JERRY R. JONES & ASSOCIATES, INC.
ENGINEERS · PLANNERS · SURVEYORS

AREA DRAINAGE MASTER STUDY
APACHE WASH
DRAINAGE/STORM DRAIN MASTER PLAN

Prepared by
Jerry R. Jones & Associates, Inc.

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VOL II

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VOLUME II: TECHNICAL APPENDIX

Registered Professional Engineer (Civil)
CERTIFICATE NO
20935
PETER S.
MILLER
Date signed 7-24-90
ARIZONA, U.S.A.

Registered Professional Engineer (Civil)
CERTIFICATE NO
15577
ROGER E.
BOLE
Date signed 7-24-90
ARIZONA, U.S.A.

VOLUME II
TECHNICAL APPENDIX

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HEC 1 COMPUTER MODEL

FEMA MAPS

HYDROLOGIC, HYDRAULIC DATA, AND CROSS SECTIONS

Registered Professional Engineer (Civil)
CERTIFICATE NO.
20035
PETER S.
MILLER
Date signed 7-24-90
ARIZONA, U.S.A.

Registered Professional Engineer (Civil)
CERTIFICATE NO.
15677
ROGER E.
BAELE
7-24-90

TABLE I
SOILS DATA

AREA	TOTAL AREA (A.C.)	SOILS GROUP B	C	D
A	307	105	0	202
B	293	27	0	266
C	751	101	69	581
D	766	51	122	593
E	907	241	153	513
F	1,586	294	561	731
G	486	29	352	105
10	614	128	0	486
11	868	276	124	468
12	1,204	25	546	633
13	95	79	0	16
14	802	39	193	570
20	437	179	15	243
21	323	66	68	189
22	329	69	19	241
23	1,095	209	159	727
24	1,865	151	486	1,228
25	902	127	240	535
30	317	104	12	201
40	355	147	145	63
41	569	221	9	339
42	70	48	0	22
43	891	119	382	390
44	394	81	131	182
50	736	188	219	329
60	281	93	130	58
70	1,408	832	179	397
80	864	238	383	243

TABLE II
TIME LAG CALCULATIONS

Basin Designation	CN	CN*	L	Lca	Cw	Sc	c*	Tc	TL**
10	85.7	88.5	11500	5750	0.55	0.0081	57	0.93	0.55
11	85.6	88.4	14250	7125	0.55	0.0169	49	0.75	0.45
12	86.4	89.1	12500	8000	0.57	0.04	34	0.43	0.26
13	78.9	83.3	5000	2500	0.41	0.014	31	0.40	0.24
14	86.7	89.3	12000	9000	0.58	0.049	32	0.42	0.25
20	83.4	86.6	9750	4875	0.50	0.009	52	0.82	0.49
21	85.1	88.0	12500	6250	0.54	0.014	49	0.75	0.45
22	85.5	88.4	7875	3940	0.55	0.011	40	0.57	0.34
23	85.5	88.4	11500	5750	0.55	0.035	32	0.42	0.25
24	86.3	89.0	16000	5000	0.57	0.034	34	0.43	0.26
25	85.7	88.5	9880	4000	0.55	0.049	24	0.28	0.17
30	84.3	87.3	12250	6125	0.52	0.011	44	0.65	0.39
40	82.2	85.8	9000	5000	0.48	0.01	50	0.77	0.46
41	83.7	86.9	10500	4000	0.51	0.0126	43	0.63	0.38
42	80.5	84.5	1500	750	0.44	0.0133	15	0.17	0.10
43	85.2	88.1	14000	4000	0.54	0.0194	39	0.55	0.33
44	84.7	87.7	9000	4000	0.53	0.034	27	0.35	0.21
50	84.3	87.3	17500	8750	0.52	0.0123	64	1.10	0.66
60	83.0	86.4	7500	3000	0.49	0.020	30	0.4	0.24
70	84.9	87.8	23000	11500	0.53	0.022	59	0.98	0.59
80	83.6	86.8	21500	11000	0.51	0.017	64	1.10	0.66
G	85.1	88	8000	2500	0.54	0.019	29	0.37	0.22
F	84.9	87.8	14500	5000	0.53	0.004	79	1.5	0.90
E	84.6	87.6	15000	6500	0.53	0.01	60	1.0	0.60
D	86.8	89.3	12000	3000	0.58	0.019	33	0.43	0.26
C	86.3	89.0	8500	4250	0.57	0.03	28	0.35	0.21
B	87.0	89.5	7000	3000	0.58	0.04	21	0.25	0.15
A	84.7	87.7	8000	5000	0.53	0.026	31	0.40	0.24
1	85.5	88.4	17000	8500	0.55	0.008	73	1.33	0.80
2	87.7	90.1	21000	10500	0.60	0.012	68	1.13	0.68

