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WINDMILL GULCH

Drainage Basin Planning Study
Technical Addendum
Volume II- Hydraulics

RETURN WITHIN 2 WEEKS TO:
CITY OF COLORADO SPRINGS
STORM WATER & SUBDIVISION
101 W. COSTILLA, SUITE 113
COLORADO SPRINGS, CO 80903
(719) 578-6212

prepared for

El Paso County
Department of Public Works

February 1992
WCEA #89820

RETURN WITHIN 2 WEEKS TO:
CITY OF COLORADO SPRINGS
STORM WATER & SUBDIVISION
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COLORADO SPRINGS, CO 80903
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WILSON
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WINDMILL GULCH
DRAINAGE BASIN PLANNING STUDY
TECHNICAL ADDENDUM

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WINDMILL GULCH
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THIS RUN EXECUTED 02DEC91 16:12:21

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 Version   4.6.0;  February 1991
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WINDMILL GULCH DRAINAGE BASIN PLANNING STUDY - WILSON & COMPANY
144" STORM SEWER ENTRANCE SOUTH OF GRAND TO DRENNAN B9-B20
EXISTING CONDITION - MAIN CHANNEL

```
SPLIT FLOW BEING PERFORMED


SF


JC SPLIT FLOW WEST ALONG GRAND BOULEVARD BETWEEN STA. 31+14 AND STA. 31+42
JP     0       0       0      -1       0

TW SPLIT FLOW WEST ALONG GRAND BOULEVARD BETWEEN STA. 31+14 AND STA. 31+42
WS     2    3114    3142      -1     2.6
WC     0  5737.3      28  5737.8

JC SPLIT FLOW WEST ALONG GRAND BOULEVARD BETWEEN STA. 31+42 AND STA. 32+50
JP     0       0       0      -1       0

TW SPLIT FLOW WEST ALONG GRAND BOULEVARD BETWEEN STA. 31+42 AND STA. 32+50
WS     2    3142    3250      -1     2.6
WC     0  5737.8     108    5740

JC SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+15 AND STA. 50+56
JP     0       0       0      -1       0

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+15 AND STA. 50+56
WS     2    5015    5056    3017     2.6
WC     0  5762.2      41  5762.4

JC SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+56 AND STA. 50+99
JP     0       0       0      -1       0

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+56 AND STA. 50+99
WS     2    5056    5099    3017     2.6
WC     0  5762.4      43  5763.3

JC SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+99 AND STA. 51+33
JP     0       0       0      -1       0

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+99 AND STA. 51+33
WS     2    5099    5133    3017     2.6
WC     0  5763.3      34  5764.7
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JC SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+15 AND STA. 50+56
JP     0       0       0      -1       0

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+15 AND STA. 50+56
WS     2    5015    5056    4100     2.6
WC     0  5762.2      41  5762.4

JC SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+56 AND STA. 50+99
JP     0       0       0      -1       0

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+56 AND STA. 50+99
WS     2    5056    5099    4100     2.6
WC     0  5762.4      43  5763.3

JC SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+99 AND STA. 51+33
JP     0       0       0      -1       0

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+99 AND STA. 51+33
WS     2    5099    5133    4100     2.6
WC     0  5763.3      34  5765.2
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T1 WINDMILL GULCH DRAINAGE BASIN PLANNING STUDY - WILSON & COMPANY   89-820
T2 144" CMP STORM SEWER ENTRANCE SOUTH OF GRAND BOULEVARD TO DRENNAN ROAD
T3       WINDMILL GULCH EXISTING CONDITION  10-YEAR 2-HOUR        WGEXIST.DAT

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0        2        0        0        0        0        0        0     5732.6      0

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

      1        0       -1        0        0        0        0        0        0        0


NC     .040     .040     .013      .1       .3
BT        2      705     1190
        FEMA SECTION A - 144" CMP STORM SEWER ENTRANCE SOUTH OF GRAND BOULEVARD
X1     2864        7     1340     1360
GR     5738     1000     5736     1240   5734.3     1340   5726.6     1340   5726.6     1360
GR   5734.3     1360     5736     1490

        STEP IN CHANNEL WALL (0.5' STEP)
X1     2893        9     1180     1200       29       29       29
GR     5737     1000     5736     1125   5735.3     1165   5734.3     1180   5726.8     1180
GR   5726.8     1200   5734.3     1200   5734.8     1215   5736.5     1290

        GRADE BREAK IN CHANNEL WALL
X1     2997        7     1370     1390      104      104      104
GR     5738     1000     5736     1355     5735     1370     5727     1370     5727     1390
GR     5735     1390     5736     1405

NC        0        0        0       .3       .5
        FEMA SECTION B - OUTFALL GRAND BOULEVARD BOX CULVERT - DOUBLE 9' x 7'
X1     3017        7     1530     1549       20       20       20
X3       10        0        0        0        0        0        0   5737.1   5737.1
GR     5740     1000   5738.1     1515   5737.1     1530     5727     1530     5727     1549
GR   5737.1     1549   5738.1     1564

SB     1.05      1.6      2.6        0       19        1      126      .01   5727.1     5727
        FEMA SECTION C - ENTRANCE GRAND BOULEVARD BOX CULVERT - DOUBLE 9'x 7'
X1     3067        5     1015     1034       50       50       50
X2        0        0        1   5734.1     5738
X3       10        0        0        0        0        0        0     5738     5738
BT        5     1000   5738.5   5738.5     1015     5738   5734.1     1015     5738   5734.1
BT     1034     5738   5734.1     1034     5738   5734.1
GR   5738.5     1000     5738     1015   5727.1     1015   5727.1     1034     5738     1034

NC        0        0        0       .1       .3
        DROP STRUCTURE END SILL
X1     3071        5     1015     1034        4        4        4
GR   5738.4     1000   5737.9     1015   5727.1     1015   5727.1     1034   5737.9     1034
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        DROP STRUCTURE BOTTOM
X1    3098        5      1015      1034        27        27        27
GR   5737.7     1000    5737.2      1015    5727.1      1015    5727.1      1034    5737.2      1034

        DROP STRUCTURE CREST (8.5' SLOPING DROP)/END CHANNEL TRANSITION
X1    3114        6      1015      1034        16        16        16
GR   5737.3     1000    5736.8      1015    5731.6      1015    5731.6      1034    5736.8      1034
GR   5737.3     1060

        FEMA SECTION D - BEGIN CHANNEL TRANSITION
X1    3142        6      1015      1035        28        28        28
GR   5738.9     1000    5737.9      1015      5732      1021      5732      1029    5737.3      1035
GR   5737.8     1050

X1    3250        8      1015      1035       105       110       108
GR   5740.1     1000    5739.1      1015    5733.1      1021    5733.1      1029    5739.1      1035
GR   5739.6     1050      5740      1062    5741.3      1100

        FEMA SECTION E
X1    3625        7      1040      1060       370       380       375
GR   5743.9     1000    5742.9      1040    5736.9      1046    5736.9      1054    5742.9      1060
GR     5746     1075      5748      1085

        FEMA SECTION F
X1    4100        7      1015      1035       475       475       475
GR   5750.7     1000    5749.7      1015    5743.7      1021    5743.7      1029    5749.7      1035
GR     5750     1045      5752      1135

        FEMA SECTION G
X1    4575        8      1085      1105       485       465       475
GR     5760     1000    5758.2      1060    5756.2      1085    5750.2      1091    5750.2      1099
GR   5756.2     1105      5758      1110    5759.5      1165

        END CHANNEL TRANSITION
X1    5015       12      1105      1125       435       445       440
GR     5768     1000      5766      1025      5764      1035    5762.2      1090    5761.7      1105
GR   5755.7     1111    5755.7      1119    5761.7      1125    5762.2      1135      5764      1225
GR     5766     1235      5768      1285

        BEGIN CHANNEL TRANSITION
X1    5043       12      1105      1125        28        28        28
GR     5768     1000      5766      1025      5764      1045    5762.3      1090    5761.8      1105
GR   5755.8     1105    5755.8      1125    5761.8      1125    5762.3      1135      5764      1205
GR     5766     1240      5768      1310

NC       0        0         0        .3        .5
        FEMA SECTION H - OUTFALL ASPEN DR/HACKBERRY DR BOX CULVERT - 18'x 4'
X1    5056       12      1105      1123        13        13        13
X3      10        0         0         0         0         0         0    5761.9    5761.9
GR     5768     1000      5766      1030      5764      1050    5762.4      1095    5761.9      1105
GR   5755.9     1105    5755.9      1123    5761.9      1123    5762.4      1133      5764      1195
GR     5766     1225      5768      1300
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BT      2       675      1170
SB      0       1.6       2.6        0        18         0        72       .02    5756.8    5755.9
        FEMA SECTION I - ENTRANCE ASPEN DR/HACKBERRY DR BOX CULVERT - 18' x 4'
X1   5099        15      1135     1153        43        43        43
X2      0         0         1   5760.8    5762.8
X3     10         0         0        0         0         0         0   5762.8    5762.8
BT     15      1000      5772     5772      1015      5770      5770      1040      5768      5768
BT   1065      5766      5766     1125    5763.3    5763.3      1135   5762.8    5760.8      1135
BT 5762.8    5760.8      1153   5762.8    5760.8      1153    5762.8    5760.8      1163    5763.3
BT 5763.3      1200      5764     5764      1240      5766      5766      1255      5768      5768
BT   1340      5770      5770     1355      5772      5772
GR   5772      1000      5770     1015      5768      1040      5766      1065    5763.3      1125
GR 5762.8      1135    5756.8     1135    5756.8      1153    5762.8      1153    5763.3      1163
GR   5764      1200      5766     1240      5768      1255      5770      1340      5772      1355

NC      0         0         0       .1        .3
        END CHANNEL TRANSITION
X1   5105        15      1135     1155         6         6         6
GR   5772      1000      5770     1020      5768      1045      5766      1070    5763.5      1125
GR   5763      1135      5757     1135      5757      1155      5763      1155    5763.5      1165
GR   5764      1190      5766     1240      5768      1250      5770      1340      5772      1355

        BEGIN CHANNEL TRANSITION
X1   5133        13      1155     1175        28        28        28
GR   5772      1000      5770     1030      5768      1065    5764.7      1145    5764.2      1155
GR 5758.2      1161    5758.2     1169    5764.2      1175    5765.2      1185      5766      1250
GR   5768      1265      5770     1280      5772      1370

        FEMA SECTION J - END CHANNEL TRANSITION
X1   5335        11      1115     1135       200       205       202
GR   5774      1000      5772     1050      5770      1080    5769.2      1105    5768.7      1115
GR 5762.7      1121    5762.7     1129    5768.7      1135      5770      1160      5772      1190
GR   5774      1230

        FEMA SECTION K - BEGIN CHANNEL TRANSITION
X1   5453         9      1060     1089       118       118       118
GR   5774      1000      5772     1045    5770.8      1050    5770.3      1060    5765.3      1070
GR 5765.3      1079    5770.3     1089      5772      1120      5774      1150

        END CHANNEL TRANSITION
X1   5557        10      1055     1084       104       104       104
GR   5778      1000      5776     1030      5774      1050    5772.9      1055    5767.9      1065
GR 5767.9      1074    5772.9     1084      5774      1090      5776      1115      5777      1135

        BEGIN CHANNEL TRANSITION
X1   5589         9      1050     1067        32        32        32
GR   5780      1000      5778     1030      5776      1045    5773.7      1050    5768.7      1050
GR 5768.7      1067    5773.7     1067      5776      1075      5780      1085
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NC        0         0         0        .3        .5
        FEMA SECTION L - OUTFALL DETENTION POND BOX CULVERT - DOUBLE 8'x 6'
X1     5615         4      1000      1017        26        26        26
X3       10         0         0         0         0         0         0      5780      5780
GR   5780.1      1000    5769.3      1000    5769.3      1017    5780.1      1017

SB     1.05       1.6       2.6         0        17         1        96       .01    5769.8    5769.3
        FEMA SECTION M - ENTRANCE DETENTION POND BOX CULVERT - DOUBLE 8'x 6'
X1     5675         8      1030      1047        60        60        60
X2        0         0         1    5775.8    5779.4
X3       10         0         0         0         0         0         0    5779.4    5779.4
BT        8      1000      5784      5784      1019    5779.4    5779.4      1030    5779.4    5775.8
BT     1030    5779.4    5775.8      1047    5779.4    5775.8      1047    5779.4    5775.8      1058
BT   5779.4    5779.4      1077      5784      5784
GR     5784      1000    5779.4      1019    5779.4      1030    5769.8      1030    5769.8      1047
GR   5779.4      1047    5779.4      1058      5784      1077

NC        0         0         0        .1        .3
        FEMA SECTION N - DETENTION POND BOX CULVERT HEADWALL
X1     5702        10      1238      1262        27        27        27
GR     5784      1000      5776      1050      5774      1080      5772      1160      5770      1238
GR     5770      1262      5772      1325      5774      1370      5782      1450    5783.5      1480

QT        2       790      1405
NC        0         0      .040         0         0
        FEMA SECTION O
X1     6000        10      1055      1645       298       298       298
GR     5784      1000      5776      1055      5774      1070      5772      1120    5771.4      1290
GR     5772      1335      5774      1615      5776      1645      5782      1675      5784      1700

        FEMA SECTION P
X1     6300         8      1105      1510       230       390       300
GR     5794      1000      5776      1105      5774      1165    5773.1      1295    5773.9      1350
GR     5774      1425      5776      1510      5794      1585

QT        2       745      1365
        FEMA SECTION Q - END DROP STRUCTURE RIPRAP APRON
X1     6607        14      1260      1390       307       307       307
GR     5794      1000      5792      1015      5790      1030      5788      1055      5786      1075
GR     5784      1080      5782      1195      5780      1235      5778      1260    5776.2      1300
GR   5776.2      1350      5778      1390      5780      1410      5794      1490

        DROP STRUCTURE BOTTOM
X1     6636         8      1100      1230        29        29        29
GR     5788      1000      5786      1045    5785.9      1100    5776.9      1140    5776.9      1190
GR   5785.9      1230      5786      1260      5788      1285

        DROP STRUCTURE CREST (4' VERTICAL DROP)
X1     6637        14      1100      1230         1         1         1
GR     5788      1000      5786      1045    5785.9      1100    5785.9      1120    5780.9      1140
GR   5780.9      1153    5778.9      1159    5778.9      1171    5780.9      1177    5780.9      1190
GR   5785.9      1210    5785.9      1230      5786      1260      5788      1285
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        END DROP STRUCTURE RIPRAP APRON
X1    6817        9      1085      1215       210       155       180
GR    5800     1000      5796      1015      5794      1030      5792      1050    5790.6      1085
GR  5781.6     1125    5781.6      1175    5790.6      1215      5800      1255

        DROP STRUCTURE BOTTOM
X1    6846        9      1085      1215        29        29        29
GR    5800     1000      5796      1015      5794      1040      5792      1080    5790.7      1085
GR  5781.7     1125    5781.7      1175    5790.7      1215      5800      1250

        DROP STRUCTURE CREST (4' VERTICAL DROP)
X1    6847       15      1085      1215         1         1         1
GR    5800     1000      5796      1015      5794      1040      5792      1080    5790.7      1085
GR  5790.7     1105    5785.7      1125    5785.7      1138    5783.7      1144    5783.7      1156
GR  5785.7     1162    5785.7      1175    5790.7      1195    5790.7      1215      5800      1250

        END RIPRAP APRON
X1    6992       10      1080      1210       145       145       145
GR    5804     1000      5802      1005      5800      1020      5798      1065      5796      1075
GR  5795.3     1080    5786.3      1120    5786.3      1170    5795.3      1210      5804      1245

        BEGIN RIPRAP APRON/DROP STURCTURE BOTTOM
X1    7032        8      1120      1170        40        40        40
GR    5806     1000      5804      1010      5802      1050      5800      1065    5786.4      1120
GR  5786.4     1170      5802      1220      5806      1250

NC       0        0      .013         0         0
        FEMA SECTION R - DROP STRUCTURE CREST (5.4' SLOPING DROP)/144" CMP STORM
        SEWER OUTFALL SOUTH OF WAGEMAN DRIVE
X1    7072        9      1000      1012        40        40        40
X3      10        0         0         0         0         0         0      5806      5806
GR    5806     1000    5797.8      1000    5794.8    1000.8    5792.8    1002.7    5791.8      1006
GR  5792.8   1009.3    5794.8    1011.2    5797.8      1012      5806      1012

QT       2      685      1315
NC    .050     .050      .080         0         0
        FEMA SECTION W - UPSTREAM OF BRADLEY ROAD BOX CULVERT - DOUBLE 10' x 6'
X1    8450       21      1236      1376        .1        .1        .1
RC       3        0      5815       685    5820.4      1315    5825.7
GR    5832     1000      5830      1020      5828      1045      5826      1075      5824      1110
GR    5822     1130      5820      1170      5818      1220    5816.9      1236      5816      1250
GR  5815.2     1330      5818      1355    5816.9      1376      5818      1400      5820      1405
GR    5822     1435      5824      1465      5826      1490      5828      1535      5830      1585
GR    5832     1620

QT       2      590      1375
        FEMA SECTION X
X1    8875       19      1397      1477       400       435       425
GR    5834     1000      5832      1070      5830      1130      5828      1175      5826      1225
GR    5824     1275      5822      1350      5820      1375    5819.6      1397    5818.5      1455
GR  5819.6     1477      5820      1485      5822      1505      5824      1530      5826      1550
GR    5828     1565      5830      1590      5832      1620      5834      1645
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        FEMA SECTION Y
X1     9300        15      1369      1439       390       445       425
GR     5836      1000      5834      1060      5832      1155      5830      1320      5828      1365
GR   5827.2      1369      5826      1375    5824.2      1380      5826      1420    5827.2      1439
GR     5828      1455      5830      1475      5832      1505      5834      1535      5836      1550

QT        2       420      1045
        FEMA SECTION Z
X1     9700        15      1262      1332       470       355       400
GR     5840      1000      5838      1065      5836      1150      5834      1245    5832.3      1262
GR     5832      1265      5830      1275    5829.2      1280      5830      1315      5832      1330
GR   5832.3      1332      5834      1345      5836      1400      5838      1415      5840      1425

        FEMA SECTION AA
X1    10150        20      1253      1323       505       405       450
GR     5850      1000      5848      1010      5846      1025      5844      1050      5842      1095
GR     5840      1190      5838      1240    5837.3      1253      5836      1275    5834.6      1290
GR     5836      1310    5837.3      1323      5838      1330      5840      1345    5841.6      1365
GR     5842      1400      5844      1425      5846      1475      5848      1515      5850      1535

        FEMA SECTION AB - DOWNSTREAM OF IRRIGATION CANAL NO. 4
X1    10625        23      1243      1313       500       465       475
GR     5860      1000      5858      1025      5856      1045      5854      1065      5854      1165
GR     5852      1175      5850      1185      5848      1195      5846      1210      5844      1230
GR   5843.4      1243      5842      1275    5843.4      1313      5844      1330      5846      1345
GR     5848      1360      5850      1370      5852      1380      5854      1390      5854      1480
GR     5856      1520      5858      1580      5860      1635

NC        0         0      .050         0         0
        FEMA SECTION AC - UPSTREAM OF IRRIGATION CANAL NO. 4
X1    10675        12      1240      1320        50        50        50
GR     5862      1000      5860      1025      5858      1050      5856      1070      5854      1095
GR     5854      1240      5854      1320      5854      1470      5856      1510      5858      1565
GR     5860      1615      5862      1715

        FEMA SECTION AD
X1    10900        12      1090      1170       225       225       225
GR     5864      1000      5862      1055      5856      1075      5854      1080      5854      1090
GR     5854      1170      5854      1235      5856      1265      5858      1295      5860      1330
GR     5862      1385      5864      1450

        FEMA SECTION AE
X1    11350        13      1056      1146       420       560       450
GR     5866      1000      5858      1020      5856      1035    5854.6      1056      5854      1065
GR     5854      1140    5854.6      1146      5856      1160      5858      1175      5860      1195
GR     5862      1225      5864      1250      5866      1275

        FEMA SECTION AF
X1    11825        16      1067      1157       470       480       475
GR     5870      1000      5860      1025      5858      1050    5857.1      1067      5856      1090
GR   5855.1      1105      5856      1140    5857.1      1157      5858      1170      5860      1200
GR     5862      1230      5864      1255      5866      1295      5868      1305    5868.4      1320
GR     5870      1350
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        FEMA SECTION AG
X1    12275        17      1082      1182       460       400       450
GR     5874      1000      5862      1050    5860.7      1082      5860      1100      5858      1120
GR   5857.4      1125      5858      1135      5860      1175    5860.7      1182      5862      1195
GR     5864      1215      5866      1240      5868      1265      5870      1275      5871      1280
GR     5872      1370      5874      1380

        FEMA SECTION AH
X1    12750        21      1267      1367       470       530       475
GR     5876      1000      5874      1035      5872      1070      5870      1130      5868      1190
GR     5866      1250    5864.2      1267      5864      1270      5862      1285      5860      1305
GR   5859.8      1325      5860      1330      5862      1345      5864      1365    5864.2      1367
GR     5866      1385      5868      1405      5870      1435      5872      1505      5874      1560
GR     5876      1590

QT        2       310       825
NC        0         0      .080         0         0
        FEMA SECTION AI
X1    13200        19      1244      1334       475       430       450
GR     5880      1000      5878      1045      5876      1075      5874      1090      5872      1110
GR     5870      1170      5868      1220    5866.6      1244      5866      1255    5864.7      1290
GR     5866      1330    5866.6      1334      5868      1345      5870      1360      5872      1405
GR     5874      1510      5876      1535      5878      1555      5880      1565

        FEMA SECTION AJ
X1    13625        17      1285      1365       490       375       425
GR     5884      1000      5882      1020      5880      1055      5878      1105      5876      1140
GR     5874      1230      5872      1265    5871.5      1285    5870.6      1320    5871.5      1365
GR     5872      1395      5874      1445      5876      1520      5878      1560      5880      1620
GR     5882      1650      5884      1680

        FEMA SECTION AK
X1    14075        15      1331      1421       430       470       450
GR     5890      1000      5888      1035      5886      1085      5884      1110      5882      1145
GR     5880      1305    5879.5      1331    5878.7      1380    5879.5      1421      5880      1445
GR     5882      1515      5884      1610      5886      1685      5888      1725      5890      1770

QT        2       135       370
        FEMA SECTION AL
X1    14500        13      1327      1387       410       445       425
GR     5892      1000      5890      1085      5888      1130      5886      1210      5884      1305
GR   5883.8      1327    5883.6      1345    5883.0      1387      5884      1445      5886      1470
GR     5888      1485      5890      1500      5892      1515

        FEMA SECTION AM
X1    14950        15      1176      1256       500       350       450
GR     5902      1000      5900      1030      5898      1060      5896      1090      5894      1110
GR     5892      1140    5891.1      1176    5890.4      1205    5891.1      1256      5892      1320
GR     5894      1460      5896      1585      5898      1620      5900      1645      5902      1660
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        FEMA SECTION AN
X1    15400        15      1313      1393       405       510       450
GR     5910      1000      5908      1020      5906      1065      5904      1115      5902      1170
GR     5900      1215    5898.7      1313      5898      1360    5898.7      1393      5900      1460
GR     5902      1500      5904      1535      5906      1575      5908      1615      5910      1635

NC        0         0      .050         0         0
        FEMA SECTION AO
X1    15800        17      1318      1368       420       390       400
GR     5920      1000      5918      1025      5916      1085      5914      1125      5912      1160
GR     5910      1180      5908      1245    5907.2      1318    5906.8      1350    5907.2      1368
GR     5908      1410      5910      1450      5912      1470      5914      1495      5916      1510
GR     5918      1530      5920      1545

        FEMA SECTION AP
X1    16200        19      1304      1354       390       410       400
GR     5930      1000      5928      1040      5926      1075      5924      1125      5922      1165
GR     5920      1205      5918      1235      5916      1270    5915.5      1304    5915.1      1330
GR   5915.5      1354      5916      1385      5918      1445      5920      1490      5922      1510
GR     5924      1535      5926      1555      5928      1575      5930      1595

        FEMA SECTION AQ - SOUTH OF DRENNAN ROAD
X1    16600        17       225       275       385       420       400
GR     5940         0      5938        35      5936        60      5934        90      5932       125
GR     5930       165      5928       200      5926       225    5924.3       255      5926       275
GR     5928       295      5930       335      5932       375      5934       410      5936       440
GR     5938       475      5940       500
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   SECND     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 1



CCHV=     .100 CEHV=     .300
*SECNO 2864.000
       FEMA SECTION A - 144" CMP STORM SEWER ENTRANCE SOUTH OF GRAND BOULEVARD
