAP    36     1
826     RK    300   0.01  0.035         TRAP   120    1.5   YES

827     KK  SUB273
828     KM      RUNOFF FROM SUB-BASIN 273
829     BA  0.126
830     LS          98              86
831     UK    150   0.02   0.13     4
832     UK    150   0.02   0.13    96
833     RK    800   0.02   0.02   0.01   TRAP    36     1
834     RK   3800   0.04  0.035         TRAP    15    1.5    NO

835     KK  HYD274
836     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 274
837     HC     2

838     KK  SUB275
839     KM      RUNOFF FROM SUB-BASIN 275
840     BA  0.010
841     LS          81
842     UK    150  0.007   0.13   100
843     RK    900  0.007   0.02  0.005   TRAP    36     1
844     RK    500   0.01  0.035         TRAP   120    1.5   YES

845     KK  SUB276
846     KM      RUNOFF FROM SUB-BASIN 276
847     BA  0.279
848     LS          98              88
849     UK    150   0.18   0.13    12
850     UK    150   0.18   0.13    88
851     RK   1300   0.18   0.05   0.02   TRAP     3     2
852     RK   3000   0.14   0.05         TRAP     5     1    NO

853     KK  SUB277
854     KM      RUNOFF FROM SUB-BASIN 277
855     BA  0.084
856     LS          98              85
857     UK    150   0.05   0.13     1
858     UK    150   0.05   0.13    99
859     RK   1500   0.05   0.05   0.01   TRAP     2     2
860     RK   4000   0.04   0.05         TRAP    65    1.5   YES

861     KK  HYD277
862     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 277
863     HC     2
```



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

864     KK  SUB278
865     KM      RUNOFF FROM SUB-BASIN 278
866     BA  0.304
867     LS          85
868     UK    150  0.007   0.13   100
869     RK   3600  0.007   0.02   0.02   TRAP    36     1
870     RK   2400   0.01  0.035         TRAP   120    1.5   YES

871     KK  SUB279
```

```
872     KM      RUNOFF FROM SUB-BASIN 279
873     BA  0.141
874     LS          87
875     UK    150  0.007   0.13    100
876     RK   2800  0.007   0.02   0.01   TRAP    36     1
877     RK   2500  0.007   0.02          TRAP    10   4.0    NO

878     KK  SUB286
879     KM      RUNOFF FROM SUB-BASIN 286
880     BA  0.146
881     LS          88
882     UK    150   0.01   0.13    100
883     RK   1500   0.01   0.02   0.01   TRAP    36     1
884     RK   4000   0.01   0.02          TRAP    36     1    NO

885     KK  SUB280
886     KM      RUNOFF FROM SUB=BASIN 280
887     BA  0.229
888     LS          87
889     UK    150  0.007   0.16    100
890     RK   5000  0.007   0.02   0.02   TRAP    36     1
891     RK   1300  0.005  0.035          TRAP    20   4.0   YES

892     KK  SUB281
893     KM      RUNOFF FROM SUB-BASIN 281
894     BA  0.045
895     LS          85
896     UK    150   0.01   0.13    100
897     RK   1800   0.01   0.02   0.01   TRAP    36     1
898     RK   3500   0.01   0.02          TRAP    36     1    NO

899     KK  SUB282
900     KM      RUNOFF FROM SUB-BASIN 282
901     BA  0.098
902     LS          86
903     UK    150  0.007   0.13    100
904     RK   3600  0.007   0.02   0.01   TRAP    36     1
905     RK   1000  0.005  0.035          TRAP    10   4.0   YES

906     KK  SUB283
907     KM      RUNOFF FROM SUB-BASIN 283
908     BA  0.123
909     LS          86
910     UK    150  0.007   0.13    100
911     RK   4000  0.007   0.02   0.01   TRAP    36     1
```



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

912     RK    500  0.005  0.035          TRAP    20   4.0   YES

913     KK  HYD288
914     KM      COMBINE HYDROGRAPHS AT OUTLET FROM 288
915     HC      4

916     KK  SD-19
917     KM      STORM DRAIN SD-19
918     BA  0.013
919     LS          98
920     UK    150   0.02   0.10    100
921     RK   1000   0.02   0.02  0.006   TRAP    60     1
922     RK   1980   0.02  0.015          CIRC     2          NO