* From Pima County Flood Control Hydrology Method

** TL=0.6 Tc From A Guide to Hydrologic Analysis Using SCS Method By McCuen

HEC 1 COMPUTER MODEL
EXISTING CONDITIONS

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*             FEBRUARY 1981             *
*           REVISED 30 OCT 81           *
*                                       *
*  RUN DATE       4-J    TIME      08:1 *
*                                       *
*****************************************
```

```
*****************************************
*                                       *
*    U.S. ARMY CORPS OF ENGINEERS       *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*        DAVIS, CALIFORNIA 95616        *
*  (916) 440-3285 OR (FTS) 448-3285     *
*                                       *
*****************************************
```

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

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

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE. THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. SEE SEPTEMBER 1981 INPUT DESCRIPTION FOR NEW DEFINITIONS.

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

 1          ID   HEC1 EXISTING WATERSHED FILE AWT1.DAT CASE 1
 2          ID   APACHE WASH EXISTING DEVELOPMENT
 3          ID   REVISED FOR PCDOT TIME OF CONC. & FCDMC COMMENTS  6-21-89,5-29-90
            ADIAGRAM
 4          IT      10 15FEB89             145
 5          IO       5       0

 6          KK    70   SCS METHOD
 7          KM     RUNOFF FROM AREA 70
 8          KO       3
 9          BA    2.20
10          IN      30
11          PB     4.6
12          PC       0   0.005   0.009    0.01   0.013   0.019   0.021   0.028   0.032   0.044
13          PC   0.057     0.1    0.66   0.745   0.776     0.8   0.816   0.830   0.840   0.850
14          PC   0.861   0.868   0.878   0.884   0.891     0.9   0.905   0.912   0.919   0.923
15          PC   0.930   0.934   0.939   0.944   0.950   0.958   0.961   0.963   0.969   0.971
16          PC   0.974   0.979   0.981   0.985   0.989   0.991   0.993   0.996     1.0
17          LS       0    84.9       1
18          UD    0.59

19          KK    80
20          KM     RUNOFF FROM AREA 80
21          KO       3
22          BA    1.35
23          PB     4.6
24          LS       0    83.6       1
25          UD    0.66

26          KK    80T
27          KM     COMBINE RUNOFF FROM 70.80
28          HC       2

29          KK    G
30          KM    ROUTE 80T TO AREA G
31          RK    3000   0.005   0.035           TRAP       0      50

32          KK     G
33          KM    RUNOFF FROM AREA G
34          KO       3
35          BA    0.76
36          PB     4.6
37          LS       0    85.1       5
38          UD    0.22

39          KK     GT
40          KM    COMBINE RUNOFF FROM 70.80,G
41          HC       2

42          KK    50
43          KM    ROUTE G TO AREA 50
44          RK    1500   0.005   0.010           TRAP       2      10
```

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

  45          KK    60
  46          KM    RUNOFF FROM AREA 60
  47          KO       3
  48          BA    0.44
  49          PB     4.6
  50          LS       0      83       1
  51          UD    0.24

  52          KK   60T
  53          KM    ROUTE TO 50T
  54          RK    1500   0.008   0.010            TRAP       2      10

  55          KK   50
  56          KM     RUNOFF FROM AREA 50
  57          KO       3
  58          BA    1.15
  59          PB     4.6
  60          LS       0    84.3     1.5
  61          UD    0.66

  62          KK   50T
  63          KM    COMBINE 60,50.GT
  64          HC       3

  65          KK   40
  66          KM    ROUTE 50TA TO AREA 40
  67          RK    1000   0.005   0.020            TRAP      10      25

  68          KK    44
  69          KM     RUNOFF FROM AREA 44
  70          BA    0.62
  71          PB     4.6
  72          LS       0    84.7
  73          UD    0.21

  74          KK   42T
  75          KM   ROUTE TO 42T
  76          RK    2000   0.016   0.035            TRAP       5      10

  77          KK    43
  78          KM    RUNOFF FROM 43
  79          BA    1.39
  80          PB     4.6
  81          LS       0    85.2       1
  82          UD    0.33

  83          KK    43T
  84          KM   ROUTE 44 TO 42T
  85          RK    1500   0.016   0.035            TRAP       5      10
```

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

  86          KK   42
  87          KM    RUNOFF FROM 42
  88          BA    0.11
  89          PB     4.6
  90          LS       0    80.5       1
  91          UD    0.53

  92          KK   42T
  93          KM   COMBINE 44,43.42
  94          HC       3

  95          KK   41T
  96          KM   ROUTE TO 41T
  97          RK    4200   0.010   0.035            TRAP       5      50

  98          KK    41
  99          KM    RUNOFF FROM AREA 41
 100          BA    0.89
 101          PB     4.6
 102          LS       0    83.7     1.5
 103          UD    0.38

 104          KK   41T
 105          KM    COMBINE 40T.41
 106          HC       2

 107          KK    40T
 108          KM    ROUTE 41T TO 40
 109          RK    6500   0.006  0.035            TRAP       5      50

 110          KK    40
 111          KM    RUNOFF FROM AREA 40
 112          BA    0.56
 113          PB     4.6
 114          LS       0    82.2       2
 115          UD    0.46

 116          KK    40T
 117          KM    COMBINE 40.41T,50T
 118          HC       3

 119          KK   30
 120          KM    ROUTE 40TA TO AREA 30
 121          RK    3000   0.004  0.035            TRAP      10      50

 122          KK    30
 123          KM    RUNOFF FROM AREA 30
 124          KO       3
 125          BA    0.50
 126          PB     4.6
 127          LS       0    84.3     1.2
 128          UD    0.39
```