  2864.000      6.00   5732.60       .00   5732.60   5733.14       .54       .00       .00   5734.30
     705.0        .0     705.0        .0        .0     120.0        .0        .0        .0   5734.30
       .00       .00      5.87       .00      .000      .013      .000      .000   5726.60   1340.00
   .000453        0.        0.        0.         0         0         0       .00     20.00   1360.00


*SECNO 2893.000
       STEP IN CHANNEL WALL (0.5' STEP)
  2893.000      5.79   5732.59       .00       .00   5733.16       .58       .01       .01   5734.30
     705.0        .0     705.0        .0        .0     115.8        .0        .1        .0   5734.30
       .00       .00      6.09       .00      .000      .013      .000      .000   5726.80   1180.00
   .000502       29.       29.       29.         2         0         0       .00     20.00   1200.00


*SECNO 2997.000
       GRADE BREAK IN CHANNEL WALL
  2997.000      5.62   5732.62       .00       .00   5733.23       .61       .05       .01   5735.00
     705.0        .0     705.0        .0        .0     112.4        .0        .4        .1   5735.00
       .01       .00      6.27       .00      .000      .013      .000      .000   5727.00   1370.00
   .000547      104.      104.      104.         2         0         0       .00     20.00   1390.00


CCHV=     .300 CEHV=     .500
*SECNO 3017.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     5737.10 ELREA=     5737.10

       FEMA SECTION B - OUTFALL GRAND BOULEVARD BOX CULVERT - DOUBLE 9' x 7'
  3017.000      5.59   5732.59       .00       .00   5733.28       .68       .01       .04   5737.10
     705.0        .0     705.0        .0        .0     106.3        .0        .4        .1   5737.10
       .01       .00      6.63       .00      .000      .013      .000      .000   5727.00   1530.00
   .000629       20.       20.       20.         2         0         0       .00     19.00   1549.00
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

SB	XK	XKOR	CDFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.60	2.60	.00	19.00	1.00	126.00	.01	5727.10	5727.00

*SECNO 3067.000
CLASS A LOW FLOW

3420 BRIDGE W.S.= 5732.54 BRIDGE VELOCITY= 7.12 CALCULATED CHANNEL AREA= 98.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	5733.40	.13	0.	705.	126.	126.	5734.10	5738.00	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 5738.00 ELREA= 5738.00

FEMA SECTION C - ENTRANCE GRAND BOULEVARD BOX CULVERT - DOUBLE 9'x 7'

3067.000	5.62	5732.72	.00	.00	5733.40	.68	.12	.00	5738.00
705.0	.0	705.0	.0	.0	106.8	.0	.5	.1	5738.00
.01	.00	6.60	.00	.000	.013	.000	.000	5727.10	1015.00
.000621	50.	50.	50.	0	0	0	.00	19.00	1034.00

CCHV= .100 CEHV= .300
*SECNO 3071.000
DROP STRUCTURE END SILL

3071.000	5.62	5732.72	.00	.00	5733.40	.68	.00	.00	5737.90
705.0	.0	705.0	.0	.0	106.8	.0	.5	.1	5737.90
.01	.00	6.60	.00	.000	.013	.000	.000	5727.10	1015.00
.000621	4.	4.	4.	0	0	0	.00	19.00	1034.00

*SECNO 3098.000
DROP STRUCTURE BOTTOM

3098.000	5.65	5732.75	.00	.00	5733.42	.67	.02	.00	5737.20
705.0	.0	705.0	.0	.0	107.3	.0	.6	.1	5737.20
.01	.00	6.57	.00	.000	.013	.000	.000	5727.10	1015.00
.000612	27.	27.	27.	2	0	0	.00	19.00	1034.00

*SECNO 3114.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
DROP STRUCTURE CREST (8.5' SLOPING DROP)/END CHANNEL TRANSITION

3114.000	3.48	5735.08	5735.08	.00	5736.85	1.76	.02	.33	5736.80
705.0	.0	705.0	.0	.0	66.2	.0	.6	.1	5736.80
.01	.00	10.65	.00	.000	.013	.000	.000	5731.60	1015.00
.002495	16.	16.	16.	20	14	0	.00	19.00	1034.00

*SECNO 3142.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION D - BEGIN CHANNEL TRANSITION

3142.000	4.95	5736.95	5736.95	.00	5738.73	1.78	.06	.00	5737.90
705.0	.0	705.0	.0	.0	65.9	.0	.7	.1	5737.30
.01	.00	10.69	.00	.000	.013	.000	.000	5732.00	1015.97
.002092	28.	28.	28.	20	11	0	.00	18.64	1034.60

*SECNO 3250.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3250.000	5.01	5738.11	5738.11	.00	5739.93	1.81	.23	.01	5739.10
705.0	.0	705.0	.0	.0	65.2	.0	.8	.2	5739.10
.01	.00	10.81	.00	.000	.013	.000	.000	5733.10	1015.99
.002121	105.	108.	110.	20	5	0	.00	18.03	1034.01

*SECNO 3625.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION E

3625.000	5.00	5741.90	5741.90	.00	5743.73	1.83	.80	.00	5742.90
705.0	.0	705.0	.0	.0	65.0	.0	1.4	.3	5742.90
.02	.00	10.85	.00	.000	.013	.000	.000	5736.90	1041.00
.002144	370.	375.	380.	20	5	0	.00	18.00	1059.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 4100.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION F
  4100.000      5.00   5748.70   5748.70       .00   5750.53      1.83      1.02       .00   5749.70
     705.0        .0     705.0        .0        .0      65.0        .0       2.1        .5   5749.70
       .04       .00     10.85       .00      .000      .013      .000      .000   5743.70   1016.00
   .002141      475.      475.      475.        20         5         0       .00     18.00   1034.00

*SECNO 4575.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION G
  4575.000      5.01   5755.21   5755.21       .00   5757.03      1.82      1.02       .00   5756.20
     705.0        .0     705.0        .0        .0      65.1        .0       2.8        .7   5756.20
       .05       .00     10.83       .00      .000      .013      .000      .000   5750.20   1085.99
   .002133      485.      475.      465.        20         5         0       .00     18.01   1104.01

*SECNO 5015.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       END CHANNEL TRANSITION
  5015.000      5.00   5760.70   5760.70       .00   5762.53      1.83       .94       .00   5761.70
     705.0        .0     705.0        .0        .0      65.0        .0       3.5        .9   5761.70
       .06       .00     10.85       .00      .000      .013      .000      .000   5755.70   1106.00
   .002141      435.      440.      445.        20         5         0       .00     18.00   1124.00

*SECNO 5043.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.43

       BEGIN CHANNEL TRANSITION
  5043.000      6.42   5762.22       .00       .00   5762.68       .47       .02       .14   5761.80
     705.0        .6     703.9        .4       2.6     128.3       1.7       3.5        .9   5761.80
       .06       .25      5.49       .25      .040      .013      .040      .000   5755.80   1092.58
   .000362       28.       28.       28.         3         0         0       .00     40.70   1133.28
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CCHV= .300 CEHV= .500
*SECNO 5056.000
FEMA SECTION H - OUTFALL ASPEN DR/HACKBERRY DR BOX CULVERT - 18'x 4'

5056.000	6.25	5762.15	.00	.00	5762.76	.61	.01	.07	5761.90
705.0	.1	704.7	.1	.6	112.5	.6	3.6	.9	5761.90
.06	.21	6.26	.21	.040	.013	.040	.000	5755.90	1099.96
.000515	13.	13.	13.	2	0	0	.00	28.08	1128.04

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.60	2.60	.00	18.00	.00	72.00	.02	5756.80	5755.90

*SECNO 5099.000
PRESSURE AND WEIR FLOW, Weir Submergence Based on TRAPEZOIDAL Shape

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
5764.34	5763.66	.00	89.	583.	72.	72.	5760.80	5762.80	74.

FEMA SECTION I - ENTRANCE ASPEN DR/HACKBERRY DR BOX CULVERT - 18'x 4'

5099.000	6.46	5763.26	.00	.00	5763.78	.52	1.02	.00	5762.80
675.0	.6	673.8	.6	2.1	116.3	2.1	3.7	1.0	5762.80
.06	.29	5.79	.29	.040	.013	.040	.000	5756.80	1125.80
.000422	43.	43.	43.	2	0	3	.00	36.40	1162.20

CCHV= .100 CEHV= .300
*SECNO 5105.000
END CHANNEL TRANSITION

5105.000	6.35	5763.35	.00	.00	5763.79	.44	.00	.01	5763.00
675.0	.3	674.5	.3	1.3	127.1	1.3	3.7	1.0	5763.00
.06	.22	5.31	.22	.040	.013	.040	.000	5757.00	1127.92
.000343	6.	6.	6.	2	0	0	.00	34.16	1162.08

*SECNO 5133.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       BEGIN CHANNEL TRANSITION
  5133.000      4.88   5763.08   5763.08       .00   5764.87      1.79       .02       .41   5764.20
     675.0        .0     675.0        .0        .0     62.9        .0       3.8       1.0   5764.20
       .06       .00     10.74       .00      .000      .013      .000      .000   5758.20   1156.12
   .002151       28.       28.       28.        20        15         0       .00     17.76   1173.88


*SECNO 5335.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION J - END CHANNEL TRANSITION
  5335.000      4.88   5767.58   5767.58       .00   5769.37      1.79       .44       .00   5768.70
     675.0        .0     675.0        .0        .0     62.8        .0       4.1       1.1   5768.70
       .07       .00     10.75       .00      .000      .013      .000      .000   5762.70   1116.12
   .002156      200.      202.      205.        20         5         0       .00     17.75   1133.88


*SECNO 5453.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION K - BEGIN CHANNEL TRANSITION
  5453.000      4.11   5769.41   5769.41       .00   5770.82      1.42       .24       .04   5770.30
     675.0        .0     675.0        .0        .0     70.7        .0       4.2       1.1   5770.30
       .07       .00      9.55       .00      .000      .013      .000      .000   5765.30   1061.79
   .001969      118.      118.      118.        20        15         0       .00     25.43   1087.21


*SECNO 5557.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       END CHANNEL TRANSITION
  5557.000      4.11   5772.01   5772.01       .00   5773.42      1.41       .20       .00   5772.90
     675.0        .0     675.0        .0        .0     70.9        .0       4.4       1.2   5772.90
       .08       .00      9.53       .00      .000      .013      .000      .000   5767.90   1056.77
   .001956      104.      104.      104.        20         5         0       .00     25.45   1082.23
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


#SECNO 5589.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       BEGIN CHANNEL TRANSITION
  5589.000      3.64   5772.34   5772.34       .00   5774.19      1.84       .07       .13   5773.70
     675.0        .0     675.0        .0        .0      62.0        .0       4.5       1.2   5773.70
       .08       .00     10.89       .00      .000      .013      .000      .000   5768.70   1050.00
   .002606       32.       32.       32.        20        11         0       .00     17.00   1067.00


CCHV=     .300 CEHV=     .500
#SECNO 5615.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     5780.00 ELREA=     5780.00

       FEMA SECTION L - OUTFALL DETENTION POND BOX CULVERT - DOUBLE 8'x 6'
  5615.000      3.65   5772.95   5772.95       .00   5774.79      1.84       .07       .00   5780.10
     675.0        .0     675.0        .0        .0      62.1        .0       4.5       1.2   5780.10
       .08       .00     10.87       .00      .000      .013      .000      .000   5769.30   1000.00
   .002590       26.       26.       26.        20         5         0       .00     17.00   1017.00



SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS    5772.32 , NOT    5772.95 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.60      2.60       .00     17.00      1.00     96.00       .01   5769.80   5769.30

#SECNO 5675.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.49

CLASS B LOW FLOW
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3420 BRIDGE W.S.= 5773.36 BRIDGE VELOCITY= 11.06 CALCULATED CHANNEL AREA= 57.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
.00	5775.67	.00	0.	675.	96.	96.	5775.80	5779.40	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 5779.40 ELREA= 5779.40

FEMA SECTION M - ENTRANCE DETENTION POND BOX CULVERT - DOUBLE 8'x 6'

5675.000	4.81	5774.61	.00	.00	5775.67	1.06	.88	.00	5779.40
675.0	.0	675.0	.0	.0	81.7	.0	4.6	1.2	5779.40
.08	.00	8.26	.00	.000	.013	.000	.000	5769.80	1030.00
.001170	60.	60.	60.	0	0	0	.00	17.00	1047.00

CCHV= .100 CEHV= .300
*SECNO 5702.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 7.49

FEMA SECTION N - DETENTION POND BOX CULVERT HEADWALL

5702.000	5.76	5775.76	.00	.00	5775.77	.02	.00	.10	5770.00
675.0	255.5	231.8	187.7	615.4	138.3	439.7	5.0	1.3	5770.00
.09	.42	1.68	.43	.040	.013	.040	.000	5770.00	1053.59
.000021	27.	27.	27.	2	0	0	.00	334.02	1387.61

*SECNO 6000.000
FEMA SECTION O

6000.000	4.38	5775.78	.00	.00	5775.78	.00	.01	.00	5776.00
790.0	.0	790.0	.0	.0	1830.1	.0	15.3	4.5	5776.00
.28	.00	.43	.00	.000	.040	.000	.000	5771.40	1056.65
.000030	298.	298.	298.	2	0	0	.00	585.05	1641.70

*SECNO 6300.000

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   SECND     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .25

       FEMA SECTION P
 6300.000      2.69   5775.79       .00       .00   5775.81       .02       .02       .01   5776.00
    790.0        .0     790.0        .0        .0     672.8        .0      23.9       7.8   5776.00
      .35       .00      1.17       .00      .000      .040      .000      .000   5773.10   1111.18
  .000483      230.      300.      390.         2         0         0       .00    390.06   1501.24


*SECND 6607.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION Q - END DROP STRUCTURE RIPRAP APRON
 6607.000      1.51   5777.71   5777.71       .00   5778.25       .55       .43       .16   5778.00
    745.0        .0     745.0        .0        .0     125.6        .0      26.8       9.6   5778.00
      .37       .00      5.93       .00      .000      .040      .000      .000   5776.20   1266.54
  .023177      307.      307.      307.        20        11         0       .00    116.91   1383.46


*SECND 6636.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       DROP STRUCTURE BOTTOM
 6636.000      1.79   5778.69   5778.69       .00   5779.49       .80       .63       .08   5785.90
    745.0        .0     745.0        .0        .0     103.8        .0      26.8       9.7   5785.90
      .37       .00      7.17       .00      .000      .040      .000      .000   5776.90   1132.04
  .020517       29.       29.       29.        20        11         0       .00     65.92   1197.96


*SECND 6637.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       DROP STRUCTURE CREST (4' VERTICAL DROP)
 6637.000      3.18   5782.08   5782.08       .00   5782.93       .85       .02       .02   5785.90
    745.0        .0     745.0        .0        .0     100.6        .0      26.8       9.7   5785.90
      .37       .00      7.40       .00      .000      .040      .000      .000   5778.90   1135.28
  .020098        1.        1.        1.        20        14         0       .00     59.45   1194.72
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 6817.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.00

       END DROP STRUCTURE RIPRAP APRON
  6817.000      2.68   5784.28       .00       .00   5784.60       .31      1.61       .05   5790.60
     745.0        .0     745.0        .0        .0     165.6        .0      27.4      10.0   5790.60
       .38       .00      4.50       .00      .000      .040      .000      .000   5781.60   1113.11
   .005040      210.     180.      155.         2         0         0       .00     73.79   1186.89


*SECNO 6846.000
       DROP STRUCTURE BOTTOM
  6846.000      2.74   5784.44       .00       .00   5784.74       .30       .14       .00   5790.70
     745.0        .0     745.0        .0        .0     170.6        .0      27.5      10.0   5790.70
       .38       .00      4.37       .00      .000      .040      .000      .000   5781.70   1112.81
   .004618       29.      29.       29.         2         0         0       .00     74.38   1187.19


*SECNO 6847.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       DROP STRUCTURE CREST (4' VERTICAL DROP)
  6847.000      3.16   5786.86   5786.86       .00   5787.73       .87       .01       .17   5790.70
     745.0        .0     745.0        .0        .0      99.6        .0      27.5      10.0   5790.70
       .38       .00      7.48       .00      .000      .040      .000      .000   5783.70   1120.34
   .020705        1.       1.        1.        20        11         0       .00     59.32   1179.66


*SECNO 6992.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.89
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      END RIPRAP APRON
 6992.000     2.58   5788.88      .00      .00   5789.22      .34     1.43      .05   5795.30
    745.0       .0    745.0       .0       .0    158.3       .0     27.9     10.2   5795.30
      .39      .00     4.71      .00     .000     .040     .000     .000   5786.30   1108.55
  .005771     145.     145.     145.        3        0        0      .00    72.89   1181.45


#SECNO 7032.000
      BEGIN RIPRAP APRON/DROP STURCTURE BOTTOM
 7032.000     2.68   5789.08      .00      .00   5789.43      .36      .21      .00   5786.40
    745.0     44.5     665.6     34.9     14.5    133.8     11.5     28.1     10.3   5786.40
      .39     3.07      4.97     3.04     .040     .040     .040     .000   5786.40   1109.17
  .004822      40.       40.      40.        2        0        0      .00    69.40   1178.58


#SECNO 7072.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     5806.00 ELREA=     5806.00

      FEMA SECTION R - DROP STRUCTURE CREST (5.4' SLOPING DROP)/144" CMP STORM
      SEWER OUTFALL SOUTH OF WAGEMAN DRIVE
 7072.000     6.44   5798.24   5798.24      .00   5800.70     2.46      .14      .63   5806.00
    745.0       .0    745.0       .0       .0     59.1       .0     28.2     10.3   5806.00
      .39      .00    12.60      .00     .000     .013     .000     .000   5791.80   1000.00
  .002766      40.       40.      40.       20       17        0      .00    12.00   1012.00


#SECNO 8450.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.04

      FEMA SECTION W - UPSTREAM OF BRADLEY ROAD BOX CULVERT - DOUBLE 10' x 6'
 8450.000     5.20   5820.40      .00      .00   5820.41      .01      .00      .25   5816.90
    685.0     87.6     524.4     73.0    118.9    642.4     79.0     28.2     10.3   5816.90
      .39      .74       .82      .92     .050     .080     .050     .000   5815.20   1161.98
  .000253       0.        0.       0.        0        0        0      .00   249.03   1411.01


#SECNO 8875.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .08

      FEMA SECTION X
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
8875.000	2.05	5820.55	.00	.00	5820.80	.25	.32	.07	5819.60
590.0	71.9	490.3	27.8	18.4	119.9	7.5	33.0	12.1	5819.60
.42	3.91	4.09	3.71	.050	.080	.050	.000	5818.50	1368.13
.028257	400.	425.	435.	4	0	0	.00	122.36	1490.49

*SECNO 9300.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.55

FEMA SECTION Y

9300.000	3.77	5827.97	.00	.00	5828.16	.19	7.35	.01	5827.20
590.0	2.5	577.3	10.2	1.5	163.6	6.0	34.5	13.2	5827.20
.45	1.69	3.53	1.71	.050	.080	.050	.000	5824.20	1365.13
.011745	390.	425.	445.	5	0	0	.00	89.33	1454.46

*SECNO 9700.000

FEMA SECTION Z

9700.000	3.14	5832.34	.00	.00	5832.47	.13	4.30	.01	5832.30
420.0	.0	420.0	.0	.0	143.7	.0	35.9	13.9	5832.30
.49	.03	2.92	.03	.050	.080	.050	.000	5829.20	1261.66
.009578	470.	400.	355.	3	0	0	.00	70.60	1332.26

*SECNO 10150.000

FEMA SECTION AA

10150.000	3.13	5837.73	.00	.00	5837.91	.18	5.42	.01	5837.30
420.0	2.4	416.4	1.3	1.8	123.2	.9	37.3	14.7	5837.30
.53	1.34	3.38	1.34	.050	.080	.050	.000	5834.60	1244.91
.015627	505.	450.	405.	2	0	0	.00	82.45	1327.36

*SECNO 10625.000

FEMA SECTION AB - DOWNSTREAM OF IRRIGATION CANAL NO. 4

10625.000	2.43	5844.43	.00	.00	5844.56	.13	6.64	.00	5843.40
420.0	26.2	360.2	33.6	10.3	120.5	12.9	38.8	15.7	5843.40
.57	2.55	2.99	2.60	.050	.080	.050	.000	5842.00	1225.79
.012573	500.	475.	465.	4	0	0	.00	107.37	1333.16

*SECNO 10675.000

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION AC - UPSTREAM OF IRRIGATION CANAL NO. 4
 10675.000      .33   5854.33   5854.33      .00   5854.50      .17      1.14      .01   5854.00
     420.0    162.4      88.8     168.8     49.1      26.7     51.2      39.0     16.0   5854.00
       .58     3.31      3.32      3.30     .050      .050     .050      .000   5854.00   1090.83
   .053960      50.       50.       50.       20        17        0       .00    385.85   1476.68


*SECNO 10900.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  5.68

       FEMA SECTION AD
 10900.000     1.57   5855.57      .00      .00   5855.61      .04      1.09      .01   5854.00
     420.0     28.7     205.4    185.9     18.7     125.3    120.2      40.0     17.5   5854.00
       .62     1.53      1.64     1.55     .050      .050     .050      .000   5854.00   1076.08
   .001672     225.      225.      225.        8         0        0       .00    182.41   1258.50


*SECNO 11350.000
       FEMA SECTION AE
 11350.000     2.28   5856.28      .00      .00   5856.33      .05       .73      .00   5854.60
     420.0     22.8     382.1     15.2     20.9     201.0     14.1      42.7     19.2   5854.60
       .69     1.09      1.90     1.08     .050      .050     .050      .000   5854.00   1032.88
   .001402     420.      450.      560.        3         0        0       .00    129.25   1162.12


*SECNO 11825.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .46

       FEMA SECTION AF
 11825.000     2.37   5857.47      .00      .00   5857.62      .15      1.26      .03   5857.10
     420.0      1.0     418.2       .8      1.3     132.6      1.0      44.7     20.5   5857.10
       .73      .79      3.15      .79     .050      .050     .050      .000   5855.10   1060.05
   .006725     470.      475.      480.        2         0        0       .00    102.27   1162.32


*SECNO 12275.000
       FEMA SECTION AG
 12275.000     3.08   5860.48      .00      .00   5860.64      .15      3.01      .00   5860.70
     420.0       .0     420.0       .0       .0     134.6       .0      46.1     21.5   5860.70
       .77      .00      3.12      .00     .000      .050     .000      .000   5857.40   1087.66
   .006672     460.      450.      400.        3         0        0       .00     92.14   1179.80
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   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


*SECNO 12750.000
       FEMA SECTION AH
 12750.000      3.07   5862.87        .00        .00   5863.00        .13       2.36        .00   5864.20
     420.0        .0     420.0        .0        .0     146.6        .0       47.7       22.4   5864.20
       .82       .00      2.87        .00       .000      .050       .000       .000    5859.80   1278.45
   .003847      470.      475.      530.          2         0          0        .00      75.29   1353.74


*SECNO 13200.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .21

       FEMA SECTION AI
 13200.000      1.68   5866.38        .00        .00   5866.62        .24       3.59        .03   5866.60
     310.0        .0     310.0        .0        .0      79.1        .0       48.8       23.2   5866.60
       .85       .00      3.92        .00       .000      .080       .000       .000    5864.70   1248.03
   .048731      475.      450.      430.          2         0          0        .00      84.51   1332.54


*SECNO 13625.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.73

       FEMA SECTION AJ
 13625.000      1.91   5872.51        .00        .00   5872.57        .06       5.93        .02   5871.50
     310.0      33.2     227.3      49.6       17.7     117.4       26.4       50.0       24.4   5871.50
       .91      1.87      1.94      1.88       .050      .080       .050       .000    5870.60   1255.94
   .006518      490.      425.      375.          6         0          0        .00     152.00   1407.94


*SECNO 14075.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION AK
 14075.000      1.14   5879.84   5879.84        .00   5880.13        .30       7.23        .07   5879.50
     310.0       7.8     295.0       7.2       2.9      66.3       2.7       51.2       25.8   5879.50
       .94      2.66      4.45      2.66       .050      .080       .050       .000    5878.70   1313.51
   .086381      430.      450.      470.          3        14          0        .00     123.64   1437.15


*SECNO 14500.000
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.07

       FEMA SECTION AL
 14500.000      1.14   5884.74       .00       .00   5884.75       .01      4.59       .03   5883.80
    135.0      28.9      49.8      56.3      31.7      62.6      52.4      52.3      27.3   5883.80
     1.07       .91       .80      1.07      .050      .080      .050      .000   5883.60   1269.68
  .001736      410.      425.      445.         3         0         0       .00    184.62   1454.30


#SECNO 14950.000

3235 SLOPE TOO STEEP, EXCEEDS        .10

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION AM
 14950.000       .80   5891.20   5891.20       .00   5891.42       .21      2.39       .06   5891.10
    135.0        .3     134.2        .5        .2      36.3        .4      53.2      28.7   5891.10
     1.10      1.39      3.70      1.39      .050      .080      .050      .000   5890.40   1171.84
  .113693      500.      450.      350.        20        19         0       .00     91.56   1263.40


#SECNO 15400.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  4.09

       FEMA SECTION AN
 15400.000      1.28   5899.28       .00       .00   5899.31       .03      7.88       .02   5898.70
    135.0      14.4     110.8       9.8      13.2      75.4       9.0      53.9      29.9   5898.70
     1.19      1.09      1.47      1.09      .050      .080      .050      .000   5898.00   1268.34
  .006780      405.      450.      510.         5         0         0       .00    155.19   1423.53


#SECNO 15800.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION AO
 15800.000       .79   5907.59   5907.59       .00   5907.80       .21      5.21       .05   5907.20
    135.0      13.0     114.6       7.5       7.0      29.6       4.0      54.5      31.2   5907.20
     1.22      1.85      3.87      1.85      .050      .050      .050      .000   5906.80   1282.21
  .034160      420.      400.      390.        20        14         0       .00    106.38   1388.59
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

#SECNO 16200.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.56

FEMA SECTION AP

16200.000	.93	5916.03	.00	.00	5916.14	.11	8.33	.01	5915.50
135.0	15.1	106.2	13.8	9.8	36.9	9.0	55.0	32.2	5915.50
1.26	1.54	2.88	1.53	.050	.050	.050	.000	5915.10	1269.32
.014036	390.	400.	410.	6	0	0	.00	116.83	1386.16

#SECNO 16600.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

FEMA SECTION AQ - SOUTH OF DRENNAN ROAD

16600.000	1.39	5925.69	5925.69	.00	5926.04	.35	9.02	.07	5926.00
135.0	.0	135.0	.0	.0	28.3	.0	55.3	32.9	5926.00
1.29	.00	4.77	.00	.000	.050	.000	.000	5924.30	230.51
.042005	385.	400.	420.	3	14	0	.00	40.82	271.33

TW SPLIT FLOW WEST ALONG GRAND BOULEVARD BETWEEN STA. 31+14 AND STA. 31+42

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	.00	.00	.00	2	5735.083	5736.950	3114.000	3142.000

TW SPLIT FLOW WEST ALONG GRAND BOULEVARD BETWEEN STA. 31+42 AND STA. 32+50

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	.00	.00	.00	2	5736.950	5738.114	3142.000	3250.000

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+15 AND STA. 50+56

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	.00	.00	.00	2	5760.701	5762.153	5015.000	5056.000

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+56 AND STA. 50+99

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	.00	.00	.00	2	5762.153	5763.260	5056.000	5099.000

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+99 AND STA. 51+33

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	.00	.00	.00	2	5763.260	5763.081	5099.000	5133.000

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+15 AND STA. 50+56

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	.00	.00	.00	2	5760.701	5762.153	5015.000	5056.000

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+56 AND STA. 50+99

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	.00	.00	.00	2	5762.153	5763.260	5056.000	5099.000

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+99 AND STA. 51+33

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
.00	.00	.00	.00	.00	.00	2	5763.260	5763.081	5099.000	5133.000