923     KK  SD-20
924     KM      STORM DRAIN SD-20
```

```
925     BA  0.011
926     LS        98
927     UK   150   0.01   0.10   100
928     RK   500   0.01   0.02  0.005  TRAP   60    1
929     RK  1540   0.01  0.015        CIRC   3       YES

930     KK  SD-21
931     KM     STORM DRAIN S-21
932     BA  0.013
933     LS        98
934     UK   150   0.01   0.10   100
935     RK  1000   0.01   0.02  0.006  TRAP   60    1
936     RK  1980   0.01  0.015        CIRC   3       NO

937     KK  SD-22
938     KM     STORM DRAIN SD-22
939     BA  0.008
940     LS        98
941     UK   150   0.01   0.10   100
942     RK   500   0.01   0.02  0.004  TRAP   60    1
943     RK  2020   0.01  0.015        CIRC   3       YES

944     KK  SD-23
945     KM     STORM DRAIN SD-23
946     BA  0.010
947     LS        98
948     UK   150  0.005   0.10   100
949     RK   500  0.005   0.02  0.005  TRAP   60    1
950     RK  2200  0.005  0.015        CIRC   4       YES

951     KK  SD-25
952     KM     STORM DRAIN SD-25
953     BA  0.011
954     LS        98
955     UK   150  0.005   0.10   100
956     RK  1000  0.005   0.02  0.005  TRAP   60    1
957     RK  1540  0.005  0.015        CIRC   3       NO
958     ZZ
```

1

SCHEMATIC DIAGRAM OF STREAM NETWORK

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

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

  6    SUB201
         V
         V
 20    SUB202 ***
         .
         .
 28       .    SUB203
         .       V
         .       V
 36       .    SUB204 ***
         .       .
         .       .
 44    HYD204............
         V
         V
 47    SUB205 ***
         .
         .
 55       .    SUB206
         .       .
```

```
      .       .
63  HYD206............
      V
      V
66  SUB207 ***
      V
      V
74  SUB208 ***
      .
      .
82      .   SUB209
      .       .
      .       .
90      .       .     SD-1
      .       .       .
      .       .       .
97      .       .       .     SD-2
      .       .       .       .
      .       .       .       .
104     .   HYDSD ........................
      .       V
      .       V
107     .   SUB210 ***
      .       .
      .       .
114 HYD210............
      V
      V
117 SUB211 ***
 .    .
      .
125     .   SUB212
      .       .
      .       .
133     .       .     SD-3
      .       .       .
      .       .       .
140     .   HYDSD .............
      .       V
      .       V
143     .   SUB213 ***
      .       .
      .       .
151     .       .     SD-4
      .       .       .
      .       .       .
158     .   HYDSD .............
      .       .
      .       .
161     .       .   SUB214
      .       .       V
      .       .       V
169     .       .   SUB215 ***
      .       .       .
      .       .       .
177     .   HYD215............
      .       V
      .       V
180     .   SUB216 ***
      .       .
      .       .
187     .       .   SUB217
      .       .       .
      .       .       .
195     .       .       .     SD-5
```

```
        .       .       .       .
        .       .       .       .
202     .   HYD217.......................
        .     V
        .     V
205     .   SUB218 ***
        .     .
        .     .
212     .     .   SUB219
        .     .     .
        .     .     .
220     .     .     .   SUB220
        .     .     .     .
        .     .     .     .
228     .     .   HYD220............
        .     .     V
        .     .     V
231     .     .   SUB221 ***
        .     .     .
        .     .     .
238     .     .     .   SUB222
        .     .     .     V
        .     .     .     V
246     .     .     .   SUB223 ***
        .     .     .     .
        .     .     .     .
253     .     .     .     .   SD-9
        .     .     .     .   V
        .     .     .     .   V
260     .     .     .     .   SD-10 ***
        .     .     .     .   .
        .     .     .     .   .
267     .     .   HYD223........................
        .     .     V
        .     .     V
270     .     .   SUB224 ***
        .     .     .
        .     .     .
278     .     .     .   SD-6
        .     .     .   .
        .     .     .   .
285     .   HYD224.......................
        .     V
        .     V
288     .   SUB225 ***
        .     .
        .     .
296   HYD225............
        V
        V
299   SUB226 ***
        .
        .
307     .   SD-11
        .     .
        .     .
314   HYDSD ............
        .
        .
317     .   SUB227
        .     V
        .     V
325     .   SUB228 ***
        .     .
        .     .
```