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

129         KK    30T
130         KM    COMBINE 40TA AND 30
131         HC       2

132         KK    F
133         KM    ROUTE 30T TO POINT F
134         RK    6000  0.0025   0.035            TRAP      12      50

135         KK    F
136         KM    RUNOFF FROM AREA F
137         KO       3
138         BA    2.45
139         PB     4.6
140         LS       0    84.9       1
141         UD    0.90

142         KK    FT
143         KM    COMBINE 30T AND F
144         HC       2

145         KK    25
146         KM     RUNOFF FROM AREA 25
147         BA    1.41
148         PB     4.6
149         LS       0    85.7       1
150         UD    0.17

151         KK    24
152         KM    RUNOFF FROM 24
153         BA    2.91
154         PB     4.6
155         LS       0    86.3       1
156         UD    0.26

157         KK   24T
158         KM    COMBINE 24.25
159         HC       2

160         KK    23T
161         KM    ROUTE TO 23
162         RK    9500  0.0092   0.065            TRAP       8      50

163         KK    23
164         KM    RUNOFF FROM 23
165         BA    1.71
166         PB     4.6
167         LS       0    85.5       1
168         UD    0.25
```

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

 169          KK    23T
 170          KM    COMBINE 24T,23
 171          HC       2

 172          KK    22T
 173          KM    ROUTE  TO 22T
 174          RK    8000   0.007   0.065           TRAP      8      50

 175          KK    22
 176          KM    RUNOFF FROM AREA 22
 177          BA    0.51
 178          PB     4.6
 179          LS       0    85.5       1
 180          UD    0.34

 181          KK    22T
 182          KM    COMBINE RUNOFF FROM 22.23T
 183          HC       2

 184          KK    21T
 185          KM    ROUTE TO 20T
 186          RK    8500   0.005   0.065           TRAP     10      50

 187          KK   21
 188          KM    RUNOFF FROM 21
 189          BA    0.51
 190          PB     4.6
 191          LS       0    85.1       2
 192          UD    0.45

 193          KK    20T
 194          KM     ROUTE TO 20T
 195          RK    7000   0.005   0.035           TRAP      5      50

 196          KK    20
 197          KM    RUNOFF FROM 20
 198          BA    0.68
 199          PB     4.6
 200          LS       0    83.4
 201          UD    0.49

 202          KK    20T
 203          KM    COMBINE 21.22T,20,FT
 204          HC       4

 205          KK    10
 206          KM    ROUTE TO 10
 207          RK    1000   0.004   0.020           TRAP     12      25
```

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

 208          KK    14
 209          KM     RUNOFF FROM AREA 14
 210          BA    1.25
 211          PB     4.6
 212          LS       0    86.7
 213          UD    0.25

 214          KK    13T
 215          KM    ROUTE TO 13T
 216          RK    5000   0.016   0.035           TRAP      12      50

 217          KK   13
 218          KM     RUNOFF FROM AREA 13
 219          BA    0.15
 220          PB     4.6
 221          LS       0    78.9
 222          UD    0.24

 223          KK    13T
 224          KM   COMBINE 14.13
 225          HC       2

 226          KK    12
 227          KM    RUNOFF FROM AREA 12
 228          BA    1.89
 229          PB     4.6
 230          LS       0    86.4
 231          UD    0.26

 232          KK    12T
 233          KM   COMBINE 13T,12
 234          HC       2

 235          KK    12T
 236          KM    ROUTE TO AREA 11
 237          RK    3000   0.016   0.155           TRAP      12      50

 238          KK    11
 239          KM    RUNOFF FROM AREA 11
 240          BA    1.36
 241          PB     4.6
 242          LS       0    85.6
 243          UD    0.45