```
T1 WINDMILL GULCH DRAINAGE BASIN PLANNING STUDY - WILSON & COMPANY   89-820
T2 144" CMP STORM SEWER ENTRANCE SOUTH OF GRAND BOULEVARD TO DRENNAN ROAD
T3      WINDMILL GULCH EXISTING CONDITION 100-YEAR 2-HOUR           WGEXIST.DAT

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0        3        0        0        0        0        0        0   5734.75       0

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     15        0       -1        0        0        0        0        0        0        0
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 2



CCHV=     .100 CEHV=     .300
*SECNO 2864.000
       FEMA SECTION A - 144" CMP STORM SEWER ENTRANCE SOUTH OF GRAND BOULEVARD
  2864.000      8.15   5734.75       .00   5734.75   5735.54       .79       .00       .00   5734.30
    1167.4       1.8    1163.2       2.4       5.9     163.0       7.7        .0        .0   5734.30
       .00       .31      7.14       .31      .040      .013      .040      .000   5726.60   1313.54
   .000509        0.        0.        0.         0         0         0       .00     80.85   1394.40


*SECNO 2893.000
       STEP IN CHANNEL WALL (0.5' STEP)
  2893.000      7.93   5734.73       .00       .00   5735.57       .84       .02       .02   5734.30
    1167.4        .4    1166.1        .9       1.4     158.6       2.8        .1        .0   5734.30
       .00       .31      7.35       .31      .040      .013      .040      .000   5726.80   1173.55
   .000552       29.       29.       29.         2         0         0       .00     39.36   1212.91


*SECNO 2997.000
       GRADE BREAK IN CHANNEL WALL
  2997.000      7.76   5734.76       .00       .00   5735.64       .88       .06       .01   5735.00
    1167.4        .0    1167.4        .0        .0     155.3        .0        .5        .1   5735.00
       .00       .00      7.52       .00      .000      .013      .000      .000   5727.00   1370.00
   .000605      104.      104.      104.         2         0         0       .00     20.00   1390.00


CCHV=     .300 CEHV=     .500
*SECNO 3017.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     5737.10 ELREA=     5737.10

       FEMA SECTION B - OUTFALL GRAND BOULEVARD BOX CULVERT - DOUBLE 9' x 7'
  3017.000      7.72   5734.72       .00       .00   5735.71       .98       .01       .05   5737.10
    1167.4        .0    1167.4        .0        .0     146.8        .0        .6        .1   5737.10
       .01       .00      7.95       .00      .000      .013      .000      .000   5727.00   1530.00
   .000701       20.       20.       20.         2         0         0       .00     19.00   1549.00
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.60	2.60	.00	19.00	1.00	126.00	.01	5727.10	5727.00

*SECNO 3067.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
5736.48	5735.71	.19	0.	1058.	126.	126.	5734.10	5738.00	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 5738.00 ELREA= 5738.00

FEMA SECTION C - ENTRANCE GRAND BOULEVARD BOX CULVERT - DOUBLE 9'x 7'

3067.000	8.75	5735.85	.00	.00	5736.48	.63	.77	.00	5738.00
1057.7	.0	1057.7	.0	.0	166.3	.0	.7	.1	5738.00
.01	.00	6.36	.00	.000	.013	.000	.000	5727.10	1015.00
.000410	50.	50.	50.	2	0	0	.00	19.00	1034.00

CCHV= .100 CEHV= .300
*SECNO 3071.000
DROP STRUCTURE END SILL

3071.000	8.75	5735.85	.00	.00	5736.48	.63	.00	.00	5737.90
1057.7	.0	1057.7	.0	.0	166.2	.0	.8	.1	5737.90
.01	.00	6.36	.00	.000	.013	.000	.000	5727.10	1015.00
.000410	4.	4.	4.	0	0	0	.00	19.00	1034.00

*SECNO 3098.000
DROP STRUCTURE BOTTOM

3098.000	8.76	5735.86	.00	.00	5736.49	.63	.01	.00	5737.20
1057.7	.0	1057.7	.0	.0	166.3	.0	.9	.2	5737.20
.01	.00	6.36	.00	.000	.013	.000	.000	5727.10	1015.00
.000410	27.	27.	27.	1	0	0	.00	19.00	1034.00

*SECNO 3114.000

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       DROP STRUCTURE CREST (8.5' SLOPING DROP)/END CHANNEL TRANSITION
  3114.000      4.56   5736.16   5736.16       .00   5738.47      2.31       .01       .50   5736.80
    1057.7        .0    1057.7        .0        .0      86.7        .0        .9        .2   5736.80
       .01       .00     12.20       .00      .000      .013      .000      .000   5731.60   1015.00
   .002537       16.       16.       16.        20        11         0       .00     19.00   1034.00


*SECNO 3142.000
3280 CROSS SECTION   3142.00 EXTENDED       .49 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION D - BEGIN CHANNEL TRANSITION
  3142.000      6.29   5738.29   5738.29       .00   5740.27      1.97       .06       .03   5737.90
    1060.7        .6    1046.6      13.6       1.2      92.2      11.1       1.0        .2   5737.30
       .01       .51     11.35      1.22      .040      .013      .040      .000   5732.00   1009.12
   .001674       28.       28.       28.        20        11         0       .00     40.88   1050.00


*SECNO 3250.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
  3250.000      6.41   5739.51   5739.51       .00   5741.63      2.12       .19       .05   5739.10
    1080.3        .7    1078.2       1.4       1.2      92.1       2.5       1.2        .3   5739.10
       .01       .55     11.71       .55      .040      .013      .040      .000   5733.10   1008.92
   .001840      105.      108.      110.        20         5         0       .00     38.24   1047.16


*SECNO 3625.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION E
  3625.000      6.37   5743.27   5743.27       .00   5745.43      2.16       .70       .01   5742.90
    1080.3       1.4    1078.7        .2       2.7      91.4        .3       2.0        .6   5742.90
       .02       .52     11.81       .52      .040      .013      .040      .000   5736.90   1025.25
   .001891      370.      375.      380.        20         5         0       .00     36.53   1061.78
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 4100.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION F
  4100.000      6.44   5750.14   5750.14       .00   5752.23      2.08       .87       .01   5749.70
    1080.3        .8    1077.3       2.2       1.5     92.9       3.4       3.1       1.0   5749.70
       .03       .57     11.60       .64      .040      .013      .040      .000   5743.70   1008.35
   .001787      475.      475.      475.        20         5         0       .00     43.11   1051.46


*SECNO 4575.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION G
  4575.000      5.97   5756.17   5756.17       .00   5758.32      2.14       .92       .02   5756.20
     980.2        .0     980.2        .0        .0     83.5        .0       4.1       1.4   5756.20
       .04       .00     11.74       .00      .000      .013      .000      .000   5750.20   1085.03
   .002102      485.      475.      465.        20        11         0       .00     19.95   1104.97


*SECNO 5015.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       END CHANNEL TRANSITION
  5015.000      5.96   5761.66   5761.66       .00   5763.82      2.15       .93       .00   5761.70
     980.2        .0     980.2        .0        .0     83.2        .0       4.9       1.6   5761.70
       .05       .00     11.78       .00      .000      .013      .000      .000   5755.70   1105.04
   .002120      435.      440.      445.        20         5         0       .00     19.92   1124.96


*SECNO 5043.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.47

       BEGIN CHANNEL TRANSITION
  5043.000      7.66   5763.46       .00       .00   5764.00       .54       .02       .16   5761.80
     980.2      26.8     927.9      25.4      38.8     153.1      41.6       5.0       1.6   5761.80
       .06       .69      6.06       .61      .040      .013      .040      .000   5755.80   1059.40
   .000349       28.       28.       28.         3         0         0       .00    123.20   1182.60
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   SECND     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


CCHV=     .300 CEHV=     .500
*SECND 5056.000
       FEMA SECTION H - OUTFALL ASPEN DR/HACKBERRY DR BOX CULVERT - 18'x 4'
  5056.000      7.42   5763.32       .00       .00   5764.14       .82       .01       .14   5761.90
    1028.3      18.0     989.9      20.4      23.8     133.6      28.3       5.1       1.7   5761.90
       .06       .76      7.41       .72      .040      .013      .040      .000   5755.90   1069.00
   .000573       13.       13.       13.         2         0         0       .00     99.83   1168.83



SPECIAL BRIDGE

SB  XK        XKOR      CDFG      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      .00      1.60      2.60       .00     18.00       .00     72.00       .02   5756.80   5755.90

*SECND 5099.000
PRESSURE AND WEIR FLOW,  Weir Submergence Based on TRAPEZOIDAL Shape


 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD     WEIRLN
                                                             AREA
   5769.61   5765.04      .00      555.      596.       72.       72.     5760.80   5762.80      134.