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333      .       .     SD-12
       .       .       .
       .       .       .
340      .    HYDSD ............
       .       V
       .       V
343      .    SUB229 ***
       .       .
       .       .
350    HYD229............
        V
        V
353    SUB230 ***
       .
       .
360      .    SUB231
       .       V
       .       V
368      .    SUB232 ***
       .       .
       .       .
375      .       .     SD-7
       .       .       V
       .       .       V
382      .       .     SD-8 ***
       .       .       .
       .       .       .
389      .    HYDSD ............
       .       .
       .       .
392      .       .    SUB234
       .       .       V
       .       .       V
400      .       .    SUB235 ***
       .       .       .
       .       .       .
408      .    HYD235............
       .       V
       .       V
411      .    RES235
       .       V
       .       V
418      .    SUB236 ***
       .       V
       .       V
425      .    SUB237 ***
       .       .
       .       .
432      .       .    SUB240
       .       .       .
       .       .       .
440      .       .       .    SUB238
       .       .       .       V
       .       .       .       V
448      .       .       .    SUB239 ***
       .       .       .       .
       .       .       .       .
456      .       .    HYD239............
       .       .       V
       .       .       V
459      .       .    SUB241 ***
       .       .       .
       .       .       .
466      .       .       .    SUB242
       .       .       .       V
```

```
        .       .       .       V
474     .       .       .   SUB243 ***
        .       .       .       .
        .       .       .       .
482     .       .   HYD243............
        .       .       .
        .       .       .
485     .       .       .   SUB245
        .       .       .       V
        .       .       .       V
493     .       .       .   SUB246 ***
        .       .       .       V
        .       .       .       V
500     .       .       .   SUB247 ***
        .       .       .       .
        .       .       .       .
507     .       .   HYD247............
        .       .       V
        .       .       V
510     .       .   RES243
        .       .       V
        .       .       V
517     .       .   SUB244 ***
        .       .       V
        .       .       V
524     .       .   SUB249 ***
        .       .       .
        .       .       .
531     .   HYD249............
        .       V
        .       V
534     .   SUB250 ***
        .       .
        .       .
541     .       .   SD-16
        .       .       V
        .       .       V
548     .       .   SD-15 ***
        .       .       V
        .       .       V
555     .       .   SD-14 ***
        .       .       .
        .       .       .
562   HYD250........................
        V
        V
565   SUB251 ***
        .
        .
572     .   SD-13
        .       .
        .       .
579   HYDSD ............
        .
        .
582     .   SUB252
        .       V
        .       V
589     .   SUB253 ***
        .       .
        .       .
596   HYD253............
        V
        V
599   SUB254 ***
```

```
        .
        .
607     .   SUB255
        .    V
        .    V
615     .   SUB256 ***
        .    V
        .    V
623     .   SUB257 ***
        .    V
        .    V
630     .   SUB258 ***
        .    .
        .    .
637     .     .   SD-17
        .    .     .
        .    .     .
644     .   HYDSD ............
        .    V
        .    V
647     .   SUB259 ***
        .    .
        .    .
654     .     .   SUB260
        .    .     V
        .    .     V
661     .     .   SUB261 ***
        .    .     V
        .    .     V
668     .     .   SUB262 ***
        .    .     .
        .    .     .
675     .     .     .   SUB263
        .    .     .     .
        .    .     .     .
682     .     .     .     .   SD-18
        .    .     .     .     .
        .    .     .     .     .
689     .     .     .   HYDSD ............
        .    .     .     V
        .    .     .     V
692     .     .     .   SUB264 ***
        .    .     .     V
        .    .     .     V
699     .     .     .   SUB265 ***
        .    .     .     .
        .    .     .     .
706     .     .   HYD265............
        .    .     V
        .    .     V
709     .     .   RES265
        .    .     V
        .    .     V
716     .     .   SUB266 ***
        .    .     .
        .    .     .
723     .     .     .   SD-24
        .    .     .     .
        .    .     .     .
730     .   HYD266........................
        .    V
        .    V
733     .   SUB267 ***
        .    .
        .    .
```