 244          KK   11T
 245          KM   COMBINE 11.12T
 246          HC       2

 247          KK    11T
 248          KM    ROUTE 11T TO AREA 10
 249          RK    7000   0.006   0.065           TRAP      12      50
```

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

 250          KK    10
 251          KM    RUNOFF FROM BASIN 10
 252          BA    0.96
 253          PB     4.6
 254          LS       0    85.7       1
 255          UD    0.55

 256          KK    10T
 257          KM    COMBINE 10,11T,20T
 258          HC       3

 259          KK    E
 260          KM    ROUTE 10T TO POINT E
 261          RK   13000   0.003   0.055           TRAP      12      50

 262          KK    E
 263          KM    RUNOFF FROM AREA E
 264          KO       3
 265          BA    1.42
 266          PB     4.6
 267          LS       0    84.6
 268          UD    0.60

 269          KK    ET
 270          KM    COMBINE 10T AND E
 271          HC       2

 272          KK    D
 273          KM    RUNOFF FROM AREA D
 274          KO       3
 275          BA    1.20
 276          PB     4.6
 277          LS       0    86.8
 278          UD    0.26

 279          KK    DT
 280          KM    COMBINE D AND ET
 281          HC       2

 282          KK    DTR
 283          KM    ROUTE TO POINT C
 284          RK    8000   0.003   0.035           TRAP      12      50

 285          KK    C
 286          KM    RUNOFF FROM AREA C
 287          KO       3
 288          BA    1.17
 289          PB     4.6
 290          LS       0    86.3
 291          UD    0.21
```

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

 292          KK    2
 293          KM    RUNOFF FROM AREA 2
 294          KO       3
 295          BA    1.06
 296          PB     4.6
 297          LS       0    87.7
 298          UD    0.68

 299          KK    1
 300          KM    ROUTE TO 1,C
 301          RK   17000   0.006   0.035           TRAP      12      50

 302          KK    1
 303          KM    RUNOFF FROM AREA 1
 304          KO       3
 305          BA    0.91
 306          PB     4.6
 307          LS       0    85.5
 308          UD    0.80

 309          KK    1T
 310          KM    COMBINE 1,2,DT,C
 311          HC       4

 312          KK    B
 313          KM    RUNOFF FROM AREA B
 314          KO       3
 315          BA    0.46
 316          PB     4.6
 317          LS       0    87.0
 318          UD    0.15

 319          KK    A
 320          KM    RUNOFF FROM AREA A
 321          BA    0.48
 322          PB     4.6
 323          LS       0    84.7
 324          UD    0.24
 325          ZZ
```

SCHEMATIC DIAGRAM OF STREAM NETWORK

```
INPUT
 LINE      (V) ROUTING          (---‡) DIVERSION
  NO.      (.) CONNECTOR        ()---) RETURN OF DIVERTED FLOW

  6        70
              .
              .
 19           .        80
              .           .
              .           .
 26        80T ............
              V
              V
 29        G
              .
              .
 32           .         G
              .           .
              .           .
 39         GT ............
              V
              V
 42        50
              .
              .
 45           .        60
              .           V
              .           V
 52           .       60T
              .           .
              .           .
 55           .           .       50
              .           .          .
              .           .          .
 62       50T  ......................
              V
              V
 65       40
              .
              .
 68           .        44
              .           V
              .           V
 74           .       42T
              .           .
              .           .
 77           .           .       43
              .           .          V
              .           .          V
 83           .           .       43T
              .           .          .
              .           .          .
 86           .           .          .       42
              .           .          .          .
              .           .          .          .
 92           .       42T  ......................
              .           V
              .           V
 95           .       41T
              .           .
              .           .
 98           .           .       41
              .           .          .
```

```
101          .       41T ............
             .          V
             .          V
107          .       40T
             .          .
             .          .
110          .          .       40
             .          .          .
             .          .          .
116       40T ......................
             V
             V
119       30
             .
             .
122          .       30
             .          .
             .          .
129       30T ............
             V
             V
132       F
             .
             .
135          .       F
             .          .
             .          .
142       FT ............
             .
             .
145          .       25
             .          .
             .          .
151          .          .       24
             .          .          .
             .          .          .
157          .      24T ............
             .          V
             .          V
160          .      23T
             .          .
             .          .
163          .          .       23
             .          .          .
             .          .          .
169          .      23T ............
             .          V
             .          V
172          .      22T
             .          .
             .          .
175          .          .       22
             .          .          .
             .          .          .
181          .      22T ............
             .          V
             .          V
184          .      21T
             .          .
             .          .
187          .          .       21
             .          .          V
             .          .          V
193          .          .      20T
             .          .          .
```

```
196          .          .          .        20
             .          .          .          .
             .          .          .          .
202       20T ...................................
             V
             V
205       10
             .
             .
208          .       14
             .          V
             .          V
214          .       13T
             .          .
             .          .
217          .          .      13
             .          .          .
             .          .          .
223          .       13T ............
             .          .
             .          .
226          .          .       12
             .          .          .
             .          .          .
232          .       12T ............
             .          V
             .          V
235          .       12T
             .          .
             .          .
238          .          .       11
             .          .          .
             .          .          .
244          .      11T  ............
             .          V
             .          V
247          .       11T
             .          .
             .          .
250          .          .       10
             .          .          .
             .          .          .
256       10T .........................
             V
             V
259       E
             .
             .
262          .       E
             .          .
             .          .
269       ET  ............
             .
             .
272          .       D
             .          .
             .          .
279       DT  ............
             V
             V
282       DTR
             .
             .
285          .       C
             .          .
```