       FEMA SECTION I - ENTRANCE ASPEN DR/HACKBERRY DR BOX CULVERT - 18'x 4'
  5099.000      7.01   5763.81       .00       .00   5765.03      1.22       .88       .00   5762.80
    1145.1       8.4    1126.5      10.2      10.6     126.3      14.6       5.2       1.7   5762.80
       .06       .80      8.92       .70      .040      .013      .040      .000   5756.80   1113.57
   .000897       43.       43.       43.         3         0         0       .00     76.62   1190.19


CCHV=     .100 CEHV=     .300
*SECND 5105.000
       END CHANNEL TRANSITION
  5105.000      7.10   5764.10       .00       .00   5765.06       .96       .00       .03   5763.00
    1145.1       9.0    1124.6      11.5      12.5     142.0      17.5       5.3       1.8   5763.00
       .06       .72      7.92       .66      .040      .013      .040      .000   5757.00   1111.76
   .000658        6.        6.        6.         2         0         0       .00     80.80   1192.55


*SECND 5133.000

3301 HV CHANGED MORE THAN HVINS

3385 20 TRIALS ATTEMPTED WSEL,CWSEL
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
BEGIN CHANNEL TRANSITION

5133.000	6.64	5764.84	5764.84	.00	5767.08	2.24	.03	.39	5764.20
1170.0	3.3	1165.2	1.5	4.1	96.8	2.0	5.4	1.8	5764.20
.06	.81	12.04	.74	.040	.013	.040	.000	5758.20	1141.66
.001824	28.	28.	28.	20	11	0	.00	39.72	1181.38

*SECNO 5335.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION J - END CHANNEL TRANSITION

5335.000	6.76	5769.46	5769.46	.00	5771.57	2.11	.35	.01	5768.70
1170.0	5.3	1160.2	4.4	6.2	99.2	5.6	5.8	2.0	5768.70
.06	.87	11.70	.79	.040	.013	.040	.000	5762.70	1096.87
.001664	200.	202.	205.	20	8	0	.00	52.76	1149.62

*SECNO 5453.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION K - BEGIN CHANNEL TRANSITION

5453.000	5.49	5770.79	5770.79	.00	5772.56	1.77	.20	.03	5770.30
1170.0	1.4	1167.3	1.3	2.4	109.2	2.2	6.2	2.1	5770.30
.07	.59	10.69	.59	.040	.013	.040	.000	5765.30	1050.20
.001656	118.	118.	118.	20	15	0	.00	47.75	1097.94

*SECNO 5557.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
END CHANNEL TRANSITION

5557.000	5.39	5773.29	5773.29	.00	5775.17	1.88	.18	.03	5772.90
1170.0	.2	1169.6	.2	.3	106.3	.4	6.4	2.2	5772.90
.07	.52	11.01	.53	.040	.013	.040	.000	5767.90	1053.23
.001821	104.	104.	104.	20	5	0	.00	32.89	1086.12

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 5589.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
        BEGIN CHANNEL TRANSITION
  5589.000      5.28   5773.98   5773.98       .00   5776.62      2.64       .07       .23   5773.70
    1170.0        .0    1169.9        .1        .1     89.8        .1       6.5       2.3   5773.70
       .07       .02     13.03       .50      .040      .013      .040      .000   5768.70   1049.39
   .002619       32.       32.       32.        20         8         0       .00     18.59   1067.98


CCHV=     .300 CEHV=     .500
*SECNO 5615.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     5780.00 ELREA=     5780.00

        FEMA SECTION L - OUTFALL DETENTION POND BOX CULVERT - DOUBLE 8'x 6'
  5615.000      5.26   5774.56   5774.56       .00   5777.22      2.66       .07       .01   5780.10
    1170.0        .0    1170.0        .0        .0     89.4        .0       6.5       2.3   5780.10
       .07       .00     13.09       .00      .000      .013      .000      .000   5769.30   1000.00
   .002727       26.       26.       26.        20         5         0       .00     17.00   1017.00


SPECIAL BRIDGE

5227 DOWNSTREAM ELEV IS    5773.66 , NOT    5774.56 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.60      2.60       .00    17.00      1.00      96.00       .01   5769.80   5769.30

*SECNO 5675.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.47
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CLASS B LOW FLOW

3420 BRIDGE W.S.= 5775.04 BRIDGE VELOCITY= 13.28 CALCULATED CHANNEL AREA= 84.

EGPRS	EGLWC	H3	QWEIR	QLOW	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
5778.25	5778.26	.00	0.	1170.	96.	96.	5775.80	5779.40	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 5779.40 ELREA= 5779.40

FEMA SECTION M - ENTRANCE DETENTION POND BOX CULVERT - DOUBLE 8'x 6'

5675.000	6.93	5776.73	.00	.00	5778.26	1.53	1.04	.00	5779.40
1170.0	.0	1170.0	.0	.0	117.8	.0	6.7	2.3	5779.40
.07	.00	9.93	.00	.000	.013	.000	.000	5769.80	1030.00
.001264	60.	60.	60.	0	0	0	.00	17.00	1047.00

CCHV= .100 CEHV= .300
*SECNO 5702.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 10.19

FEMA SECTION N - DETENTION POND BOX CULVERT HEADWALL

5702.000	8.40	5778.40	.00	.00	5778.42	.01	.00	.15	5770.00
1170.0	489.5	332.6	347.9	1130.2	201.7	806.7	7.4	2.4	5770.00
.08	.43	1.65	.43	.040	.013	.040	.000	5770.00	1034.97
.000012	27.	27.	27.	2	0	0	.00	379.08	1414.05

*SECNO 6000.000
FEMA SECTION O

6000.000	7.02	5778.42	.00	.00	5778.42	.00	.00	.00	5776.00
1405.0	2.9	1400.0	2.1	20.1	3386.3	14.6	26.4	5.8	5776.00
.28	.15	.41	.14	.040	.040	.040	.000	5771.40	1038.37
.000012	298.	298.	298.	2	0	0	.00	618.72	1657.09

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 6300.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .42

       FEMA SECTION P
  6300.000      5.32   5778.42       .00       .00   5778.43       .01       .01       .00   5776.00
    1405.0       5.9    1395.0       4.1      17.1    1735.1      12.2      44.3       9.4   5776.00
       .39       .34       .80       .34      .040      .040      .040      .000   5773.10   1090.88
   .000067      230.      300.      390.         2         0         0       .00    429.21   1520.09


*SECNO 6607.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION Q - END DROP STRUCTURE RIPRAP APRON
  6607.000      2.06   5778.26   5778.26       .00   5779.01       .75       .07       .22   5778.00
    1365.0        .6    1364.0        .5        .4     195.7        .3      51.2      11.4   5778.00
       .40      1.36      6.97      1.35      .040      .040      .040      .000   5776.20   1256.76
   .020421      307.      307.      307.        20        18         0       .00    135.83   1392.59


*SECNO 6636.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       DROP STRUCTURE BOTTOM
  6636.000      2.62   5779.52   5779.52       .00   5780.63      1.11       .56       .11   5785.90
    1365.0        .0    1365.0        .0        .0     161.5        .0      51.3      11.5   5785.90
       .40       .00      8.45       .00      .000      .040      .000      .000   5776.90   1128.36
   .018249       29.       29.       29.        20        11         0       .00     73.29   1201.64


*SECNO 6637.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       DROP STRUCTURE CREST (4' VERTICAL DROP)
  6637.000      4.05   5782.95   5782.95       .00   5784.15      1.20       .02       .03   5785.90
    1365.0        .0    1365.0        .0        .0     155.4        .0      51.3      11.5   5785.90
       .40       .00      8.78       .00      .000      .040      .000      .000   5778.90   1131.79
   .018403        1.        1.        1.        20        14         0       .00     66.41   1198.21
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 6817.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.89

       END DROP STRUCTURE RIPRAP APRON
  6817.000      3.74   5785.34       .00       .00   5785.81       .47      1.58       .07   5790.60
    1365.0        .0    1365.0        .0        .0     248.7        .0      52.1      11.8   5790.60
       .41       .00      5.49       .00      .000      .040      .000      .000   5781.60   1108.40
   .005134      210.      180.      155.         2         0         0       .00     83.20   1191.60


*SECNO 6846.000
       DROP STRUCTURE BOTTOM
  6846.000      3.81   5785.51       .00       .00   5785.95       .45       .14       .00   5790.70
    1365.0        .0    1365.0        .0        .0     254.8        .0      52.3      11.9   5790.70
       .41       .00      5.36       .00      .000      .040      .000      .000   5781.70   1108.08
   .004786       29.       29.       29.         2         0         0       .00     83.85   1191.92


*SECNO 6847.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       DROP STRUCTURE CREST (4' VERTICAL DROP)
  6847.000      4.05   5787.75   5787.75       .00   5788.95      1.20       .01       .23   5790.70
    1365.0        .0    1365.0        .0        .0     155.1        .0      52.3      11.9   5790.70
       .41       .00      8.80       .00      .000      .040      .000      .000   5783.70   1116.81
   .018507        1.        1.        1.        20         8         0       .00     66.38   1183.19


*SECNO 6992.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.77
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      END RIPRAP APRON
 6992.000     3.60   5789.90      .00      .00   5790.42      .51     1.40      .07   5795.30
   1365.0       .0    1365.0       .0       .0    237.2       .0     53.0     12.1   5795.30
      .42      .00      5.76      .00     .000     .040     .000     .000   5786.30   1104.02
  .005895     145.     145.     145.        2        0        0      .00    81.95   1185.98


*SECNO 7032.000
      BEGIN RIPRAP APRON/DROP STURCTURE BOTTOM
 7032.000     3.68   5790.08      .00      .00   5790.66      .58      .22      .02   5786.40
   1365.0    107.8    1172.8     84.5     27.4    184.0     21.7     53.2     12.2   5786.40
      .42     3.94      6.37     3.89     .040     .040     .040     .000   5786.40   1105.12
  .005180      40.       40.      40.        2        0        0      .00    76.68   1181.80


*SECNO 7072.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     5806.00 ELREA=     5806.00

      FEMA SECTION R - DROP STRUCTURE CREST (5.4' SLOPING DROP)/144" CMP STORM
      SEWER OUTFALL SOUTH OF WAGEMAN DRIVE
 7072.000     8.89   5800.69   5800.69      .00   5804.38     3.69      .16      .93   5806.00
   1365.0       .0    1365.0       .0       .0     88.6       .0     53.3     12.2   5806.00
      .42      .00     15.41      .00     .000     .013     .000     .000   5791.80   1000.00
  .003260      40.       40.      40.       20       17        0      .00    12.00   1012.00


*SECNO 8450.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  9.77

      FEMA SECTION W - UPSTREAM OF BRADLEY ROAD BOX CULVERT - DOUBLE 10' x 6'
 8450.000    10.50   5825.70      .00      .00   5825.71      .00      .00      .37   5816.90
   1315.0    398.8     666.9    249.3    734.4    1384.3    471.6     53.3     12.2   5816.90
      .42      .54       .48      .53     .050      .080     .050     .000   5815.20   1080.24
  .000032       0.        0.       0.        0        0        0      .00   406.02   1486.26


*SECNO 8875.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .37

      FEMA SECTION X
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
8875.000	7.22	5825.72	.00	.00	5825.74	.02	.03	.00	5819.60
1375.0	556.9	553.3	264.8	489.7	533.8	224.8	71.8	15.7	5819.60
.53	1.14	1.04	1.18	.050	.080	.050	.000	5818.50	1231.92
.000248	400.	425.	435.	2	0	0	.00	315.31	1547.23

#SECNO 9300.000

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

FEMA SECTION Y

9300.000	3.82	5828.02	5828.02	.00	5829.00	.98	.37	.29	5827.20
1375.0	6.8	1340.9	27.3	1.7	167.0	6.7	78.6	17.6	5827.20
.54	4.00	8.03	4.06	.050	.080	.050	.000	5824.20	1364.53
.059228	390.	425.	445.	20	11	0	.00	90.68	1455.21

#SECNO 9700.000

3301 HV CHANGED MORE THAN HVINS

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.67

FEMA SECTION Z

9700.000	5.19	5834.40	.00	.00	5834.56	.16	5.47	.08	5832.30
1045.0	53.5	951.1	40.3	25.1	288.4	18.5	80.9	18.6	5832.30
.57	2.13	3.30	2.18	.050	.080	.050	.000	5829.20	1225.89
.004812	470.	400.	355.	4	0	0	.00	130.18	1356.06

#SECNO 10150.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .42

FEMA SECTION AA

10150.000	3.87	5838.47	.00	.00	5838.93	.46	4.28	.09	5837.30
1045.0	49.8	969.7	25.5	13.3	174.3	6.5	83.6	19.9	5837.30
.60	3.74	5.56	3.92	.050	.080	.050	.000	5834.60	1228.38
.026706	505.	450.	405.	3	0	0	.00	105.11	1333.49

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 10625.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.72

FEMA SECTION AB - DOWNSTREAM OF IRRIGATION CANAL NO. 4

10625.000	3.62	5845.62	.00	.00	5845.83	.21	6.88	.03	5843.40
1045.0	141.2	737.2	166.6	38.1	204.5	42.5	86.3	21.2	5843.40
.63	3.70	3.60	3.92	.050	.080	.050	.000	5842.00	1213.78
.009024	500.	475.	465.	4	0	0	.00	128.39	1342.17

*SECNO 10675.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

FEMA SECTION AC - UPSTREAM OF IRRIGATION CANAL NO. 4

10675.000	.62	5854.62	5854.62	.00	5854.92	.30	.84	.03	5854.00
1045.0	404.0	219.2	421.7	92.2	49.6	96.8	86.6	21.5	5854.00
.64	4.38	4.42	4.36	.050	.050	.050	.000	5854.00	1087.25
.041923	50.	50.	50.	20	20	0	.00	395.14	1482.39

*SECNO 10900.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 4.02

FEMA SECTION AD

10900.000	2.33	5856.33	.00	.00	5856.43	.10	1.49	.02	5854.00
1045.0	73.6	495.5	475.9	30.1	186.4	192.2	88.2	23.0	5854.00
.66	2.44	2.66	2.48	.050	.050	.050	.000	5854.00	1073.90
.002588	225.	225.	225.	7	0	0	.00	196.06	1269.96

*SECNO 11350.000

FEMA SECTION AE

11350.000	3.38	5857.38	.00	.00	5857.50	.12	1.06	.01	5854.60
1045.0	100.4	875.4	69.2	50.8	299.7	36.3	77.6	24.9	5854.60
.71	1.98	2.92	1.91	.050	.050	.050	.000	5854.00	1024.65
.001944	420.	450.	560.	3	0	0	.00	145.70	1170.35

*SECNO 11825.000

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   SECND     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .64

       FEMA SECTION AF
 11825.000      3.58   5858.68       .00       .00   5858.91       .23      1.38       .03   5857.10
    1045.0      46.0     962.6      36.4      22.2     241.9      18.2      96.3      26.4   5857.10
       .74      2.07      3.98      2.00      .050      .050      .050      .000   5855.10   1041.47
   .004804      470.      475.      480.         2         0         0       .00    138.77   1180.24


*SECND 12275.000
       FEMA SECTION AG
 12275.000      3.99   5861.39       .00       .00   5861.71       .33      2.77       .03   5860.70
    1045.0       7.7    1034.2       3.1       5.8     224.5       2.4      98.9      27.8   5860.70
       .77      1.32      4.61      1.32      .050      .050      .050      .000   5857.40   1065.09
   .008205      460.      450.      400.         3         0         0       .00    123.78   1188.87


*SECND 12750.000
       FEMA SECTION AH
 12750.000      4.50   5864.30       .00       .00   5864.53       .23      2.81       .01   5864.20
    1045.0        .0    1045.0        .0        .0     271.5        .0     101.7      29.0   5864.20
       .81       .02      3.85       .02      .050      .050      .050      .000   5859.80   1266.10
   .004455      470.      475.      530.         2         0         0       .00    101.85   1367.95


*SECND 13200.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .39

       FEMA SECTION AI
 13200.000      2.92   5867.62       .00       .00   5867.88       .26      3.34       .01   5866.60
     825.0      23.0     791.5      10.5       8.9     190.0       4.1     104.1      30.1   5866.60
       .84      2.58      4.17      2.57      .050      .080      .050      .000   5864.70   1226.52
   .018597      475.      450.      430.         3         0         0       .00    115.49   1342.01


*SECND 13625.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.41

       FEMA SECTION AJ
 13625.000      2.58   5873.18       .00       .00   5873.32       .14      5.43       .01   5871.50
     825.0     128.6     505.3     191.1      40.8     170.4      60.3     106.4      31.6   5871.50
       .87      3.15      2.97      3.17      .050      .080      .050      .000   5870.60   1244.36
   .009310      490.      425.      375.         5         0         0       .00    180.14   1424.49
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 14075.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .50

       FEMA SECTION AK
 14075.000      1.83   5880.53       .00       .00   5880.84       .31      7.47       .05   5879.50
     825.0     128.0     592.2     104.7      32.0     129.3      23.9     108.8      33.6   5879.50
       .90      4.00      4.58      4.38      .050      .080      .050      .000   5878.70   1262.03
   .037486      430.      450.      470.         3         0         0       .00    201.77   1463.80


*SECNO 14500.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.75

       FEMA SECTION AL
 14500.000      1.67   5885.27       .00       .00   5885.31       .04      4.44       .03   5883.80
     370.0      96.8     117.4     155.8      68.6      94.3      89.7     110.9      35.6   5883.80
       .98      1.41      1.24      1.74      .050      .080      .050      .000   5883.60   1244.56
   .002457      410.      425.      445.         4         0         0       .00    216.35   1460.91


*SECNO 14950.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION AM
 14950.000      1.22   5891.62   5891.62       .00   5891.93       .31      3.05       .08   5891.10
     370.0      17.7     321.0      31.4       5.3      69.3       9.5     112.6      37.4   5891.10
      1.01      3.30      4.63      3.30      .050      .080      .050      .000   5890.40   1155.31
   .075171      500.      450.      350.        20        19         0       .00    137.46   1292.77


*SECNO 15400.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  3.14

       FEMA SECTION AN
 15400.000      1.79   5899.79       .00       .00   5899.85       .06      7.90       .03   5898.70
     370.0      78.0     238.7      53.3      45.0     115.4      30.8     114.0      39.2   5898.70
      1.07      1.73      2.07      1.73      .050      .080      .050      .000   5898.00   1230.61
   .007605      405.      450.      510.         3         0         0       .00    218.72   1449.33
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   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


*SECNO 15800.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION AO
 15800.000      1.21   5908.01   5908.01       .00   5908.29       .28       5.16       .06   5907.20
     370.0      79.9     244.2      46.0      30.1      50.6      17.3      115.4      41.0   5907.20
      1.10      2.65      4.82      2.65      .050      .050      .050       .000   5906.80   1244.59
   .025931      420.      400.      390.         4        17         0        .00    165.67   1410.25


*SECNO 16200.000
       FEMA SECTION AP
 16200.000      1.32   5916.42       .00       .00   5916.64       .22       8.34       .01   5915.50
     370.0      69.9     234.7      65.4      24.3      55.9      23.4      116.3      42.4   5915.50
      1.13      2.88      4.20      2.80      .050      .050      .050       .000   5915.10   1262.67
   .017176      390.      400.      410.         6         0         0        .00    134.90   1397.57


*SECNO 16600.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION AQ - SOUTH OF DRENNAN ROAD
 16600.000      2.05   5926.35   5926.35       .00   5926.93       .58       9.29       .11   5926.00
     370.0       1.3     367.6       1.1        .8      60.2        .6      117.0      43.3   5926.00
      1.15      1.70      6.11      1.70      .050      .050      .050       .000   5924.30    220.57
   .033053      385.      400.      420.         2        14         0        .00     57.98    278.54
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TW SPLIT FLOW WEST ALONG GRAND BOULEVARD BETWEEN STA. 31+14 AND STA. 31+42

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
3.06	3.05	.29	3.06	3.05	.29	10	5736.165	5738.292	3114.000	3142.000