```
740      .        .    SUB285
       .        .        .
       .        .        .
747      .    HYD285............
       .        V
       .        V
750      .    SUB268 ***
       .        .
       .        .
757    HYD268............
         V
         V
760    SUB269 ***
         .
         .
768      .     SD-26
       .        .
       .        .
775      .        .     SD-27
       .        .        .
       .        .        .
782      .    HYDSD ............
       .        V
       .        V
785      .     SD-28 ***
       .        .
       .        .
792    HYDSD ............
         .
         .
795      .    SUB270
       .        V
       .        V
802      .    SUB271 ***
       .        V
       .        V
809      .    SUB272 ***
       .        .
       .        .
816    HYD272............
         V
         V
819    SUB274 ***
         .
         .
827      .    SUB273
       .        .
       .        .
835    HYD274............
         V
         V
838    SUB275 ***
         .
         .
845      .    SUB276
       .        V
       .        V
853      .    SUB277 ***
       .        .
       .        .
861    HYD277............
         V
         V
864    SUB278 ***
         .
```

COMPUTATION INTERVAL .33 HOURS
TOTAL TIME BASE 26.33 HOURS

ENGLISH UNITS

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 200. TO 800.
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.)

1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB201	119.	6.00	16.	4.	4.	.05		
+	HYDROGRAPH AT	SUB202	495.	6.00	64.	18.	16.	.22		
+	HYDROGRAPH AT	SUB203	177.	6.00	22.	6.	6.	.08		
+	HYDROGRAPH AT	SUB204	412.	6.00	53.	15.	13.	.20		
+	2 COMBINED AT	HYD204	907.	6.00	117.	32.	29.	.42		
+	HYDROGRAPH AT	SUB205	1028.	6.00	136.	37.	34.	.49		
+	HYDROGRAPH AT	SUB206	644.	6.00	83.	23.	21.	.29		
+	2 COMBINED AT	HYD206	1672.	6.00	219.	60.	55.	.77		
+	HYDROGRAPH AT	SUB207	1741.	6.00	247.	68.	62.	.87		
+	HYDROGRAPH AT	SUB208	1905.	6.00	339.	94.	85.	1.22		
+	HYDROGRAPH AT	SUB209	467.	6.00	76.	21.	19.	.27		
+	HYDROGRAPH AT	SD-1	21.	6.33	3.	1.	1.	.01		
+	HYDROGRAPH AT	SD-2	29.	6.33	4.	1.	1.	.01		
+	3 COMBINED AT	HYDSD	486.	6.00	84.	23.	21.	.29		
+	HYDROGRAPH AT	SUB210	797.	6.33	156.	43.	39.	.55		
+	2 COMBINED AT	HYD210	2303.	6.00	494.	137.	125.	1.77		

```
        .
871     .   SUB279
        .     .
        .     .
878     .     .   SUB286
        .     .     V
        .     .     V
885     .     .   SUB280 ***
        .     .     .
        .     .     .
892     .     .     .   SUB281
        .     .     .     V
        .     .     .     V
899     .     .     .   SUB282 ***
        .     .     .     V
        .     .     .     V
906     .     .     .   SUB283 ***
        .     .     .     .
        .     .     .     .
913   HYD288.................................
        .
        .
916     .   SD-19
        .     V
        .     V
923     .   SD-20 ***
        .     .
        .     .
930     .     .   SD-21
        .     .     V
        .     .     V
937     .     .   SD-22 ***
        .     .     V
        .     .     V
944     .     .   SD-23 ***
        .     .     .
        .     .     .
951     .     .     .   SD-25
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
1                                        ****
                 FLOOD HYDROGRAPH PACKAGE HEC-1 (IBM XT 512K VERSION) -FEB 1,1985
        U.S. ARMY CORPS OF ENGINEERS, THE HYDROLOGIC ENGINEERING CENTER, 609 SECOND STREET, DAVIS, CA. 95616
                                         ****