```
298          .          .       2
             .          .         V
             .          .         V
299          .          .       1
             .          .         .
             .          .         .
302          .          .         .       1
             .          .         .         .
             .          .         .         .
309       1T ..................................
             .
             .
312          .       B
             .          .
             .          .
319          .          .       A
```

(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

```
*****************************************
*                                       *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)   *
*            FEBRUARY 1981              *
*          REVISED 30 OCT 81            *
*                                       *
*  RUN DATE       4-J    TIME      08:1 *
*                                       *
*****************************************
```

```
*                                       *
*   U.S. ARMY CORPS OF ENGINEERS        *
*  THE HYDROLOGIC ENGINEERING CENTER    *
*          609 SECOND STREET            *
*       DAVIS, CALIFORNIA 95616         *
*  (916) 440-3285 OR (FTS) 448-3285     *
*                                       *
*****************************************
```

HEC1 EXISTING WATERSHED FILE AWT1.DAT CASE 1
APACHE WASH EXISTING DEVELOPMENT
REVISED FOR PCDOT TIME OF CONC. & FCDMC COMMENTS 6-21-89,5-29-90

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

    IT        HYDROGRAPH TIME DATA
                    NMIN         10  MINUTES IN COMPUTATION INTERVAL
                   IDATE     15FEB89  STARTING DATE
                   ITIME        0000  STARTING TIME
                      NQ         145  NUMBER OF HYDROGRAPH ORDINATES
                  NDDATE     16FEB89  ENDING DATE
                  NDTIME        0000  ENDING TIME

              COMPUTATION INTERVAL    0.17 HOURS
                   TOTAL TIME BASE   24.00 HOURS

        ENGLISH UNITS
            DRAINAGE AREA         SQUARE MILES
            PRECIPITATION DEPTH   INCHES
            LENGTH, ELEVATION     FEET
            FLOW                  CUBIC FEET PER SECOND
            STORAGE VOLUME        ACRE-FEET
            SURFACE AREA          ACRES
            TEMPERATURE           DEGREES FAHRENHEIT


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


          ***************
          *             *
  6 KK    *     70      *      SCS METHOD
          *             *
          ***************

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

 10 IN        TIME DATA FOR INPUT TIME SERIES
                   JXMIN         30  TIME INTERVAL IN MINUTES
                  JXDATE     15FEB89  STARTING DATE
                  JXTIME          0  STARTING TIME

            SUBBASIN RUNOFF DATA
```

9 BA SUBBASIN CHARACTERISTICS

TAREA 2.20 SUBBASIN AREA

PRECIPITATION DATA

11 PB STORM 4.60 BASIN TOTAL PRECIPITATION

12 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.19	0.19	0.19	0.03	0.03	0.03	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00						

17 LS SCS LOSS RATE

STRTL 0.36 INITIAL ABSTRACTION

CRVNBR 84.90 CURVE NUMBER

RTIMP 1.00 PERCENT IMPERVIOUS AREA

18 UD SCS DIMENSIONLESS UNITGRAPH

TLAG 0.59 LAG

***

UNIT HYDROGRAPH

20 END-OF-PERIOD ORDINATES

226.	731.	1371.	1580.	1429.	1099.	691.	458.	314.	209.
140.	92.	62.	42.	28.	19.	13.	9.	5.	1.

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

HYDROGRAPH AT STATION 70

TOTAL RAINFALL = 4.60, TOTAL LOSS = 1.59, TOTAL EXCESS = 3.01

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
2564.	6.50	(CFS)	587.	177.	177.	177.
		(INCHES)	2.479	2.984	2.984	2.984
		(AC-FT)	291.	350.	350.	350.

CUMULATIVE AREA = 2.20 SQ MI

*** ***

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          ***************
          *             *
19 KK     *     80      *
          *             *
          ***************
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                IPRNT          3  PRINT CONTROL
                IPLOT          0  PLOT CONTROL
                QSCAL         0.  HYDROGRAPH PLOT SCALE

          SUBBASIN RUNOFF DATA

22 BA          SUBBASIN CHARACTERISTICS
                TAREA       1.35  SUBBASIN AREA

               PRECIPITATION DATA

23 PB           STORM       4.60  BASIN TOTAL PRECIPITATION

12 PI            INCREMENTAL PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.01      0.01      0.01      0.19      0.19      0.19      0.03      0.03      0.03      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00

24 LS          SCS LOSS RATE
                STRTL       0.39  INITIAL ABSTRACTION
                CRVNBR     83.60  CURVE NUMBER
                RTIMP       1.00  PERCENT IMPERVIOUS AREA

25 UD          SCS DIMENSIONLESS UNITGRAPH
                TLAG        0.66  LAG

                                                  ***

                                              UNIT HYDROGRAPH
                                         22 END-OF-PERIOD ORDINATES
          107.      340.      680.      866.      857.      722.      523.      346.      240.      170.
          117.       82.       56.       39.       27.       19.       13.        9.        7.        5.
            3.        1.