TW SPLIT FLOW WEST ALONG GRAND BOULEVARD BETWEEN STA. 31+42 AND STA. 32+50

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
19.52	19.36	.82	22.58	22.41	.75	10	5738.292	5739.506	3142.000	3250.000

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+15 AND STA. 50+56

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
24.02	23.90	.48	46.60	46.31	.61	10	5761.662	5763.323	5015.000	5056.000

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+56 AND STA. 50+99

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
68.43	68.65	.32	115.03	114.96	.06	10	5763.323	5763.812	5056.000	5099.000

TW SPLIT FLOW EAST ALONG ASPEN DRIVE BETWEEN STA. 50+99 AND STA. 51+33

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
17.29	17.08	1.24	132.32	132.04	.21	10	5763.812	5764.838	5099.000	5133.000

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+15 AND STA. 50+56

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
24.02	23.90	.48	156.33	155.94	.25	10	5761.662	5763.323	5015.000	5056.000

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+56 AND STA. 50+99

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
68.43	68.65	.32	224.76	224.59	.08	10	5763.323	5763.812	5056.000	5099.000

TW SPLIT FLOW WEST ALONG HACKBERRY DRIVE BETWEEN STA. 50+99 AND STA. 51+33

ASQ	QCOMP	ERRAC	TASQ	TCQ	TABER	NITER	DSWS	USWS	DSSNO	USSNO
7.59	7.59	.11	232.36	232.18	.08	10	5763.812	5764.838	5099.000	5133.000

THIS RUN EXECUTED 02DEC91 16:27:15

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HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

WINDMILL GULCH EXISTIN

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	2864.000	.00	.00	.00	5726.60	705.00	5732.60	.00	5733.14	4.53	5.87	120.00	331.10
	2864.000	.00	.00	.00	5726.60	1167.42	5734.75	.00	5735.54	5.09	7.14	176.67	517.58
	2893.000	29.00	.00	.00	5726.80	705.00	5732.59	.00	5733.16	5.02	6.09	115.76	314.63
	2893.000	29.00	.00	.00	5726.80	1167.42	5734.73	.00	5735.57	5.52	7.35	162.76	497.04
	2997.000	104.00	.00	.00	5727.00	705.00	5732.62	.00	5733.23	5.47	6.27	112.35	301.51
	2997.000	104.00	.00	.00	5727.00	1167.42	5734.76	.00	5735.64	6.05	7.52	155.27	474.48
	3017.000	20.00	.00	.00	5727.00	705.00	5732.59	.00	5733.28	6.29	6.63	106.26	281.10
	3017.000	20.00	.00	.00	5727.00	1167.42	5734.72	.00	5735.71	7.01	7.95	146.78	440.96
	3067.000	50.00	5738.00	5734.10	5727.10	705.00	5732.72	.00	5733.40	6.21	6.60	106.75	282.95
	3067.000	50.00	5738.00	5734.10	5727.10	1057.69	5735.85	.00	5736.48	4.10	6.36	166.31	522.44
	3071.000	4.00	.00	.00	5727.10	705.00	5732.72	.00	5733.40	6.21	6.60	106.76	282.98
	3071.000	4.00	.00	.00	5727.10	1057.69	5735.85	.00	5736.48	4.10	6.36	166.21	522.04
	3098.000	27.00	.00	.00	5727.10	705.00	5732.75	.00	5733.42	6.12	6.57	107.28	284.94
	3098.000	27.00	.00	.00	5727.10	1057.69	5735.86	.00	5736.49	4.10	6.36	166.34	522.59
*	3114.000	16.00	.00	.00	5731.60	705.00	5735.08	5735.08	5736.85	24.95	10.65	66.18	141.14
*	3114.000	16.00	.00	.00	5731.60	1057.69	5736.16	5736.16	5738.47	25.37	12.20	86.72	210.00
*	3142.000	28.00	.00	.00	5732.00	705.00	5736.95	5736.95	5738.73	20.92	10.69	65.92	154.12
*	3142.000	28.00	.00	.00	5732.00	1060.74	5738.29	5738.29	5740.27	16.74	11.35	104.53	259.22
*	3250.000	108.00	.00	.00	5733.10	705.00	5738.11	5738.11	5739.93	21.21	10.81	65.24	153.08
*	3250.000	108.00	.00	.00	5733.10	1080.27	5739.51	5739.51	5741.63	18.40	11.71	95.80	251.83
*	3625.000	375.00	.00	.00	5736.90	705.00	5741.90	5741.90	5743.73	21.44	10.85	64.97	152.24
*	3625.000	375.00	.00	.00	5736.90	1080.27	5743.27	5743.27	5745.43	18.91	11.81	94.42	248.40

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	4100.000	475.00	.00	.00	5743.70	705.00	5748.70	5748.70	5750.53	21.41	10.85	65.01	152.35
*	4100.000	475.00	.00	.00	5743.70	1080.27	5750.14	5750.14	5752.23	17.87	11.60	97.74	255.54
*	4575.000	475.00	.00	.00	5750.20	705.00	5755.21	5755.21	5757.03	21.33	10.83	65.09	152.63
*	4575.000	475.00	.00	.00	5750.20	980.22	5756.17	5756.17	5758.32	21.02	11.74	83.48	213.78
*	5015.000	440.00	.00	.00	5755.70	705.00	5760.70	5760.70	5762.53	21.41	10.85	65.01	152.35
*	5015.000	440.00	.00	.00	5755.70	980.22	5761.66	5761.66	5763.82	21.20	11.78	83.23	212.90
*	5043.000	28.00	.00	.00	5755.80	705.00	5762.22	.00	5762.68	3.62	5.49	132.57	370.61
*	5043.000	28.00	.00	.00	5755.80	980.22	5763.46	.00	5764.00	3.49	6.06	233.43	525.02
	5056.000	13.00	.00	.00	5755.90	705.00	5762.15	.00	5762.76	5.15	6.26	113.80	310.69
	5056.000	13.00	.00	.00	5755.90	1028.26	5763.32	.00	5764.14	5.73	7.41	185.68	429.63
	5099.000	43.00	5762.80	5760.80	5756.80	675.00	5763.26	.00	5763.78	4.22	5.79	120.51	328.57
	5099.000	43.00	5762.80	5760.80	5756.80	1145.12	5763.81	.00	5765.03	8.97	8.92	151.46	382.44
	5105.000	6.00	.00	.00	5757.00	675.00	5763.35	.00	5763.79	3.43	5.31	129.58	364.59
	5105.000	6.00	.00	.00	5757.00	1145.12	5764.10	.00	5765.06	6.58	7.92	172.00	446.54
*	5133.000	28.00	.00	.00	5758.20	675.00	5763.08	5763.08	5764.87	21.51	10.74	62.85	145.53
*	5133.000	28.00	.00	.00	5758.20	1170.00	5764.84	5764.84	5767.08	18.24	12.04	102.89	273.98
*	5335.000	202.00	.00	.00	5762.70	675.00	5767.58	5767.58	5769.37	21.56	10.75	62.80	145.37
*	5335.000	202.00	.00	.00	5762.70	1170.00	5769.46	5769.46	5771.57	16.64	11.70	110.92	286.86
*	5453.000	118.00	.00	.00	5765.30	675.00	5769.41	5769.41	5770.82	19.69	9.55	70.68	152.11
*	5453.000	118.00	.00	.00	5765.30	1170.00	5770.79	5770.79	5772.56	16.56	10.69	113.81	287.52
*	5557.000	104.00	.00	.00	5767.90	675.00	5772.01	5772.01	5773.42	19.56	9.53	70.86	152.62
*	5557.000	104.00	.00	.00	5767.90	1170.00	5773.29	5773.29	5775.17	18.21	11.01	107.03	274.16
*	5589.000	32.00	.00	.00	5768.70	675.00	5772.34	5772.34	5774.19	26.06	10.89	61.96	132.22
*	5589.000	32.00	.00	.00	5768.70	1170.00	5773.98	5773.98	5776.62	26.19	13.03	90.00	228.62
*	5615.000	26.00	.00	.00	5769.30	675.00	5772.95	5772.95	5774.79	25.90	10.87	62.09	132.64
*	5615.000	26.00	.00	.00	5769.30	1170.00	5774.56	5774.56	5777.22	27.27	13.09	89.37	224.05
*	5675.000	60.00	5779.40	5775.80	5769.80	675.00	5774.61	.00	5775.67	11.70	8.26	81.71	197.32
*	5675.000	60.00	5779.40	5775.80	5769.80	1170.00	5776.73	.00	5778.26	12.64	9.93	117.84	329.06
*	5702.000	27.00	.00	.00	5770.00	675.00	5775.76	.00	5775.77	.21	1.68	1193.37	1478.88
*	5702.000	27.00	.00	.00	5770.00	1170.00	5778.40	.00	5778.42	.12	1.65	2138.60	3353.29
	6000.000	298.00	.00	.00	5771.40	790.00	5775.78	.00	5775.78	.30	.43	1830.07	1453.83
	6000.000	298.00	.00	.00	5771.40	1405.00	5778.42	.00	5778.42	.12	.41	3421.07	4046.42
*	6300.000	300.00	.00	.00	5773.10	790.00	5775.79	.00	5775.81	4.83	1.17	672.76	359.42
*	6300.000	300.00	.00	.00	5773.10	1405.00	5778.42	.00	5778.43	.67	.80	1764.44	1712.47

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	6607.000	307.00	.00	.00	5776.20	745.00	5777.71	5777.71	5778.25	231.77	5.93	125.62	48.94
*	6607.000	307.00	.00	.00	5776.20	1365.00	5778.26	5778.26	5779.01	204.21	6.97	196.44	95.52
*	6636.000	29.00	.00	.00	5776.90	745.00	5778.69	5778.69	5779.49	205.17	7.17	103.84	52.01
*	6636.000	29.00	.00	.00	5776.90	1365.00	5779.52	5779.52	5780.63	182.49	8.45	161.48	101.04
*	6637.000	1.00	.00	.00	5778.90	745.00	5782.08	5782.08	5782.93	200.98	7.40	100.64	52.55
*	6637.000	1.00	.00	.00	5778.90	1365.00	5782.95	5782.95	5784.15	184.03	8.78	155.43	100.62
*	6817.000	180.00	.00	.00	5781.60	745.00	5784.28	.00	5784.60	50.40	4.50	165.64	104.94
*	6817.000	180.00	.00	.00	5781.60	1365.00	5785.34	.00	5785.81	51.34	5.49	248.73	190.51
	6846.000	29.00	.00	.00	5781.70	745.00	5784.44	.00	5784.74	46.18	4.37	170.60	109.63
	6846.000	29.00	.00	.00	5781.70	1365.00	5785.51	.00	5785.95	47.86	5.36	254.82	197.30
*	6847.000	1.00	.00	.00	5783.70	745.00	5786.86	5786.86	5787.73	207.05	7.48	99.65	51.77
*	6847.000	1.00	.00	.00	5783.70	1365.00	5787.75	5787.75	5788.95	185.07	8.80	155.13	100.34
*	6992.000	145.00	.00	.00	5786.30	745.00	5788.88	.00	5789.22	57.71	4.71	158.26	98.07
*	6992.000	145.00	.00	.00	5786.30	1365.00	5789.90	.00	5790.42	58.95	5.76	237.17	177.78
	7032.000	40.00	.00	.00	5786.40	745.00	5789.08	.00	5789.43	48.22	4.97	159.81	107.29
	7032.000	40.00	.00	.00	5786.40	1365.00	5790.08	.00	5790.66	51.80	6.37	233.09	189.67
*	7072.000	40.00	.00	.00	5791.80	745.00	5798.24	5798.24	5800.70	27.66	12.60	59.14	141.66
*	7072.000	40.00	.00	.00	5791.80	1365.00	5800.69	5800.69	5804.38	32.60	15.41	88.56	239.09
*	8450.000	.10	.00	.00	5815.20	685.00	5820.40	.00	5820.41	2.53	.82	840.24	430.28
*	8450.000	.10	.00	.00	5815.20	1315.00	5825.70	.00	5825.71	.32	.48	2590.34	2335.18
*	8875.000	425.00	.00	.00	5818.50	590.00	5820.55	.00	5820.80	282.57	4.09	145.78	35.10
*	8875.000	425.00	.00	.00	5818.50	1375.00	5825.72	.00	5825.74	2.48	1.04	1248.32	873.23
*	9300.000	425.00	.00	.00	5824.20	590.00	5827.97	.00	5828.16	117.45	3.53	171.08	54.44
*	9300.000	425.00	.00	.00	5824.20	1375.00	5828.02	5828.02	5829.00	592.28	8.03	175.39	56.50
	9700.000	400.00	.00	.00	5829.20	420.00	5832.34	.00	5832.47	95.78	2.92	143.67	42.91
*	9700.000	400.00	.00	.00	5829.20	1045.00	5834.40	.00	5834.56	48.12	3.30	332.04	150.64
	10150.000	450.00	.00	.00	5834.60	420.00	5837.73	.00	5837.91	156.27	3.38	125.95	33.60
*	10150.000	450.00	.00	.00	5834.60	1045.00	5838.47	.00	5838.93	267.06	5.56	194.07	63.95
	10625.000	475.00	.00	.00	5842.00	420.00	5844.43	.00	5844.56	125.73	2.99	143.67	37.46
*	10625.000	475.00	.00	.00	5842.00	1045.00	5845.62	.00	5845.83	90.24	3.60	285.21	110.01
*	10675.000	50.00	.00	.00	5854.00	420.00	5854.33	5854.33	5854.50	539.60	3.32	127.06	18.08
*	10675.000	50.00	.00	.00	5854.00	1045.00	5854.62	5854.62	5854.92	419.23	4.42	238.59	51.04
*	10900.000	225.00	.00	.00	5854.00	420.00	5855.57	.00	5855.61	16.72	1.64	264.26	102.70
*	10900.000	225.00	.00	.00	5854.00	1045.00	5856.33	.00	5856.43	25.88	2.66	408.81	205.42

	SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	11350.000	450.00	.00	.00	5854.00	420.00	5856.28	.00	5856.33	14.02	1.90	235.99	112.15
	11350.000	450.00	.00	.00	5854.00	1045.00	5857.38	.00	5857.50	19.44	2.92	386.75	237.00
*	11825.000	475.00	.00	.00	5855.10	420.00	5857.47	.00	5857.62	67.25	3.15	134.88	51.22
*	11825.000	475.00	.00	.00	5855.10	1045.00	5858.68	.00	5858.91	48.04	3.98	282.29	150.77
	12275.000	450.00	.00	.00	5857.40	420.00	5860.48	.00	5860.64	66.72	3.12	134.60	51.42
	12275.000	450.00	.00	.00	5857.40	1045.00	5861.39	.00	5861.71	82.05	4.61	232.63	115.37
	12750.000	475.00	.00	.00	5859.80	420.00	5862.87	.00	5863.00	38.47	2.87	146.58	67.72
	12750.000	475.00	.00	.00	5859.80	1045.00	5864.30	.00	5864.53	44.55	3.85	271.62	156.56
*	13200.000	450.00	.00	.00	5864.70	310.00	5866.38	.00	5866.62	487.31	3.92	79.08	14.04
*	13200.000	450.00	.00	.00	5864.70	825.00	5867.62	.00	5867.88	185.97	4.17	203.00	60.50
*	13625.000	425.00	.00	.00	5870.60	310.00	5872.51	.00	5872.57	65.18	1.94	161.45	38.40
*	13625.000	425.00	.00	.00	5870.60	825.00	5873.18	.00	5873.32	93.10	2.97	271.41	85.50
*	14075.000	450.00	.00	.00	5878.70	310.00	5879.84	5879.84	5880.13	863.81	4.45	71.92	10.55
*	14075.000	450.00	.00	.00	5878.70	825.00	5880.53	.00	5880.84	374.86	4.58	185.27	42.61
*	14500.000	425.00	.00	.00	5883.60	135.00	5884.74	.00	5884.75	17.36	.80	146.65	32.40
*	14500.000	425.00	.00	.00	5883.60	370.00	5885.27	.00	5885.31	24.57	1.24	252.68	74.65
*	14950.000	450.00	.00	.00	5890.40	135.00	5891.20	5891.20	5891.42	1136.93	3.70	36.89	4.00
*	14950.000	450.00	.00	.00	5890.40	370.00	5891.62	5891.62	5891.93	751.71	4.63	84.18	13.50
*	15400.000	450.00	.00	.00	5898.00	135.00	5899.28	.00	5899.31	67.80	1.47	97.64	16.39
*	15400.000	450.00	.00	.00	5898.00	370.00	5899.79	.00	5899.85	76.05	2.07	191.22	42.43
*	15800.000	400.00	.00	.00	5906.80	135.00	5907.59	5907.59	5907.80	341.60	3.87	40.63	7.30
*	15800.000	400.00	.00	.00	5906.80	370.00	5908.01	5908.01	5908.29	259.31	4.82	98.06	22.98
*	16200.000	400.00	.00	.00	5915.10	135.00	5916.03	.00	5916.14	140.36	2.88	55.71	11.40
	16200.000	400.00	.00	.00	5915.10	370.00	5916.42	.00	5916.64	171.76	4.20	103.58	28.23
*	16600.000	400.00	.00	.00	5924.30	135.00	5925.69	5925.69	5926.04	420.05	4.77	28.32	6.59
*	16600.000	400.00	.00	.00	5924.30	370.00	5926.35	5926.35	5926.93	330.53	6.11	61.62	20.35

WINDMILL GULCH EXISTIN

SUMMARY PRINTOUT TABLE 150

	SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	2864.000	705.00	5732.60	.00	.00	.00	20.00	.00
	2864.000	1167.42	5734.75	2.15	.00	.00	80.85	.00
	2893.000	705.00	5732.59	.00	-.01	.00	20.00	29.00
	2893.000	1167.42	5734.73	2.14	-.02	.00	39.36	29.00
	2997.000	705.00	5732.62	.00	.03	.00	20.00	104.00
	2997.000	1167.42	5734.76	2.15	.03	.00	20.00	104.00
	3017.000	705.00	5732.59	.00	-.02	.00	19.00	20.00
	3017.000	1167.42	5734.72	2.13	-.04	.00	19.00	20.00
	3067.000	705.00	5732.72	.00	.13	.00	19.00	50.00
	3067.000	1057.69	5735.85	3.13	1.12	.00	19.00	50.00
	3071.000	705.00	5732.72	.00	.00	.00	19.00	4.00
	3071.000	1057.69	5735.85	3.13	.00	.00	19.00	4.00
	3098.000	705.00	5732.75	.00	.02	.00	19.00	27.00
	3098.000	1057.69	5735.86	3.12	.01	.00	19.00	27.00
*	3114.000	705.00	5735.08	.00	2.34	.00	19.00	16.00
*	3114.000	1057.69	5736.16	1.08	.30	.00	19.00	16.00
*	3142.000	705.00	5736.95	.00	1.87	.00	18.64	28.00
*	3142.000	1060.74	5738.29	1.34	2.13	.00	40.88	28.00
*	3250.000	705.00	5738.11	.00	1.16	.00	18.03	108.00
*	3250.000	1080.27	5739.51	1.39	1.21	.00	38.24	108.00
*	3625.000	705.00	5741.90	.00	3.79	.00	18.00	375.00
*	3625.000	1080.27	5743.27	1.37	3.76	.00	36.53	375.00
*	4100.000	705.00	5748.70	.00	6.80	.00	18.00	475.00
*	4100.000	1080.27	5750.14	1.44	6.87	.00	43.11	475.00
*	4575.000	705.00	5755.21	.00	6.50	.00	18.01	475.00
*	4575.000	980.22	5756.17	.97	6.03	.00	19.95	475.00
*	5015.000	705.00	5760.70	.00	5.50	.00	18.00	440.00
*	5015.000	980.22	5761.66	.96	5.49	.00	19.92	440.00
*	5043.000	705.00	5762.22	.00	1.52	.00	40.70	28.00
*	5043.000	980.22	5763.46	1.24	1.80	.00	123.20	28.00
	5056.000	705.00	5762.15	.00	-.06	.00	28.08	13.00
	5056.000	1028.26	5763.32	1.17	-.13	.00	99.83	13.00

	SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	5099.000	675.00	5763.26	.00	1.11	.00	36.40	43.00
	5099.000	1145.12	5763.81	.55	.49	.00	76.62	43.00
	5105.000	675.00	5763.35	.00	.09	.00	34.16	6.00
	5105.000	1145.12	5764.10	.75	.29	.00	80.80	6.00
*	5133.000	675.00	5763.08	.00	-.27	.00	17.76	28.00
*	5133.000	1170.00	5764.84	1.76	.74	.00	39.72	28.00
*	5335.000	675.00	5767.58	.00	4.50	.00	17.75	202.00
*	5335.000	1170.00	5769.46	1.88	4.62	.00	52.76	202.00
*	5453.000	675.00	5769.41	.00	1.83	.00	25.43	118.00
*	5453.000	1170.00	5770.79	1.38	1.33	.00	47.75	118.00
*	5557.000	675.00	5772.01	.00	2.61	.00	25.45	104.00
*	5557.000	1170.00	5773.29	1.28	2.50	.00	32.89	104.00
*	5589.000	675.00	5772.34	.00	.33	.00	17.00	32.00
*	5589.000	1170.00	5773.98	1.64	.69	.00	18.59	32.00
*	5615.000	675.00	5772.95	.00	.61	.00	17.00	26.00
*	5615.000	1170.00	5774.56	1.60	.58	.00	17.00	26.00
*	5675.000	675.00	5774.61	.00	1.65	.00	17.00	60.00
*	5675.000	1170.00	5776.73	2.13	2.17	.00	17.00	60.00
*	5702.000	675.00	5775.76	.00	1.15	.00	334.02	27.00
*	5702.000	1170.00	5778.40	2.65	1.67	.00	379.08	27.00
	6000.000	790.00	5775.78	.00	.02	.00	585.05	298.00
	6000.000	1405.00	5778.42	2.64	.02	.00	618.72	298.00
*	6300.000	790.00	5775.79	.00	.01	.00	390.06	300.00
*	6300.000	1405.00	5778.42	2.63	.00	.00	429.21	300.00
*	6607.000	745.00	5777.71	.00	1.92	.00	116.91	307.00
*	6607.000	1365.00	5778.26	.55	-.16	.00	135.83	307.00
*	6636.000	745.00	5778.69	.00	.99	.00	65.92	29.00
*	6636.000	1365.00	5779.52	.83	1.26	.00	73.29	29.00
*	6637.000	745.00	5782.08	.00	3.39	.00	59.45	1.00
*	6637.000	1365.00	5782.95	.87	3.43	.00	66.41	1.00
*	6817.000	745.00	5784.28	.00	2.20	.00	73.79	180.00
*	6817.000	1365.00	5785.34	1.06	2.39	.00	83.20	180.00
	6846.000	745.00	5784.43	.00	.16	.00	74.38	29.00
	6846.000	1365.00	5785.51	1.06	.17	.00	83.85	29.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	6847.000	745.00	5786.86	.00	2.42	.00	59.32	1.00
*	6847.000	1365.00	5787.75	.88	2.24	.00	66.38	1.00
*	6992.000	745.00	5788.88	.00	2.01	.00	72.89	145.00
*	6992.000	1365.00	5789.90	1.03	2.15	.00	81.95	145.00
	7032.000	745.00	5789.08	.00	.20	.00	69.40	40.00
	7032.000	1365.00	5790.08	1.00	.18	.00	76.68	40.00
*	7072.000	745.00	5798.24	.00	9.16	.00	12.00	40.00
*	7072.000	1365.00	5800.69	2.45	10.61	.00	12.00	40.00
*	8450.000	685.00	5820.40	.00	22.16	.00	249.03	.10
*	8450.000	1315.00	5825.70	5.30	25.01	.00	406.02	.10
*	8875.000	590.00	5820.55	.00	.15	.00	122.36	425.00
*	8875.000	1375.00	5825.72	5.17	.02	.00	315.31	425.00
*	9300.000	590.00	5827.97	.00	7.43	.00	89.33	425.00
*	9300.000	1375.00	5828.02	.05	2.30	.00	90.68	425.00
	9700.000	420.00	5832.34	.00	4.37	.00	70.60	400.00
*	9700.000	1045.00	5834.40	2.06	6.37	.00	130.18	400.00
	10150.000	420.00	5837.73	.00	5.39	.00	82.45	450.00
*	10150.000	1045.00	5838.47	.73	4.07	.00	105.11	450.00
	10625.000	420.00	5844.43	.00	6.69	.00	107.37	475.00
*	10625.000	1045.00	5845.62	1.19	7.15	.00	128.39	475.00
*	10675.000	420.00	5854.33	.00	9.91	.00	385.85	50.00
*	10675.000	1045.00	5854.62	.29	9.00	.00	395.14	50.00
*	10900.000	420.00	5855.57	.00	1.23	.00	182.41	225.00
*	10900.000	1045.00	5856.33	.76	1.71	.00	196.06	225.00
	11350.000	420.00	5856.28	.00	.72	.00	129.25	450.00
	11350.000	1045.00	5857.38	1.10	1.05	.00	145.70	450.00
*	11825.000	420.00	5857.47	.00	1.18	.00	102.27	475.00
*	11825.000	1045.00	5858.68	1.21	1.30	.00	138.77	475.00
	12275.000	420.00	5860.48	.90	3.02	.00	92.14	450.00
	12275.000	1045.00	5861.39	.90	2.71	.00	123.78	450.00
	12750.000	420.00	5862.87	.00	2.39	.00	75.29	475.00
	12750.000	1045.00	5864.30	1.43	2.91	.00	101.85	475.00
*	13200.000	310.00	5866.38	.00	3.51	.00	84.51	450.00
*	13200.000	825.00	5867.62	1.24	3.32	.00	115.49	450.00

	SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	13625.000	310.00	5872.51	.00	6.13	.00	152.00	425.00
*	13625.000	825.00	5873.18	.66	5.56	.00	180.14	425.00
*	14075.000	310.00	5879.84	.00	7.32	.00	123.64	450.00
*	14075.000	825.00	5880.53	.70	7.36	.00	201.77	450.00
*	14500.000	135.00	5884.74	.00	4.90	.00	184.62	425.00
*	14500.000	370.00	5885.27	.53	4.74	.00	216.35	425.00
*	14950.000	135.00	5891.20	.00	6.46	.00	91.56	450.00
*	14950.000	370.00	5891.62	.41	6.34	.00	137.46	450.00
*	15400.000	135.00	5899.28	.00	8.08	.00	155.19	450.00
*	15400.000	370.00	5899.79	.51	8.18	.00	218.72	450.00
*	15800.000	135.00	5907.59	.00	8.31	.00	106.38	400.00
*	15800.000	370.00	5908.01	.42	8.22	.00	165.67	400.00
*	16200.000	135.00	5916.03	.00	8.44	.00	116.83	400.00
	16200.000	370.00	5916.42	.38	8.40	.00	134.90	400.00
*	16600.000	135.00	5925.69	.00	9.65	.00	40.82	400.00
*	16600.000	370.00	5926.35	.67	9.94	.00	57.98	400.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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CAUTION SECNO=   3114.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   3114.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   3114.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   3114.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   3114.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   3114.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   3142.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   3142.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   3142.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   3142.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   3142.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   3142.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   3250.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   3250.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   3250.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   3250.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   3250.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   3250.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   3625.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   3625.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   3625.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   3625.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   3625.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   3625.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   4100.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   4100.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   4100.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   4100.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   4100.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   4100.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   4575.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   4575.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   4575.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   4575.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   4575.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   4575.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   5015.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   5015.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   5015.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   5015.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   5015.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   5015.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=   5043.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   5043.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=   5133.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   5133.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   5133.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   5133.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   5133.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   5133.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   5335.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   5335.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   5335.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   5335.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=   5335.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

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CAUTION SECNO=   5453.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   5453.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   5453.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   5453.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

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CAUTION SECNO=   5557.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   5557.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=   5557.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

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CAUTION SECNO=   5589.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   5589.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   5589.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   5589.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   5615.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=   5615.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   5615.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   5615.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   5615.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   5675.000  PROFILE=  1  HYDRAULIC JUMP D.S.
WARNING SECNO=   5675.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=   5675.000  PROFILE=  2  HYDRAULIC JUMP D.S.
WARNING SECNO=   5675.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=   5702.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   5702.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=   6300.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   6300.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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CAUTION SECNO=   6607.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   6607.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   6607.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   6607.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   6607.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   6607.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   6636.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
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CAUTION SECNO=   6636.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   6636.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   6636.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   6636.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   6637.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   6637.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   6637.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   6637.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   6637.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   6637.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=   6817.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   6817.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=   6847.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   6847.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   6847.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   6847.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   6847.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   6847.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=   6992.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   6992.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=   7072.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   7072.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   7072.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=   7072.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   7072.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   7072.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=   8450.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   8450.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=   8875.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=   8875.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=   9300.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
CAUTION SECNO=   9300.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   9300.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   9300.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=   9700.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=  10150.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  10625.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=  10675.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  10675.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=  10675.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=  10675.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  10675.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=  10675.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=  10900.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  10900.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  11825.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  11825.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  13200.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  13200.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  13625.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  13625.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=  14075.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  14075.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
WARNING SECNO=  14075.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=  14500.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  14500.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=  14950.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  14950.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=  14950.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=  14950.000  PROFILE=  1  SLOPE TOO STEEP
CAUTION SECNO=  14950.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  14950.000  PROFILE=  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=  14950.000  PROFILE=  2  20 TRIALS ATTEMPTED TO BALANCE WSEL

WARNING SECNO=  15400.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=  15400.000  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=  15800.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  15800.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=  15800.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO=  15800.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  15800.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY

WARNING SECNO=  16200.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=  16600.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  16600.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
CAUTION SECNO=  16600.000  PROFILE=  2  CRITICAL DEPTH ASSUMED
CAUTION SECNO=  16600.000  PROFILE=  2  MINIMUM SPECIFIC ENERGY
```

B. HEC-2 ANALYSIS

Aspen Drive Overflow - Existing Condition
2-Hour, 100-Year

THIS RUN EXECUTED 22NOV91 02:11:42

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.0;  February 1991
************************************


T1 WINDMILL GULCH DRAINAGE BASIN PLANNING STUDY - WILSON & COMPANY   89-820
T2 ASPEN DRIVE OVERFLOW
T3      ASPEN DRIVE EXISTING CONDITION   100-YEAR 2-HOUR          ASPENEX.DAT

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         0        -1         0         0         0    5738.3         0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1         0         0         0         0         0         0         0


NC     .040      .040      .016        .1        .3
QT        1       110
        FEMA SECTION A-MAIN CHANNEL STA.30+17 FEMA SECTION B OUTFALL GRAND BLVD.
X1        0         5      1000      1564         0         0         0
GR     5740      1000    5738.1      1515    5737.1      1530    5737.1      1549    5738.1      1564

        FEMA SECTION B
X1      115         6      1035      1071       115       115       115
GR   5738.3      1000      5738      1010    5736.7      1035    5736.5      1053    5736.4      1071
GR   5738.5      1105

        FEMA SECTION C - INTERSECTION OF ASPEN DRIVE AND MARIAN DRIVE
X1      505         7      1040      1076       380       400       390
GR   5742.4      1000      5742      1025    5741.7      1040    5741.9      1058    5741.8      1076
GR     5742      1095    5742.7      1120

        FEMA SECTION D
X1      910         7      1125      1161       395       415       405
GR     5750      1000      5748      1090    5747.1      1125    5747.3      1143    5747.2      1161
GR     5748      1185    5748.6      1200

        FEMA SECTION E
X1     1545         6      1030      1066       645       625       635
GR     5766      1000      5760      1020    5759.1      1030    5759.8      1048    5759.4      1066
GR   5760.4      1095
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

```
*PROF 1


CCHV=     .100 CEHV=     .300
*SECNO  .000
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION A-MAIN CHANNEL STA.30+17 FEMA SECTION B OUTFALL GRAND BLVD.
     .000       .81   5737.91   5737.91   5738.30   5738.21       .29       .00       .00   5740.00
    110.0        .0     110.0        .0        .0      25.3        .0        .0        .0   5738.10
      .00       .00      4.35       .00      .000      .016      .000      .000   5737.10   1517.82
  .004495        0.        0.        0.         0        13         0       .00     43.36   1561.18


*SECNO 115.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  6.10

       FEMA SECTION B
   115.000      1.85   5738.25       .00       .00   5738.27       .03       .04       .03   5736.70
     110.0       8.6      90.8      10.7      23.4      62.0      27.6        .2        .2   5736.40
       .03       .37      1.46       .39      .040      .016      .040      .000   5736.40   1001.80
   .000121      115.      115.      115.         2         0         0       .00     99.08   1100.89


*SECNO 505.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION C - INTERSECTION OF ASPEN DRIVE AND MARIAN DRIVE
   505.000       .64   5742.34   5742.34       .00   5742.56       .22       .14       .06   5741.70
     110.0      15.3      80.0      14.7      11.0      18.5      10.4        .9       1.1   5741.80
       .06      1.39      4.32      1.41      .040      .016      .040      .000   5741.70   1003.78
   .005254      380.      390.      400.        20        22         0       .00    103.35   1107.13


*SECNO 910.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION D
   910.000       .71   5747.81   5747.81       .00   5748.06       .25      1.98       .01   5747.10
     110.0      12.2      91.6       6.2       9.7      20.9       5.5       1.2       2.0   5747.20
       .08      1.26      4.38      1.13      .040      .016      .040      .000   5747.10   1097.54
   .004589      395.      405.      415.        20         8         0       .00     81.64   1179.18
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 1545.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION E
```

1545.000	.99	5760.09	5760.09	.00	5760.36	.27	3.09	.01	5759.10
110.0	9.4	91.7	8.9	5.4	20.2	6.8	1.7	3.0	5759.40
.13	1.75	4.54	1.31	.040	.016	.040	.000	5759.10	1019.71
.005164	645.	635.	625.	20	14	0	.00	66.18	1085.90

THIS RUN EXECUTED 22NOV91 02:11:55

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HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

ASPEN DRIVE EXISTING CON

SUMMARY PRINTOUT TABLE 150

	SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	.000	.00	.00	.00	5737.10	110.00	5737.91	5737.91	5738.21	44.95	4.35	25.31	16.41
*	115.000	115.00	.00	.00	5736.40	110.00	5738.25	.00	5738.27	1.21	1.46	112.94	100.15
*	505.000	390.00	.00	.00	5741.70	110.00	5742.34	5742.34	5742.56	52.54	4.32	39.88	15.18
*	910.000	405.00	.00	.00	5747.10	110.00	5747.81	5747.81	5748.06	45.89	4.38	36.11	16.24
*	1545.000	635.00	.00	.00	5759.10	110.00	5760.09	5760.09	5760.36	51.64	4.54	32.39	15.31

ASPEN DRIVE EXISTING CON

SUMMARY PRINTOUT TABLE 150

	SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	.000	110.00	5737.91	.00	.00	-.39	43.36	.00
*	115.000	110.00	5738.25	.00	.33	.00	99.08	115.00
*	505.000	110.00	5742.34	.00	4.09	.00	103.35	390.00
*	910.000	110.00	5747.81	.00	5.47	.00	81.64	405.00
*	1545.000	110.00	5760.09	.00	12.28	.00	66.18	635.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION SECNO=      .000  PROFILE=  1  CRITICAL DEPTH ASSUMED

WARNING SECNO=    115.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=    505.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    505.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    505.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    910.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    910.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    910.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   1545.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   1545.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   1545.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
```

C. HEC-2 ANALYSIS

Hackberry Drive Overflow - Existing Condition
2-Hour, 100-Year

THIS RUN EXECUTED 22NOV91 02:58:33

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**********************************
HEC-2 WATER SURFACE PROFILES

Version  4.6.0;  February 1991
**********************************


T1 WINDMILL GULCH DRAINAGE BASIN PLANNING STUDY - WILSON & COMPANY   89-820
T2 HACKBERRY DRIVE OVERFLOW
T3      HACKBERRY DRIVE EXISTING CONDITION 100-YEAR 2-HOUR        HACKEX.DAT

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         0        -1         0         0         0      5752

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1         0         0         0         0         0         0         0


NC     .040      .040      .013        .1        .3
QT        1       100
        SWALE BETWEEN HOUSES EAST OF HACKBERRY DR AND SOUTH OF WIDEFIELD DR
X1       75         7      1070      1075         0         0         0
GR     5753      1000    5751.7      1070    5750.7      1071    5750.7      1074    5751.7      1075
GR     5752      1270    5752.3      1280

        SWALE BETWEEN HOUSES EAST OF HACKBERRY DR AND SOUTH OF WIDEFIELD DR
X1      170        10      1097      1105        95        95        95
GR   5754.5      1000      5754      1025    5753.5      1094    5752.5      1097      5752      1097
GR     5752      1105    5752.5      1105    5753.5      1108      5754      1305    5754.6      1330

NC       0         0      .016         0         0
        INTERSECTION OF HACKBERRY DRIVE AND WIDEFIELD DRIVE
X1      365         5      1040      1076       160       240       195
GR   5755.7      1000    5754.7      1040    5755.2      1058    5754.9      1076      5756      1135

        NORTH OF INTERSECTION OF HACKBERRY DRIVE AND WIDEFIELD DRIVE
X1      700         5      1035      1071       335       335       335
GR   5761.6      1000    5760.8      1035      5761      1053    5760.9      1071      5762      1100
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 1


CCHV=     .100 CEHV=     .300
*SECNO 75.000
3720 CRITICAL DEPTH ASSUMED
       SWALE BETWEEN HOUSES EAST OF HACKBERRY DR AND SOUTH OF WIDEFIELD DR
   75.000      1.52   5752.22   5752.22   5752.00   5752.38       .17       .00       .00   5751.70
    100.0       4.7      35.5      59.8       7.2       6.6      72.7        .0        .0   5751.70
      .00       .65      5.38       .82      .040      .013      .040      .000   5750.70   1042.07
  .001878        0.        0.        0.         0        10         0       .00    235.21   1277.28


*SECNO 170.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       SWALE BETWEEN HOUSES EAST OF HACKBERRY DR AND SOUTH OF WIDEFIELD DR
  170.000      2.01   5754.01   5754.01       .00   5754.20       .19       .10       .01   5752.50
    100.0       9.5      68.5      22.0      20.7      16.1      53.5        .2        .6   5752.50
      .01       .46      4.27       .41      .040      .013      .040      .000   5752.00   1024.68
  .000645       95.       95.       95.        20        15         0       .00    280.58   1305.26


*SECNO 365.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       INTERSECTION OF HACKBERRY DRIVE AND WIDEFIELD DRIVE
  365.000       .76   5755.46   5755.46       .00   5755.68       .22       .29       .01   5754.70
    100.0      17.6      71.8      10.5      11.6      16.7       8.5        .5       1.5   5754.90
      .02      1.52      4.31      1.24      .040      .016      .040      .000   5754.70   1009.49
  .006031      160.      195.      240.        20        22         0       .00     96.69   1106.18


*SECNO 700.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       NORTH OF INTERSECTION OF HACKBERRY DRIVE AND WIDEFIELD DRIVE
  700.000       .67   5761.47   5761.47       .00   5761.71       .24      1.79       .01   5760.80
    100.0      12.0      83.3       4.7       9.8      19.5       4.2        .8       2.2   5760.90
      .05      1.23      4.26      1.10      .040      .016      .040      .000   5760.80   1005.77
  .004751      335.      335.      335.        20         9         0       .00     80.21   1085.98
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THIS RUN EXECUTED 22NOV91 02:58:49

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************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.0;  February 1991
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

HACKBERRY DRIVE EXISTING

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	75.000	.00	.00	.00	5750.70	100.00	5752.22	5752.22	5752.38	18.78	5.38	86.52	23.07
*	170.000	95.00	.00	.00	5752.00	100.00	5754.01	5754.01	5754.20	6.45	4.27	90.28	39.38
*	365.000	195.00	.00	.00	5754.70	100.00	5755.46	5755.46	5755.68	60.31	4.31	36.78	12.88
*	700.000	335.00	.00	.00	5760.80	100.00	5761.47	5761.47	5761.71	47.51	4.26	33.56	14.51

HACKBERRY DRIVE EXISTING

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	75.000	100.00	5752.22	.00	.00	.22	235.21	.00
*	170.000	100.00	5754.01	.00	1.79	.00	280.58	95.00
*	365.000	100.00	5755.46	.00	1.46	.00	96.69	195.00
*	700.000	100.00	5761.47	.00	6.01	.00	80.21	335.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION SECNO=     75.000  PROFILE=  1  CRITICAL DEPTH ASSUMED

CAUTION SECNO=    170.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    170.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    170.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    365.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    365.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    365.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    700.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    700.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    700.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
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D. HEC-2 ANALYSIS