                 CITY OF PHOENIX  --  EAST BISCUIT FLAT DRAINAGE STUDY
                 KINEMATIC WAVE WATERSHED MODEL  --  DRAINAGE & S. D. CONCEPT
                 100 YR. - 24 HR. STORM    CASE V CONDITION

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

 IT        HYDROGRAPH TIME DATA
             NMIN        20  MINUTES IN COMPUTATION INTERVAL
            IDATE     1   0  STARTING DATE
            ITIME      0000  STARTING TIME
               NQ       80  NUMBER OF HYDROGRAPH ORDINATES
           NDDATE     2   0  ENDING DATE
           NDTIME      0220  ENDING TIME
```

COMPUTATION INTERVAL .33 HOURS
TOTAL TIME BASE 26.33 HOURS

ENGLISH UNITS

*** WARNING *** MODIFIED PULS ROUTING MAY BE NUMERICALLY UNSTABLE FOR OUTFLOWS BETWEEN 200. TO 800.
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1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUB201	119.	6.00	16.	4.	4.	.05		
+	HYDROGRAPH AT	SUB202	495.	6.00	64.	18.	16.	.22		
+	HYDROGRAPH AT	SUB203	177.	6.00	22.	6.	6.	.08		
+	HYDROGRAPH AT	SUB204	412.	6.00	53.	15.	13.	.20		
+	2 COMBINED AT	HYD204	907.	6.00	117.	32.	29.	.42		
+	HYDROGRAPH AT	SUB205	1028.	6.00	136.	37.	34.	.49		
+	HYDROGRAPH AT	SUB206	644.	6.00	83.	23.	21.	.29		
+	2 COMBINED AT	HYD206	1672.	6.00	219.	60.	55.	.77		
+	HYDROGRAPH AT	SUB207	1741.	6.00	247.	68.	62.	.87		
+	HYDROGRAPH AT	SUB208	1905.	6.00	339.	94.	85.	1.22		
+	HYDROGRAPH AT	SUB209	467.	6.00	76.	21.	19.	.27		
+	HYDROGRAPH AT	SD-1	21.	6.33	3.	1.	1.	.01		
+	HYDROGRAPH AT	SD-2	29.	6.33	4.	1.	1.	.01		
+	3 COMBINED AT	HYDSD	486.	6.00	84.	23.	21.	.29		
+	HYDROGRAPH AT	SUB210	797.	6.33	156.	43.	39.	.55		
+	2 COMBINED AT	HYD210	2303.	6.00	494.	137.	125.	1.77		

	HYDROGRAPH AT						
+	SUB211	2846.	6.00	645.	180.	164.	2.31
	HYDROGRAPH AT						
+	SUB212	318.	6.00	51.	14.	13.	.18
	HYDROGRAPH AT						
+	SD-3	25.	6.33	4.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	329.	6.00	55.	15.	14.	.19
	HYDROGRAPH AT						
+	SUB213	362.	6.00	72.	20.	18.	.25
	HYDROGRAPH AT						
+	SD-4	28.	6.33	4.	1.	1.	.01
	2 COMBINED AT						
+	HYDSD	374.	6.00	76.	21.	19.	.26
	HYDROGRAPH AT						
+	SUB214	288.	6.00	36.	10.	9.	.12
	HYDROGRAPH AT						
+	SUB215	604.	6.00	83.	23.	21.	.30
	2 COMBINED AT						
+	HYD215	978.	6.00	160.	44.	40.	.56
	HYDROGRAPH AT						
+	SUB216	1066.	6.33	228.	63.	57.	.78
	HYDROGRAPH AT						
+	SUB217	418.	6.00	78.	22.	20.	.28
	HYDROGRAPH AT						
+	SD-5	30.	6.33	4.	1.	1.	.01
	3 COMBINED AT						
+	HYD217	1407.	6.33	309.	85.	78.	1.07
	HYDROGRAPH AT						
+	SUB218	1622.	6.33	353.	98.	89.	1.22
	HYDROGRAPH AT						
+	SUB219	883.	6.00	113.	31.	28.	.38
	HYDROGRAPH AT						
+	SUB220	180.	6.00	23.	6.	6.	.08
	2 COMBINED AT						
+	HYD220	1063.	6.00	136.	37.	34.	.46
	HYDROGRAPH AT						
+	SUB221	951.	6.00	148.	40.	37.	.51
	HYDROGRAPH AT						
+	SUB222	276.	6.00	35.	10.	9.	.13
	HYDROGRAPH AT						
+	SUB223	408.	6.33	82.	22.	20.	.30
	HYDROGRAPH AT						
+	SD-9	27.	6.33	4.	1.	1.	.01