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

                HYDROGRAPH AT STATION     80

     TOTAL RAINFALL =  4.60. TOTAL LOSS =  1.71, TOTAL EXCESS =  2.89

PEAK FLOW    TIME                          MAXIMUM AVERAGE FLOW
 (CFS)       (HR)                  6-HR      24-HR      72-HR     24.00-HR
  1397.      6.50        (CFS)     343.       104.       104.        104.
                       (INCHES)   2.364      2.862      2.862       2.862
                        (AC-FT)    170.       206.       206.        206.

                CUMULATIVE AREA =    1.35 SQ MI

*** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** *** ***
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          ***************
          *             *
32 KK     *      G      *
          *             *
          ***************
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34 KO        OUTPUT CONTROL VARIABLES
                  IPRNT          3  PRINT CONTROL
                  IPLOT          0  PLOT CONTROL
                  QSCAL         0.  HYDROGRAPH PLOT SCALE

           SUBBASIN RUNOFF DATA

35 BA        SUBBASIN CHARACTERISTICS
                  TAREA       0.76  SUBBASIN AREA

             PRECIPITATION DATA

36 PB             STORM       4.60  BASIN TOTAL PRECIPITATION

12 PI          INCREMENTAL PRECIPITATION PATTERN
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.01      0.01      0.01      0.19      0.19      0.19      0.03      0.03      0.03      0.01
                 0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                 0.00      0.00      0.00      0.00

37 LS        SCS LOSS RATE
                  STRTL       0.35  INITIAL ABSTRACTION
                  CRVNBR     85.10  CURVE NUMBER
                  RTIMP       5.00  PERCENT IMPERVIOUS AREA

38 UD        SCS DIMENSIONLESS UNITGRAPH
                  TLAG        0.22  LAG

                                          ***

                                     UNIT HYDROGRAPH
                                 9 END-OF-PERIOD ORDINATES
          687.     1207.     624.     253.     104.     42.     17.     8.     1.

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

                  HYDROGRAPH AT STATION      G

     TOTAL RAINFALL =  4.60. TOTAL LOSS =  1.51, TOTAL EXCESS =  3.09

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
 (CFS)        (HR)                  6-HR      24-HR      72-HR     24.00-HR
 1438.        6.00        (CFS)     210.       63.        63.        63.
                        (INCHES)   2.568     3.079      3.079      3.079
                         (AC-FT)    104.      125.       125.       125.

                  CUMULATIVE AREA =    0.76 SQ MI
```

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

          ***************
          *             *
45 KK     *     60      *
          *             *
          ***************

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

            SUBBASIN RUNOFF DATA

48 BA          SUBBASIN CHARACTERISTICS
                    TAREA       0.44  SUBBASIN AREA

               PRECIPITATION DATA

49 PB               STORM       4.60  BASIN TOTAL PRECIPITATION

12 PI            INCREMENTAL PRECIPITATION PATTERN
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.01      0.01      0.01      0.19      0.19      0.19      0.03      0.03      0.03      0.01
                  0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                  0.00      0.00      0.00      0.00

50 LS          SCS LOSS RATE
                    STRTL       0.41  INITIAL ABSTRACTION
                   CRVNBR      83.00  CURVE NUMBER
                    RTIMP       1.00  PERCENT IMPERVIOUS AREA

51 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG       0.24  LAG

                                                    ***

                                              UNIT HYDROGRAPH
                                          9 END-OF-PERIOD ORDINATES
          331.      660.      414.      171.       74.       32.       14.        6.        2.

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

                    HYDROGRAPH AT STATION     60

     TOTAL RAINFALL =  4.60, TOTAL LOSS =  1.77, TOTAL EXCESS =  2.83

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                 6-HR       24-HR       72-HR     24.00-HR
   743.       6.17       (CFS)     111.        33.         33.         33.
```

(AL-E1) 55. 66. 66. 66.

CUMULATIVE AREA = 0.44 SQ MI

*** ***

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          ***************
          *             *
55 KK     *     50      *
          *             *
          ***************
```

57 KO OUTPUT CONTROL VARIABLES

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

SUBBASIN RUNOFF DATA

58 BA SUBBASIN CHARACTERISTICS

TAREA	1.15	SUBBASIN AREA

PRECIPITATION DATA

59 PB

STORM	4.60	BASIN TOTAL PRECIPITATION

12 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.19	0.19	0.19	0.03	0.03	0.03	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00						

60 LS SCS LOSS RATE

STRTL	0.37	INITIAL ABSTRACTION
CRVNBR	84.30	CURVE NUMBER
RTIMP	1.50	PERCENT IMPERVIOUS AREA

61 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	0.66	LAG

***

UNIT HYDROGRAPH
22 END-OF-PERIOD ORDINATES

91.	289.	580.	738.	730.	615.	445.	294.	204.	145.
100.	70.	48.	33.	23.	16.	11.	8.	6.	4.
2.	1.								

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

TOTAL RAINFALL = 4.60. TOTAL LOSS = 1.64, TOTAL EXCESS = 2.96

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
1229.	6.50	(CFS)	300.	91.	91.	91.
		(INCHES)	2.429	2.935	2.935	2.935
		(AC-FT)	149.	180.	180.	180.

CUMULATIVE AREA = 1.15 SQ MI

*** ***

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          ***************
          *             *
122 KK    *     30      *
          *             *
          ***************
```