Grand Boulevard Overflow - Existing Condition
2-Hour, 100-Year

THIS RUN EXECUTED 22NOV91 06:25:03

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**********************************
HEC-2 WATER SURFACE PROFILES

Version   4.6.0;  February 1991
**********************************


T1 WINDMILL GULCH DRAINAGE BASIN PLANNING STUDY - WILSON & COMPANY   89-820
T2 GRAND BOULEVARD OVERFLOW
T3      GRAND BOULEVARD EXISTING CONDITION   100-YEAR 2-HOUR       GRANDEX.DAT

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         0         0         0         0         0   5715.16         0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1         0         0         0         0         0         0         0


NC     .040      .040      .016        .1        .3
QT        1        23
X1      350         5      1040      1076         0         0         0
GR   5713.4      1000    5712.4      1040    5712.6      1058    5712.4      1076      5714      1115

        FEMA SECTION A - INTERSECTION OF GRAND BOULEVARD AND MARQUETTE DRIVE
X1      530         8      1045      1085       170       190       180
GR     5716      1000    5714.2      1045    5714.5      1065    5713.8      1085    5713.9      1105
GR   5713.8      1135      5714      1160      5716      1205

        FEMA SECTION B
X1     1000         5      1040      1076       450       490       470
GR   5723.8      1000    5722.6      1040    5722.7      1058    5722.4      1076      5724      1085

        FEMA SECTION C
X1     1290         7      1045      1081       290       290       290
GR     5732      1000      5730      1020    5728.7      1045      5729      1063    5728.8      1081
GR     5730      1095    5730.7      1120

        EAST OF INTERSECTION OF GRAND BOULEVARD AND HACKBERRY DRIVE
X1     1500         5      1035      1071       210       210       210
GR     5735      1000      5734      1035    5734.1      1053      5734      1071    5734.5      1105
```

```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 1



CCHV=     .100 CEHV=     .300
*SECNO 350.000
3280 CROSS SECTION    350.00 EXTENDED     1.76 FEET

  350.000      2.76   5715.16       .00   5715.16   5715.16       .00       .00       .00   5712.40
     23.0       4.8      14.5       3.7      90.4      95.7      76.4        .0        .0   5712.40
      .00       .05       .15       .05      .040      .016      .040      .000   5712.40   1000.00
  .000001        0.        0.        0.         0         0         0       .00    115.00   1115.00


*SECNO 530.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .30

       FEMA SECTION A - INTERSECTION OF GRAND BOULEVARD AND MARQUETTE DRIVE
  530.000      1.36   5715.16       .00       .00   5715.16       .00       .00       .00   5714.20
     23.0        .7       9.0      13.2      11.5      36.4     112.2        .9        .6   5713.80
      .30       .06       .25       .12      .040      .016      .040      .000   5713.80   1020.99
  .000008      170.      180.      190.         0         0         0       .00    165.13   1186.11


*SECNO 1000.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION B
 1000.000       .42   5722.82   5722.82       .00   5722.93       .11       .01       .03   5722.60
     23.0        .6      21.9        .5        .8       7.9        .5       1.8       1.7   5722.40
      .35       .70      2.77      1.06      .040      .016      .040      .000   5722.40   1032.68
  .006735      450.      470.      490.        20        17         0       .00     45.68   1078.36


*SECNO 1290.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
       FEMA SECTION C
 1290.000       .39   5729.09   5729.09       .00   5729.20       .11      1.95       .00   5728.70
     23.0       1.5      21.1        .4       1.5       7.7        .5       1.9       2.0   5728.80
      .38      1.02      2.73       .84      .040      .016      .040      .000   5728.70   1037.51
  .006770      290.      290.      290.        20        11         0       .00     46.87   1084.38
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

```
*SECNO 1500.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
        EAST OF INTERSECTION OF GRAND BOULEVARD AND HACKBERRY DRIVE
  1500.000      .26   5734.26   5734.26      .00   5734.36      .10      1.36      .00   5734.00
      23.0       .9      20.3       1.8      1.2       7.7      2.4       1.9      2.3   5734.00
       .41      .76      2.63       .76     .040      .016     .040      .000   5734.00   1025.75
   .006280     210.      210.      210.       20        14        0       .00     63.21   1088.96
```

THIS RUN EXECUTED 22NOV91 06:25:17

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HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

GRAND BOULEVARD EXISTING

SUMMARY PRINTOUT TABLE 150

	SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	350.000	.00	.00	.00	5712.40	23.00	5715.16	.00	5715.16	.01	.15	262.58	270.47
*	530.000	180.00	.00	.00	5713.80	23.00	5715.16	.00	5715.16	.08	.25	160.10	81.09
*	1000.000	470.00	.00	.00	5722.40	23.00	5722.82	5722.82	5722.93	67.35	2.77	9.20	2.80
*	1290.000	290.00	.00	.00	5728.70	23.00	5729.09	5729.09	5729.20	67.30	2.73	9.67	2.80
*	1500.000	210.00	.00	.00	5734.00	23.00	5734.26	5734.26	5734.36	62.80	2.63	11.29	2.90

GRAND BOULEVARD EXISTING

SUMMARY PRINTOUT TABLE 150

	SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	350.000	23.00	5715.16	.00	.00	.00	115.00	.00
*	530.000	23.00	5715.16	.00	.00	.00	165.13	180.00
*	1000.000	23.00	5722.82	.00	7.66	.00	45.68	470.00
*	1290.000	23.00	5729.09	.00	6.27	.00	46.87	290.00
*	1500.000	23.00	5734.26	.00	5.17	.00	63.21	210.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
WARNING SECNO=    530.000  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

CAUTION SECNO=   1000.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   1000.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   1000.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   1290.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   1290.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   1290.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   1500.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   1500.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=   1500.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
```

E. HEC-2 ANALYSIS

Dix Circle Overflow - Existing Condition
2-Hour, 100-Year

THIS RUN EXECUTED 22NOV91 02:17:43

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**********************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.0;  February 1991
**********************************


T1 WINDMILL GULCH DRAINAGE BASIN PLANNING STUDY - WILSON & COMPANY   89-820
T2 DIX CIRCLE OVERFLOW
T3      DIX CIRCLE EXISTING CONDITION   100-YEAR 2-HOUR          DIXEX.DAT

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q       WSEL     FQ

      0        2        0        0        0        0        0        0   5712.60

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

     1        0       -1        0        0        0        0        0        0        0


NC    .040     .040     .016      .1       .3
QT       1       61
X1     100        7     1030     1070        0        0        0
GR    5714     1000     5712     1015   5709.9     1030   5710.3     1050   5709.9     1070
GR    5710     1080     5712     1140

       FEMA SECTION A
X1     320        6     1035     1125      190      290      220
GR  5717.1     1000     5716     1030   5715.1     1035   5715.5     1070   5715.2     1125
GR  5715.6     1170

       FEMA SECTION B
X1     690        7     1040     1080      320      410      370
GR  5726.4     1000     5726     1015     5724     1030   5722.8     1040   5723.5     1060
GR  5722.6     1080   5723.6     1115

       FEMA SECTION C
X1    1120        8     1040     1080      430      430      430
GR  5729.2     1000     5728     1035   5727.9     1040   5728.1     1060   5727.9     1080
GR    5728     1085     5730     1100   5730.4     1115

       SECTION AT WEST CURB RETURN OF INTERSECTION OF DIX CIRCLE & LIBBY COURT
X1    1210        6     1005     1045       90       90       90
GR  5729.3     1000   5728.6     1005     5729     1025   5728.5     1045     5729     1050
GR    5730     1065
```

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	ARDB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

#PROF 1

CCHV= .100 CEHV= .300
#SECNO 100.000
3280 CROSS SECTION 100.00 EXTENDED .60 FEET

100.000	2.70	5712.60	.00	5712.60	5712.60	.00	.00	.00	5709.90
61.0	3.2	41.5	16.3	26.1	100.0	122.5	.0	.0	5709.90
.00	.12	.42	.13	.040	.016	.040	.000	5709.90	1010.50
.000006	0.	0.	0.	0	0	0	.00	129.50	1140.00

#SECNO 320.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION A

320.000	.44	5715.54	5715.54	.00	5715.65	.11	.01	.03	5715.10
61.0	.6	53.9	6.5	.5	19.0	6.5	.8	.7	5715.20
.02	1.16	2.84	.99	.040	.016	.040	.000	5715.10	1032.55
.007467	190.	220.	290.	20	29	0	.00	130.86	1163.41

#SECNO 690.000

3265 DIVIDED FLOW

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION B

690.000	.76	5723.36	5723.36	.00	5723.53	.18	2.87	.02	5722.80
61.0	1.8	42.1	17.1	1.3	10.8	10.0	1.0	1.6	5722.60
.06	1.39	3.91	1.71	.040	.016	.040	.000	5722.60	1035.36
.007789	320.	370.	410.	20	17	0	.00	63.81	1106.47

#SECNO 1120.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION C

1120.000	.46	5728.36	5728.36	.00	5728.54	.18	2.87	.00	5727.90
61.0	5.0	52.3	3.7	4.0	14.5	2.6	1.2	2.2	5727.90
.09	1.25	3.60	1.44	.040	.016	.040	.000	5727.90	1024.39
.005797	430.	430.	430.	5	14	0	.00	63.34	1087.73

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*SECNO 1210.000
7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
SECTION AT WEST CURB RETURN OF INTERSECTION OF DIX CIRCLE & LIBBY COURT

1210.000	.66	5729.16	5729.16	.00	5729.36	.20	.52	.01	5728.60
61.0	1.3	56.5	3.2	1.1	15.2	2.2	1.3	2.3	5728.50
.10	1.19	3.70	1.46	.040	.016	.040	.000	5728.50	1001.03
.005758	90.	90.	90.	5	14	0	.00	51.32	1052.34

THIS RUN EXECUTED 22NOV91 02:17:55

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HEC-2 WATER SURFACE PROFILES

Version 4.6.0; February 1991
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

DIX CIRCLE EXISTING COND

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	100.000	.00	.00	.00	5709.90	61.00	5712.60	.00	5712.60	.06	.42	248.58	251.29
*	320.000	220.00	.00	.00	5715.10	61.00	5715.54	5715.54	5715.65	74.67	2.84	26.06	7.06
*	690.000	370.00	.00	.00	5722.60	61.00	5723.36	5723.36	5723.53	77.89	3.91	22.06	6.91
*	1120.000	430.00	.00	.00	5727.90	61.00	5728.36	5728.36	5728.54	57.97	3.60	21.09	8.01
*	1210.000	90.00	.00	.00	5728.50	61.00	5729.16	5729.16	5729.36	57.58	3.70	18.56	8.04

DIX CIRCLE EXISTING COND

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	100.000	61.00	5712.60	.00	.00	.00	129.50	.00
*	320.000	61.00	5715.54	.00	2.94	.00	130.86	220.00
*	690.000	61.00	5723.36	.00	7.81	.00	63.81	370.00
*	1120.000	61.00	5728.36	.00	5.01	.00	63.34	430.00
*	1210.000	61.00	5729.16	.00	.79	.00	51.32	90.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION SECNO=    320.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    320.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    320.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=    690.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=    690.000  PROFILE=  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO=    690.000  PROFILE=  1  20 TRIALS ATTEMPTED TO BALANCE WSEL

CAUTION SECNO=   1120.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   1120.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY

CAUTION SECNO=   1210.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
CAUTION SECNO=   1210.000  PROFILE=  1  MINIMUM SPECIFIC ENERGY
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F. HEC-2 ANALYSIS

Main Channel - Floodway
2-Hour, 100-Year

THIS RUN EXECUTED 02DEC91 15:57:21

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**********************************
HEC-2 WATER SURFACE PROFILES

Version   4.6.0;  February 1991
**********************************


T1 WINDMILL GULCH DRAINAGE BASIN PLANNING STUDY - WILSON & COMPANY   89-820
T2 144" CMP STORM SEWER ENTRANCE SOUTH OF GRAND BOULEVARD TO DRENNAN ROAD
T3       WINDMILL GULCH FLOODWAY   NATURAL RUN   100-YEAR 2-HOUR     WGFLWY.DAT

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         0         0         0         0         0   5734.75         0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1         0         0         0         0         0         0         0


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150       200

NC     .040      .040      .013        .1        .3
QT        2      1167      1190
ET                         10.4
        FEMA SECTION A - 144" CMP STORM SEWER ENTRANCE SOUTH OF GRAND BOULEVARD
X1     2864         7      1340      1360
GR     5738      1000      5736      1240    5734.3      1340    5726.6      1340    5726.6      1360
GR   5734.3      1360      5736      1490

        STEP IN CHANNEL WALL (0.5' STEP)
X1     2893         9      1180      1200        29        29        29
GR     5737      1000      5736      1125    5735.3      1165    5734.3      1180    5726.8      1180
GR   5726.8      1200    5734.3      1200    5734.8      1215    5736.5      1290

        GRADE BREAK IN CHANNEL WALL
X1     2997         7      1370      1390       104       104       104
GR     5738      1000      5736      1355      5735      1370      5727      1370      5727      1390
GR     5735      1390      5736      1405

NC        0         0         0        .3        .5
        FEMA SECTION B - OUTFALL GRAND BOULEVARD BOX CULVERT - DOUBLE 9' x 7'
X1     3017         7      1530      1549        20        20        20
X3       10         0         0         0         0         0         0    5737.1    5737.1
GR     5740      1000    5738.1      1515    5737.1      1530      5727      1530      5727      1549
GR   5737.1      1549    5738.1      1564
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```
QT       2      1058      1190
SB    1.05       1.6       2.6         0        19         1       126       .01    5727.1      5727
        FEMA SECTION C - ENTRANCE GRAND BOULEVARD BOX CULVERT - DOUBLE 9'x 7'
X1    3067         5      1015      1034        50        50        50
X2       0         0         1    5734.1      5738
X3      10         0         0         0         0         0         0      5738      5738
BT       5      1000    5738.5    5738.5      1015      5738    5734.1      1015      5738    5734.1
BT    1034      5738    5734.1      1034      5738    5734.1
GR  5738.5      1000      5738      1015    5727.1      1015    5727.1      1034      5738      1034

NC       0         0         0        .1        .3
        DROP STRUCTURE END SILL
X1    3071         5      1015      1034         4         4         4
GR  5738.4      1000    5737.9      1015    5727.1      1015    5727.1      1034    5737.9      1034

        DROP STRUCTURE BOTTOM
X1    3098         5      1015      1034        27        27        27
GR  5737.7      1000    5737.2      1015    5727.1      1015    5727.1      1034    5737.2      1034

        DROP STRUCTURE CREST (8.5' SLOPING DROP)/END CHANNEL TRANSITION
X1    3114         6      1015      1034        16        16        16
GR  5737.3      1000    5736.8      1015    5731.6      1015    5731.6      1034    5736.8      1034
GR  5737.3      1060

QT       2      1061      1190
        FEMA SECTION D - BEGIN CHANNEL TRANSITION
X1    3142         6      1015      1035        28        28        28
GR  5738.9      1000    5737.9      1015      5732      1021      5732      1029    5737.3      1035
GR  5737.8      1050

QT       2      1080      1190
X1    3250         8      1015      1035       105       110       108
GR  5740.1      1000    5739.1      1015    5733.1      1021    5733.1      1029    5739.1      1035
GR  5739.6      1050      5740      1062    5741.3      1100

        FEMA SECTION E
X1    3625         7      1040      1060       370       380       375
GR  5743.9      1000    5742.9      1040    5736.9      1046    5736.9      1054    5742.9      1060
GR    5746      1075      5748      1085

        FEMA SECTION F
X1    4100         7      1015      1035       475       475       475
GR  5750.7      1000    5749.7      1015    5743.7      1021    5743.7      1029    5749.7      1035
GR    5750      1045      5752      1135

QT       2       980      1190
        FEMA SECTION G
X1    4575         8      1085      1105       485       465       475
GR    5760      1000    5758.2      1060    5756.2      1085    5750.2      1091    5750.2      1099
GR  5756.2      1105      5758      1110    5759.5      1165
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        END CHANNEL TRANSITION
X1     5015       12     1105     1125      435      445      440
GR     5768     1000     5766     1025     5764     1035   5762.2     1090   5761.7     1105
GR   5755.7     1111   5755.7     1119   5761.7     1125   5762.2     1135     5764     1225
GR     5766     1235     5768     1285

        BEGIN CHANNEL TRANSITION
X1     5043       12     1105     1125       28       28       28
GR     5768     1000     5766     1025     5764     1045   5762.3     1090   5761.8     1105
GR   5755.8     1105   5755.8     1125   5761.8     1125   5762.3     1135     5764     1205
GR     5766     1240     5768     1310

QT        2     1028     1190
NC        0        0        0       .3       .5
        FEMA SECTION H - OUTFALL ASPEN DR/HACKBERRY DR BOX CULVERT - 18'x 4'
X1     5056       12     1105     1123       13       13       13
X3       10        0        0        0        0        0        0   5761.9   5761.9
GR     5768     1000     5766     1030     5764     1050   5762.4     1095   5761.9     1105
GR   5755.9     1105   5755.9     1123   5761.9     1123   5762.4     1133     5764     1195
GR     5766     1225     5768     1300

QT        2     1145     1170
SB        0      1.6      2.6        0       18        0       72      .02   5756.8   5755.9
        FEMA SECTION I - ENTRANCE ASPEN DR/HACKBERRY DR BOX CULVERT - 18'x 4'
X1     5099       15     1135     1153       43       43       43
X2        0        0        1   5760.8   5762.8
X3       10        0        0        0        0        0        0   5762.8   5762.8
BT       15     1000     5772     5772     1015     5770     5770     1040     5768     5768
BT     1065     5766     5766     1125   5763.3   5763.3     1135   5762.8   5760.8     1135
BT   5762.8   5760.8     1153   5762.8   5760.8     1153   5762.8   5760.8     1163   5763.3
BT   5763.3     1200     5764     5764     1240     5766     5766     1255     5768     5768
BT     1340     5770     5770     1355     5772     5772
GR     5772     1000     5770     1015     5768     1040     5766     1065   5763.3     1125
GR   5762.8     1135   5756.8     1135   5756.8     1153   5762.8     1153   5763.3     1163
GR     5764     1200     5766     1240     5768     1255     5770     1340     5772     1355

NC        0        0        0       .1       .3
        END CHANNEL TRANSITION
X1     5105       15     1135     1155        6        6        6
GR     5772     1000     5770     1020     5768     1045     5766     1070   5763.5     1125
GR     5763     1135     5757     1135     5757     1155     5763     1155   5763.5     1165
GR     5764     1190     5766     1240     5768     1250     5770     1340     5772     1355

QT        2     1170     1170
        BEGIN CHANNEL TRANSITION
X1     5133       13     1155     1175       28       28       28
GR     5772     1000     5770     1030     5768     1065   5764.7     1145   5764.2     1155
GR   5758.2     1161   5758.2     1169   5764.2     1175   5765.2     1185     5766     1250
GR     5768     1265     5770     1280     5772     1370
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        FEMA SECTION J - END CHANNEL TRANSITION
X1     5335        11      1115      1135       200       205       202
GR     5774      1000      5772      1050      5770      1080    5769.2      1105    5768.7      1115
GR   5762.7      1121    5762.7      1129    5768.7      1135      5770      1160      5772      1190
GR     5774      1230

        FEMA SECTION K - BEGIN CHANNEL TRANSITION
X1     5453         9      1060      1089       118       118       118
GR     5774      1000      5772      1045    5770.8      1050    5770.3      1060    5765.3      1070
GR   5765.3      1079    5770.3      1089      5772      1120      5774      1150

        END CHANNEL TRANSITION
X1     5557        10      1055      1084       104       104       104
GR     5778      1000      5776      1030      5774      1050    5772.9      1055    5767.9      1065
GR   5767.9      1074    5772.9      1084      5774      1090      5776      1115      5777      1135

        BEGIN CHANNEL TRANSITION
X1     5589         9      1050      1067        32        32        32
GR     5780      1000      5778      1030      5776      1045    5773.7      1050    5768.7      1050
GR   5768.7      1067    5773.7      1067      5776      1075      5780      1085

NC        0         0         0        .3        .5
        FEMA SECTION L - OUTFALL DETENTION POND BOX CULVERT - DOUBLE 8'x 6'
X1     5615         4      1000      1017        26        26        26
X3       10         0         0         0         0         0         0      5780      5780
GR   5780.1      1000    5769.3      1000    5769.3      1017    5780.1      1017