```
      HYDROGRAPH AT
+                SD-10     42.   6.33       6.       2.       2.      .02

      3 COMBINED AT
+                HYD223    1286.   6.00     235.      65.      59.      .83

      HYDROGRAPH AT
+                SUB224    1605.   6.00     330.      91.      83.     1.18

      HYDROGRAPH AT
+                 SD-6     27.   6.33       4.       1.       1.      .01

      3 COMBINED AT
+                HYD224    3019.   6.33     685.     191.     174.     2.41

      HYDROGRAPH AT
+                SUB225    3007.   6.33     686.     191.     174.     2.42

      2 COMBINED AT
+                HYD225    5622.   6.33    1329.     371.     338.     4.73

      HYDROGRAPH AT
+                SUB226    5875.   6.33    1417.     396.     361.     5.06

      HYDROGRAPH AT
+                 SD-11    28.   6.33       4.       1.       1.      .01

      2 COMBINED AT
+                HYDSD     5903.   6.33    1421.     397.     362.     5.07

      HYDROGRAPH AT
+                SUB227     494.   6.00      64.      17.      16.      .21

      HYDROGRAPH AT
+                SUB228     575.   6.00      83.      23.      21.      .28

      HYDROGRAPH AT
+                 SD-12    25.   6.33       4.       1.       1.      .01

      2 COMBINED AT
+                HYDSD      586.   6.00      87.      24.      22.      .29

      HYDROGRAPH AT
+                SUB229     552.   6.00      95.      26.      24.      .32

      2 COMBINED AT
+                HYD229    6259.   6.33    1514.     423.     386.     5.39

      HYDROGRAPH AT
+                SUB230    6291.   6.33    1529.     428.     390.     5.48

      HYDROGRAPH AT
+                SUB231     427.   6.00      56.      15.      14.      .18

      HYDROGRAPH AT
+                SUB232     412.   6.33      89.      24.      22.      .30

      HYDROGRAPH AT
+                 SD-7      9.   6.33       1.       0.       0.      .00

      HYDROGRAPH AT
+                 SD-8     36.   6.33       5.       1.       1.      .01

      2 COMBINED AT
```

```
+                HYDSD     448.  6.33      94.      26.      23.      .32

     HYDROGRAPH AT
+                SUB234    241.  6.00      31.       9.       8.      .10

     HYDROGRAPH AT
+                SUB235    443.  6.00      66.      18.      17.      .22

     2 COMBINED AT
+                HYD235    867.  6.00     160.      44.      40.      .54

     ROUTED TO
+                RES235     62. 10.67      60.      36.      33.      .54
+                                                          1667.12    10.67