124 KO OUTPUT CONTROL VARIABLES

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

SUBBASIN RUNOFF DATA

125 BA SUBBASIN CHARACTERISTICS

TAREA	0.50	SUBBASIN AREA

PRECIPITATION DATA

126 PB

STORM	4.60	BASIN TOTAL PRECIPITATION

12 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.19	0.19	0.19	0.03	0.03	0.03	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00						

127 LS SCS LOSS RATE

STRTL	0.37	INITIAL ABSTRACTION
CRVNBR	84.30	CURVE NUMBER
RTIMP	1.20	PERCENT IMPERVIOUS AREA

128 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	0.39	LAG

***

UNIT HYDROGRAPH

14 END-OF-PERIOD ORDINATES

129.	420.	506.	393.	213.	122.	65.	39.	22.	12.
7.	4.	2.	0.						

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

HYDROGRAPH AT STATION 30

TOTAL RAINFALL = 4.60, TOTAL LOSS = 1.65, TOTAL EXCESS = 2.95

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
718.	6.17	(CFS)	131.	40.	40.	40.
		(INCHES)	2.442	2.938	2.938	2.938
		(AC-FT)	65.	78.	78.	78.

CUMULATIVE AREA = 0.50 SQ MI

*** ***

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          ***************
          *             *
135 KK    *     F       *
          *             *
          ***************
```

137 KO OUTPUT CONTROL VARIABLES

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

SUBBASIN RUNOFF DATA

138 BA SUBBASIN CHARACTERISTICS

TAREA	2.45	SUBBASIN AREA

PRECIPITATION DATA

139 PB

STORM	4.60	BASIN TOTAL PRECIPITATION

12 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.19	0.19	0.19	0.03	0.03	0.03	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00						

140 LS SCS LOSS RATE

STRTL	0.36	INITIAL ABSTRACTION
CRVNBR	84.90	CURVE NUMBER
RTIMP	1.00	PERCENT IMPERVIOUS AREA

TLAG 0.90 LAG

***

UNIT HYDROGRAPH
29 END-OF-PERIOD ORDINATES

95.	285.	586.	946.	1155.	1203.	1130.	982.	783.	560.
423.	322.	248.	187.	143.	109.	82.	62.	47.	36.
27.	21.	16.	12.	10.	7.	5.	3.	1.	

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

HYDROGRAPH AT STATION E

TOTAL RAINFALL = 4.60, TOTAL LOSS = 1.59, TOTAL EXCESS = 3.01

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
2146.	6.83	(CFS)	647.	196.	196.	196.
		(INCHES)	2.455	2.975	2.975	2.975
		(AC-FT)	321.	389.	389.	389.

CUMULATIVE AREA = 2.45 SQ MI

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          **************
          *            *
262 KK    *     E      *
          *            *
          **************
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264 KO OUTPUT CONTROL VARIABLES

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

SUBBASIN RUNOFF DATA

265 BA SUBBASIN CHARACTERISTICS

TAREA 1.42 SUBBASIN AREA

PRECIPITATION DATA

266 PB STORM 4.60 BASIN TOTAL PRECIPITATION

12 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.19	0.19	0.19	0.03	0.03	0.03	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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267 LS          SCS LOSS RATE
                     STRTL        0.36  INITIAL ABSTRACTION
                    CRVNBR       84.60  CURVE NUMBER
                     RTIMP        0.00  PERCENT IMPERVIOUS AREA

268 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG        0.60  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                           20 END-OF-PERIOD ORDINATES
            140.     453.     860.    1004.     922.     721.     458.     306.     210.     140.
             95.      63.      42.      29.      19.      13.       9.       6.       4.       1.

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

                    HYDROGRAPH AT STATION     E

     TOTAL RAINFALL =  4.60, TOTAL LOSS =  1.64, TOTAL EXCESS =  2.96

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR      24-HR      72-HR     24.00-HR
  1614.       6.50        (CFS)     373.       112.       112.        112.
                        (INCHES)   2.440      2.940      2.940       2.940
                         (AC-FT)    185.       223.       223.        223.

                    CUMULATIVE AREA =    1.42 SQ MI


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

          **************
          *            *
272 KK    *     D      *
          *            *
          **************

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

            SUBBASIN RUNOFF DATA

275 BA          SUBBASIN CHARACTERISTICS
                     TAREA       1.20  SUBBASIN AREA

                PRECIPITATION DATA

276 PB               STORM       4.60  BASIN TOTAL PRECIPITATION

 12 PI            INCREMENTAL PRECIPITATION PATTERN
                     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00
                     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00
                     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00
                     0.01     0.01     0.01     0.19     0.19     0.19     0.03     0.03     0.03     0.01
                     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.01     0.00     0.00
                     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00
                     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00
                     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00
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                0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