SB     1.05       1.6       2.6         0        17         1        96       .01    5769.8    5769.3
        FEMA SECTION M - ENTRANCE DETENTION POND BOX CULVERT - DOUBLE 8'x 6'
X1     5675         8      1030      1047        60        60        60
X2        0         0         1    5775.8    5779.4
X3       10         0         0         0         0         0         0    5779.4    5779.4
BT        8      1000      5784      5784      1019    5779.4    5779.4      1030    5779.4    5775.8
BT     1030    5779.4    5775.8      1047    5779.4    5775.8      1047    5779.4    5775.8      1058
BT   5779.4    5779.4      1077      5784      5784
GR     5784      1000    5779.4      1019    5779.4      1030    5769.8      1030    5769.8      1047
GR   5779.4      1047    5779.4      1058      5784      1077

NC        0         0         0        .1        .3
        FEMA SECTION N - DETENTION POND BOX CULVERT HEADWALL
X1     5702        10      1238      1262        27        27        27
GR     5784      1000      5776      1050      5774      1080      5772      1160      5770      1238
GR     5770      1262      5772      1325      5774      1370      5782      1450    5783.5      1480

GT        2      1405      1405
NC        0         0      .040         0         0
        FEMA SECTION O
X1     6000        10      1055      1645       298       298       298
GR     5784      1000      5776      1055      5774      1070      5772      1120    5771.4      1290
GR     5772      1335      5774      1615      5776      1645      5782      1675      5784      1700
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        FEMA SECTION P
X1    6300        8      1105      1510       230       390       300
GR    5794     1000      5776      1105      5774      1165    5773.1      1295    5773.9      1350
GR    5774     1425      5776      1510      5794      1585

QT       2     1365      1365
        FEMA SECTION Q - END DROP STRUCTURE RIPRAP APRON
X1    6607       14      1260      1390       307       307       307
GR    5794     1000      5792      1015      5790      1030      5788      1055      5786      1075
GR    5784     1080      5782      1195      5780      1235      5778      1260    5776.2      1300
GR  5776.2     1350      5778      1390      5780      1410      5794      1490

        DROP STRUCTURE BOTTOM
X1    6636        8      1100      1230        29        29        29
GR    5788     1000      5786      1045    5785.9      1100    5776.9      1140    5776.9      1190
GR  5785.9     1230      5786      1260      5788      1285

        DROP STRUCTURE CREST (4' VERTICAL DROP)
X1    6637       14      1100      1230         1         1         1
GR    5788     1000      5786      1045    5785.9      1100    5785.9      1120    5780.9      1140
GR  5780.9     1153    5778.9      1159    5778.9      1171    5780.9      1177    5780.9      1190
GR  5785.9     1210    5785.9      1230      5786      1260      5788      1285

        END DROP STRUCTURE RIPRAP APRON
X1    6817        9      1085      1215       210       155       180
GR    5800     1000      5796      1015      5794      1030      5792      1050    5790.6      1085
GR  5781.6     1125    5781.6      1175    5790.6      1215      5800      1255

        DROP STRUCTURE BOTTOM
X1    6846        9      1085      1215        29        29        29
GR    5800     1000      5796      1015      5794      1040      5792      1080    5790.7      1085
GR  5781.7     1125    5781.7      1175    5790.7      1215      5800      1250

        DROP STRUCTURE CREST (4' VERTICAL DROP)
X1    6847       15      1085      1215         1         1         1
GR    5800     1000      5796      1015      5794      1040      5792      1080    5790.7      1085
GR  5790.7     1105    5785.7      1125    5785.7      1138    5783.7      1144    5783.7      1156
GR  5785.7     1162    5785.7      1175    5790.7      1195    5790.7      1215      5800      1250

        END RIPRAP APRON
X1    6992       10      1080      1210       145       145       145
GR    5804     1000      5802      1005      5800      1020      5798      1065      5796      1075
GR  5795.3     1080    5786.3      1120    5786.3      1170    5795.3      1210      5804      1245

        BEGIN RIPRAP APRON/DROP STURCTURE BOTTOM
X1    7032        8      1120      1170        40        40        40
GR    5806     1000      5804      1010      5802      1050      5800      1065    5786.4      1120
GR  5786.4     1170      5802      1220      5806      1250
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NC       0         0       .013         0         0
       FEMA SECTION R - DROP STRUCTURE CREST (5.4' SLOPING DROP)/144" CMP STORM
       SEWER OUTFALL SOUTH OF WABEMAN DRIVE
X1    7072         9      1000      1012        40        40        40
X3      10         0         0         0         0         0         0      5806      5806
GR    5806      1000    5797.8      1000    5794.8    1000.8    5792.8    1002.7    5791.8      1006
GR  5792.8    1009.3    5794.8    1011.2    5797.8      1012      5806      1012

QT       2      1315      1315
ET                        7.4
NC    .050      .050      .080         0         0
       FEMA SECTION W - UPSTREAM OF BRADLEY ROAD BOX CULVERT - DOUBLE 10' x 6'
X1    8450        21      1236      1376        .1        .1        .1
RC       3         0      5815       685    5820.4      1315    5825.7
GR    5832      1000      5830      1020      5828      1045      5826      1075      5824      1110
GR    5822      1130      5820      1170      5818      1220    5816.9      1236      5816      1250
GR  5815.2      1330      5816      1355    5816.9      1376      5818      1400      5820      1405
GR    5822      1435      5824      1465      5826      1490      5828      1535      5830      1585
GR    5832      1620

QT       2      1375      1375
       FEMA SECTION X
X1    8875        19      1397      1477       400       435       425
GR    5834      1000      5832      1070      5830      1130      5828      1175      5826      1225
GR    5824      1275      5822      1350      5820      1375    5819.6      1397    5818.5      1455
GR  5819.6      1477      5820      1485      5822      1505      5824      1530      5826      1550
GR    5828      1565      5830      1590      5832      1620      5834      1645

       FEMA SECTION Y
X1    9300        15      1369      1439       390       445       425
GR    5836      1000      5834      1060      5832      1155      5830      1320      5828      1365
GR  5827.2      1369      5826      1375    5824.2      1380      5826      1420    5827.2      1439
GR    5828      1455      5830      1475      5832      1505      5834      1535      5836      1550

QT       2      1045      1045
       FEMA SECTION Z
X1    9700        15      1262      1332       470       355       400
GR    5840      1000      5838      1065      5836      1150      5834      1245    5832.3      1262
GR    5832      1265      5830      1275    5829.2      1280      5830      1315      5832      1330
GR  5832.3      1332      5834      1345      5836      1400      5838      1415      5840      1425

       FEMA SECTION AA
X1   10150        20      1253      1323       505       405       450
GR    5850      1000      5848      1010      5846      1025      5844      1050      5842      1095
GR    5840      1190      5838      1240    5837.3      1253      5836      1275    5834.6      1290
GR    5836      1310    5837.3      1323      5838      1330      5840      1345    5841.6      1365
GR    5842      1400      5844      1425      5846      1475      5848      1515      5850      1535
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        FEMA SECTION AB - DOWNSTREAM OF IRRIGATION CANAL NO. 4
X1    10625        23      1243      1313       500       465       475
GR     5860      1000      5858      1025      5856      1045      5854      1065      5854      1165
GR     5852      1175      5850      1185      5848      1195      5846      1210      5844      1230
GR   5843.4      1243      5842      1275    5843.4      1313      5844      1330      5846      1345
GR     5848      1360      5850      1370      5852      1380      5854      1390      5854      1480
GR     5856      1520      5858      1580      5860      1635

NC        0         0      .050         0         0
        FEMA SECTION AC - UPSTREAM OF IRRIGATION CANAL NO. 4
X1    10675        12      1240      1320        50        50        50
GR     5862      1000      5860      1025      5858      1050      5856      1070      5854      1095
GR     5854      1240      5854      1320      5854      1470      5856      1510      5858      1565
GR     5860      1615      5862      1715

        FEMA SECTION AD
X1    10900        12      1090      1170       225       225       225
GR     5864      1000      5862      1055      5856      1075      5854      1080      5854      1090
GR     5854      1170      5854      1235      5856      1265      5858      1295      5860      1330
GR     5862      1385      5864      1450

        FEMA SECTION AE
X1    11350       .13      1056      1146       420       560       450
GR     5866      1000      5858      1020      5856      1035    5854.6      1056      5854      1065
GR     5854      1140    5854.6      1146      5856      1160      5858      1175      5860      1195
GR     5862      1225      5864      1250      5866      1275

ET                         10.4
        FEMA SECTION AF
X1    11825        16      1067      1157       470       480       475
GR     5870      1000      5860      1025      5858      1050    5857.1      1067      5856      1090
GR   5855.1      1105      5856      1140    5857.1      1157      5858      1170      5860      1200
GR     5862      1230      5864      1255      5866      1285      5868      1305    5868.4      1320
GR     5870      1350

        FEMA SECTION AG
X1    12275        17      1082      1182       460       400       450
GR     5874      1000      5862      1050    5860.7      1082      5860      1100      5858      1120
GR   5857.4      1125      5858      1135      5860      1175    5860.7      1182      5862      1195
GR     5864      1215      5866      1240      5868      1265      5870      1275      5871      1280
GR     5872      1370      5874      1380

        FEMA SECTION AH
X1    12750        21      1267      1367       470       530       475
GR     5876      1000      5874      1035      5872      1070      5870      1130      5868      1190
GR     5866      1250    5864.2      1267      5864      1270      5862      1285      5860      1305
GR   5859.8      1325      5860      1330      5862      1345      5864      1365    5864.2      1367
GR     5866      1385      5868      1405      5870      1435      5872      1505      5874      1560
GR     5876      1590
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QT      2       825      825
NC      0         0     .080       0         0
        FEMA SECTION AI
X1  13200        19     1244    1334       475       430       450
GR   5880      1000     5878    1045      5876      1075      5874      1090      5872      1110
GR   5870      1170     5868    1220    5866.6      1244      5866      1255    5864.7      1290
GR   5866      1330   5866.6    1334      5868      1345      5870      1360      5872      1405
GR   5874      1510     5876    1535      5878      1555      5880      1565

        FEMA SECTION AJ
X1  13625        17     1285    1365       490       375       425
GR   5884      1000     5882    1020      5880      1055      5878      1105      5876      1140
GR   5874      1230     5872    1265    5871.5      1285    5870.6      1320    5871.5      1365
GR   5872      1395     5874    1445      5876      1520      5878      1560      5880      1620
GR   5882      1650     5884    1680

        FEMA SECTION AK
X1  14075        15     1331    1421       430       470       450
GR   5890      1000     5888    1035      5886      1085      5884      1110      5882      1145
GR   5880      1305   5879.5    1331    5878.7      1380    5879.5      1421      5880      1445
GR   5882      1515     5884    1610      5886      1685      5888      1725      5890      1770

QT      2       370      370
        FEMA SECTION AL
X1  14500        13     1327    1387       410       445       425
GR   5892      1000     5890    1085      5888      1130      5886      1210      5884      1305
GR  5883.8      1327   5883.6    1345    5883.8      1387      5884      1445      5886      1470
GR   5888      1485     5890    1500      5892      1515

        FEMA SECTION AM
X1  14950        15     1176    1256       500       350       450
GR   5902      1000     5900    1030      5898      1060      5896      1090      5894      1110
GR   5892      1140   5891.1    1176    5890.4      1205    5891.1      1256      5892      1320
GR   5894      1460     5896    1585      5898      1620      5900      1645      5902      1660

        FEMA SECTION AN
X1  15400        15     1313    1393       405       510       450
GR   5910      1000     5908    1020      5906      1065      5904      1115      5902      1170
GR   5900      1215   5898.7    1313      5898      1360    5898.7      1393      5900      1460
GR   5902      1500     5904    1535      5906      1575      5908      1615      5910      1635

NC      0         0     .050       0         0
        FEMA SECTION AO
X1  15800        17     1318    1368       420       390       400
GR   5920      1000     5918    1025      5916      1085      5914      1125      5912      1160
GR   5910      1180     5908    1245    5907.2      1318    5906.8      1350    5907.2      1368
GR   5908      1410     5910    1450      5912      1470      5914      1495      5916      1510
GR   5918      1530     5920    1545
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FEMA SECTION AP

X1	16200	19	1304	1354	390	410	400			
GR	5930	1000	5928	1040	5926	1075	5924	1125	5922	1165
GR	5920	1205	5918	1235	5916	1270	5915.5	1304	5915.1	1330
GR	5915.5	1354	5916	1385	5918	1445	5920	1490	5922	1510
GR	5924	1535	5926	1555	5928	1575	5930	1595		

FEMA SECTION AQ - SOUTH OF DRENNAN ROAD

X1	16600	17	225	275	385	420	400			
GR	5940	0	5938	35	5936	60	5934	90	5932	125
GR	5930	165	5928	200	5926	225	5924.3	255	5926	275
GR	5928	295	5930	335	5932	375	5934	410	5936	440
GR	5938	475	5940	500						

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     L-BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*PROF 1


CCHV=     .100 CEHV=     .300
*SECNO 2864.000
       FEMA SECTION A - 144" CMP STORM SEWER ENTRANCE SOUTH OF GRAND BOULEVARD
  2864.000      8.15   5734.75       .00   5734.75   5735.54       .79       .00       .00   5734.30
    1167.0       1.8    1162.8       2.4       5.9     163.0       7.7        .0        .0   5734.30
       .00       .31      7.13       .31      .040      .013      .040      .000   5726.60   1313.54
   .000508        0.        0.        0.         0         0         0       .00     80.85   1394.40


*SECNO 2893.000
       STEP IN CHANNEL WALL (0.5' STEP)
  2893.000      7.93   5734.73       .00       .00   5735.57       .84       .02       .02   5734.30
    1167.0        .4    1165.7        .9       1.4     158.6       2.8        .1        .0   5734.30
       .00       .31      7.35       .31      .040      .013      .040      .000   5726.80   1173.55
   .000551       29.       29.       29.         2         0         0       .00     39.36   1212.91


*SECNO 2997.000
       GRADE BREAK IN CHANNEL WALL
  2997.000      7.76   5734.76       .00       .00   5735.64       .88       .06       .01   5735.00
    1167.0        .0    1167.0        .0        .0     155.3        .0        .5        .1   5735.00
       .00       .00      7.51       .00      .000      .013      .000      .000   5727.00   1370.00
   .000605      104.      104.      104.         2         0         0       .00     20.00   1390.00


CCHV=     .300 CEHV=     .500
*SECNO 3017.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=     5737.10 ELREA=     5737.10

       FEMA SECTION B - OUTFALL GRAND BOULEVARD BOX CULVERT - DOUBLE 9' x 7'
  3017.000      7.72   5734.72       .00       .00   5735.71       .98       .01       .05   5737.10
    1167.0        .0    1167.0        .0        .0     146.8        .0        .6        .1   5737.10
       .01       .00      7.95       .00      .000      .013      .000      .000   5727.00   1530.00
   .000700       20.       20.       20.         2         0         0       .00     19.00   1549.00
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.60	2.60	.00	19.00	1.00	126.00	.01	5727.10	5727.00

*SECNO 3067.000
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	WEIRLN
5736.48	5735.71	.19	0.	1058.	126.	126.	5734.10	5738.00	0.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 5738.00 ELREA= 5738.00

FEMA SECTION C - ENTRANCE GRAND BOULEVARD BOX CULVERT - DOUBLE 9'x 7'

3067.000	8.75	5735.85	.00	.00	5736.48	.63	.77	.00	5738.00
1058.0	.0	1058.0	.0	.0	166.3	.0	.7	.1	5738.00
.01	.00	6.36	.00	.000	.013	.000	.000	5727.10	1015.00
.000410	50.	50.	50.	2	0	0	.00	19.00	1034.00

CCHV= .100 CEHV= .300
*SECNO 3071.000
DROP STRUCTURE END SILL

3071.000	8.75	5735.85	.00	.00	5736.48	.63	.00	.00	5737.90
1058.0	.0	1058.0	.0	.0	166.3	.0	.8	.1	5737.90
.01	.00	6.36	.00	.000	.013	.000	.000	5727.10	1015.00
.000410	4.	4.	4.	0	0	0	.00	19.00	1034.00

*SECNO 3098.000
DROP STRUCTURE BOTTOM

3098.000	8.76	5735.86	.00	.00	5736.49	.63	.01	.00	5737.20
1058.0	.0	1058.0	.0	.0	166.5	.0	.9	.2	5737.20
.01	.00	6.36	.00	.000	.013	.000	.000	5727.10	1015.00
.000409	27.	27.	27.	0	0	0	.00	19.00	1034.00

*SECNO 3114.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3301 HV CHANGED MORE THAN HVINS

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
DROP STRUCTURE CREST (8.5' SLOPING DROP)/END CHANNEL TRANSITION

3114.000	4.57	5736.17	5736.17	.00	5738.48	2.31	.01	.50	5736.80
1058.0	.0	1058.0	.0	.0	86.8	.0	.9	.2	5736.80
.01	.00	12.19	.00	.000	.013	.000	.000	5731.60	1015.00
.002530	16.	16.	16.	20	11	0	.00	19.00	1034.00

*SECNO 3142.000
3280 CROSS SECTION 3142.00 EXTENDED .49 FEET

3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION D - BEGIN CHANNEL TRANSITION

3142.000	6.29	5738.29	5738.29	.00	5740.27	1.97	.06	.03	5737.90
1061.0	.6	1046.9	13.5	1.1	92.2	11.1	1.0	.2	5737.30
.01	.51	11.35	1.22	.040	.013	.040	.000	5732.00	1009.14
.001677	28.	28.	28.	20	11	0	.00	40.86	1050.00

*SECNO 3250.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3250.000	6.40	5739.50	5739.50	.00	5741.63	2.12	.19	.04	5739.10
1080.0	.7	1078.0	1.3	1.2	92.1	2.4	1.2	.3	5739.10
.01	.55	11.71	.55	.040	.013	.040	.000	5733.10	1008.94
.001841	105.	108.	110.	20	5	0	.00	38.17	1047.11

*SECNO 3625.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
FEMA SECTION E

3625.000	6.36	5743.26	5743.26	.00	5745.43	2.17	.70	.01	5742.90
1080.0	1.3	1078.5	.2	2.6	91.2	.3	2.0	.6	5742.90
.02	.52	11.83	.51	.040	.013	.040	.000	5736.90	1025.64
.001904	370.	375.	380.	20	5	0	.00	36.09	1061.74

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	L-BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	R-BANK ELEV
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

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*SECNO 4100.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
        FEMA SECTION F
  4100.000      6.44   5750.14   5750.14       .00   5752.23      2.09       .88       .01   5749.70
    1080.0        .8    1077.1       2.1       1.4      92.8       3.3       3.1       1.0   5749.70
       .03       .57     11.61       .63      .040      .013      .040      .000   5743.70   1008.44
   .001794      475.      475.      475.        20         5         0       .00     42.76   1051.20


*SECNO 4575.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
        FEMA SECTION G
  4575.000      5.97   5756.17   5756.17       .00   5758.31      2.14       .92       .02   5756.20
     980.0        .0     980.0        .0        .0      83.5        .0       4.1       1.4   5756.20
       .04       .00     11.74       .00      .000      .013      .000      .000   5750.20   1085.03
   .002103      485.      475.      465.        20        11         0       .00     19.95   1104.97


*SECNO 5015.000
3685 20 TRIALS ATTEMPTED WSEL,CWSEL
3693 PROBABLE MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED
        END CHANNEL TRANSITION
  5015.000      5.96   5761.66   5761.66       .00   5763.81      2.15       .93       .00   5761.70
     980.0        .0     980.0        .0        .0      83.2        .0       4.9       1.6   5761.70
       .05       .00     11.78       .00      .000      .013      .000      .000   5755.70   1105.04
   .002120      435.      440.      445.        20         5         0       .00     19.92   1124.96


*SECNO 5043.000

3301 HV CHANGED MORE THAN HVINS


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.47

        BEGIN CHANNEL TRANSITION
  5043.000      7.66   5763.46       .00       .00   5764.00       .54       .02       .16   5761.80
     980.0      26.8     927.8      25.4      38.7     153.1      41.5       5.0       1.6   5761.80
       .06       .69      6.06       .61      .040      .013      .040      .000   5755.80   1059.43
   .000349       28.       28.       28.         3         0         0       .00    123.13   1182.56
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