     HYDROGRAPH AT
+                SUB236    293.  6.33      95.      47.      43.      .69

     HYDROGRAPH AT
+                SUB237    290.  6.33      97.      48.      44.      .70

     HYDROGRAPH AT
+                SUB240    109.  6.00      16.       4.       4.      .06

     HYDROGRAPH AT
+                SUB238    143.  6.00      19.       5.       5.      .06

     HYDROGRAPH AT
+                SUB239    176.  6.00      25.       7.       6.      .08

     2 COMBINED AT
+                HYD239    286.  6.00      41.      11.      10.      .14

     HYDROGRAPH AT
+                SUB241    274.  6.00      46.      13.      12.      .16

     HYDROGRAPH AT
+                SUB242    249.  6.00      33.       9.       8.      .10

     HYDROGRAPH AT
+                SUB243    426.  6.00      59.      16.      15.      .19

     2 COMBINED AT
+                HYD243    701.  6.00     105.      29.      26.      .35

     HYDROGRAPH AT
+                SUB245    117.  6.00      15.       4.       4.      .05

     HYDROGRAPH AT
+                SUB246    297.  6.33      52.      14.      13.      .18

     HYDROGRAPH AT
+                SUB247    341.  6.33      60.      17.      15.      .21

     2 COMBINED AT
+                HYD247    830.  6.00     165.      45.      41.      .56

     ROUTED TO
+                RES243     61. 10.67      59.      39.      35.      .56
+                                                          1651.23    10.67

     HYDROGRAPH AT
+                SUB244    182.  6.33      77.      44.      40.      .63

     HYDROGRAPH AT
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+                SUB249     371.   6.33      112.      54.      49.      .77

     2 COMBINED AT
+                HYD249     661.   6.33      209.     102.      93.     1.46

     HYDROGRAPH AT
+                SUB250    1076.   6.33      306.     129.     118.     1.85

     HYDROGRAPH AT
+                 SD-16      36.   6.33        5.       1.       1.      .01

     HYDROGRAPH AT
+                 SD-15      60.   6.33        9.       3.       2.      .02

     HYDROGRAPH AT
+                 SD-14      86.   6.33       14.       4.       4.      .04

     3 COMBINED AT
+                HYD250    7453.   6.33     1844.     561.     512.     7.36

     HYDROGRAPH AT
+                SUB251    7385.   6.33     1878.     571.     521.     7.50

     HYDROGRAPH AT
+                 SD-13      26.   6.33        4.       1.       1.      .01

     2 COMBINED AT
+                 HYDSD    7412.   6.33     1882.     573.     522.     7.51

     HYDROGRAPH AT
+                SUB252     295.   6.33       52.      14.      13.      .19

     HYDROGRAPH AT
+                SUB253     315.   6.33       57.      16.      14.      .21

     2 COMBINED AT
+                HYD253    7727.   6.33     1939.     588.     536.     7.73

     HYDROGRAPH AT
+                SUB254    7719.   6.33     2010.     611.     557.     8.05

     HYDROGRAPH AT
+                SUB255     190.   6.00       25.       7.       6.      .08

     HYDROGRAPH AT
+                SUB256     666.   6.00       89.      24.      22.      .29

     HYDROGRAPH AT
+                SUB257     660.   6.00      113.      31.      28.      .37

     HYDROGRAPH AT
+                SUB258     793.   6.33      161.      44.      40.      .56

     HYDROGRAPH AT
+                 SD-17      26.   6.33        4.       1.       1.      .01

     2 COMBINED AT
+                 HYDSD     819.   6.33      165.      45.      41.      .57

     HYDROGRAPH AT
+                SUB259     900.   6.33      197.      54.      50.      .71

     HYDROGRAPH AT
+                SUB260      23.   6.33        3.       1.       1.      .01
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      HYDROGRAPH AT
+                SUB261    213.   6.67      43.      12.      11.     .17

      HYDROGRAPH AT
+                SUB262    576.   6.67     133.      38.      35.     .57

      HYDROGRAPH AT
+                SUB263    156.   6.33      19.       5.       5.     .06

      HYDROGRAPH AT
+                 SD-18     38.   6.33       6.       2.       1.     .01

      2 COMBINED AT
+                HYDSD      194.   6.33      25.       7.       6.     .08

      HYDROGRAPH AT
+                SUB264    260.   6.33      42.      12.      11.     .17

      HYDROGRAPH AT
+                SUB265    631.   6.33     109.      30.      28.     .44

      2 COMBINED AT
+                HYD265   1187.   6.33     242.      68.      62.    1.00

      ROUTED TO
+                RES265    219.   7.67     166.      68.      62.    1.00
+                                                   1642.03      7.67

      HYDROGRAPH AT
+                SUB266    284.   6.33     197.      79.      72.    1.17

      HYDROGRAPH AT
+                 SD-24     43.   6.33       6.       2.       2.     .02

      3 COMBINED AT
+                HYD266   1227.   6.33     392.     135.     123.    1.89

      HYDROGRAPH AT
+                SUB267   1271.   6.33     420.     144.     132.    2.05

      HYDROGRAPH AT
+                SUB285    366.   6.33      61.      17.      15.     .24

      2 COMBINED AT
+                HYD285   1637.   6.33     481.     161.     147.    2.29

      HYDROGRAPH AT
+                SUB268   1582.   6.33     506.     169.     154.    2.41

      2 COMBINED AT
+                HYD268   9301.   6.33    2513.     780.     711.   10.46

      HYDROGRAPH AT
+                SUB269   8861.   6.33    2553.     796.     726.   10.75

      HYDROGRAPH AT
+                 SD-26     33.   6.33       5.       1.       1.     .01

      HYDROGRAPH AT
+                 SD-27     31.   6.33       4.       1.       1.     .01

      2 COMBINED AT
+                HYDSD      63.   6.33       9.       3.       2.     .02

      HYDROGRAPH AT
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+	SD-28	75.	6.33	12.	3.	3.	.03
	2 COMBINED AT						
+	HYDSD	8936.	6.33	2565.	799.	729.	10.78
	HYDROGRAPH AT						
+	SUB270	356.	6.33	56.	15.	14.	.19
	HYDROGRAPH AT						
+	SUB271	462.	6.33	79.	22.	20.	.27
	HYDROGRAPH AT						
+	SUB272	488.	6.33	100.	28.	25.	.35
	2 COMBINED AT						
+	HYD272	9425.	6.33	2664.	827.	754.	11.13
	HYDROGRAPH AT						
+	SUB274	9345.	6.33	2662.	827.	754.	11.13
	HYDROGRAPH AT						
+	SUB273	235.	6.00	36.	10.	9.	.13
	2 COMBINED AT						
+	HYD274	9461.	6.33	2697.	837.	763.	11.26
	HYDROGRAPH AT						
+	SUB275	9343.	6.33	2696.	837.	763.	11.27
	HYDROGRAPH AT						
+	SUB276	658.	6.00	87.	24.	22.	.28
	HYDROGRAPH AT						
+	SUB277	680.	6.00	115.	31.	29.	.36
	2 COMBINED AT						
+	HYD277	9766.	6.33	2807.	869.	792.	11.63
	HYDROGRAPH AT						
+	SUB278	9620.	6.33	2877.	891.	812.	11.94
	HYDROGRAPH AT						
+	SUB279	224.	6.33	40.	11.	10.	.14
	HYDROGRAPH AT						
+	SUB286	269.	6.33	43.	12.	11.	.15
	HYDROGRAPH AT						
+	SUB280	524.	6.33	106.	30.	27.	.38
	HYDROGRAPH AT						
+	SUB281	67.	6.33	12.	3.	3.	.05
	HYDROGRAPH AT						
+	SUB282	185.	6.33	38.	11.	10.	.14
	HYDROGRAPH AT						
+	SUB283	327.	6.33	71.	20.	18.	.27
	4 COMBINED AT						
+	HYD288	10695.	6.33	3094.	952.	868.	12.72
	HYDROGRAPH AT						
+	SD-19	36.	6.33	5.	1.	1.	.01

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      HYDROGRAPH AT
+                SD-20     65.  6.33      10.      3.      2.     .02

      HYDROGRAPH AT
+                SD-21     35.  6.33       5.      1.      1.     .01

      HYDROGRAPH AT
+                SD-22     54.  6.33       8.      2.      2.     .02

      HYDROGRAPH AT
+                SD-23     75.  6.33      12.      3.      3.     .03

      HYDROGRAPH AT
+                SD-25     29.  6.33       4.      1.      1.     .01


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