                0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
                0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
                0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
                0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
                0.00    0.00    0.00    0.00

277 LS        SCS LOSS RATE
                  STRTL       0.30  INITIAL ABSTRACTION
                  CRVNBR     86.80  CURVE NUMBER
                  RTIMP       0.00  PERCENT IMPERVIOUS AREA

278 UD        SCS DIMENSIONLESS UNITGRAPH
                  TLAG        0.26  LAG

                                          ***

                                        UNIT HYDROGRAPH
                                   10 END-OF-PERIOD ORDINATES
          759.    1695.    1230.    526.    241.    110.    49.    23.    11.    2.

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

                  HYDROGRAPH AT STATION     D

     TOTAL RAINFALL =  4.60. TOTAL LOSS =  1.43, TOTAL EXCESS =  3.17

PEAK FLOW    TIME                        MAXIMUM AVERAGE FLOW
  (CFS)      (HR)                 6-HR     24-HR     72-HR    24.00-HR
   2290.     6.17       (CFS)     343.      102.      102.       102.
                      (INCHES)   2.657     3.161     3.161      3.161
                       (AC-FT)    170.      202.      202.       202.

                  CUMULATIVE AREA =    1.20 SQ MI


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

          ***************
          *             *
285 KK    *     C       *
          *             *
          ***************

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

            SUBBASIN RUNOFF DATA

288 BA        SUBBASIN CHARACTERISTICS
                  TAREA       1.17  SUBBASIN AREA

              PRECIPITATION DATA

289 PB            STORM       4.60  BASIN TOTAL PRECIPITATION

 12 PI          INCREMENTAL PRECIPITATION PATTERN
                0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
                0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
                0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
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                0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.01      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00      0.00
                0.00      0.00      0.00      0.00

290 LS          SCS LOSS RATE
                     STRTL        0.32  INITIAL ABSTRACTION
                     CRVNBR      86.30  CURVE NUMBER
                     RTIMP        0.00  PERCENT IMPERVIOUS AREA

291 UD          SCS DIMENSIONLESS UNITGRAPH
                     TLAG         0.21  LAG

                                                    ***

                                                UNIT HYDROGRAPH
                                            8 END-OF-PERIOD ORDINATES
          1167.     1885.      889.      361.      141.       56.       22.        9.

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

                     HYDROGRAPH AT STATION     C

     TOTAL RAINFALL =  4.60, TOTAL LOSS =  1.48, TOTAL EXCESS =  3.12

PEAK FLOW     TIME                          MAXIMUM AVERAGE FLOW
  (CFS)       (HR)                  6-HR       24-HR       72-HR     24.00-HR
  2331.       6.00        (CFS)     329.         98.         98.         98.
                         (INCHES)  2.615       3.114       3.114       3.114
                          (AC-FT)  163.        194.        194.        194.

                     CUMULATIVE AREA =    1.17 SQ MI


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


          ***************
          *             *
292 KK    *     2       *
          *             *
          ***************

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

            SUBBASIN RUNOFF DATA

295 BA          SUBBASIN CHARACTERISTICS
                     TAREA       1.06  SUBBASIN AREA

                PRECIPITATION DATA

296 PB               STORM       4.60  BASIN TOTAL PRECIPITATION
```

INCREMENTAL PRECIPITATION INTERVAL

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.19	0.19	0.19	0.03	0.03	0.03	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00						

297 LS SCS LOSS RATE

STRTL	0.28	INITIAL ABSTRACTION
CRVNBR	87.70	CURVE NUMBER
RTIMP	0.00	PERCENT IMPERVIOUS AREA

298 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	0.68	LAG

***

UNIT HYDROGRAPH
22 END-OF-PERIOD ORDINATES

78.	247.	502.	653.	664.	571.	433.	287.	199.	143.
98.	70.	49.	34.	24.	17.	12.	8.	6.	4.
3.	1.								

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

HYDROGRAPH AT STATION 2

TOTAL RAINFALL = 4.60, TOTAL LOSS = 1.34, TOTAL EXCESS = 3.26

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
1256.	6.50	(CFS)	309.	92.	92.	92.
		(INCHES)	2.710	3.234	3.234	3.234
		(AC-FT)	153.	183.	183.	183.

CUMULATIVE AREA = 1.06 SQ MI

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          **************
          *            *
302 KK    *     1      *
          *            *
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304 KO OUTPUT CONTROL VARIABLES

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

SUBBASIN RUNOFF DATA

305 BA SUBBASIN CHARACTERISTICS

TAREA 0.91 SUBBASIN AREA

PRECIPITATION DATA

306 PB STORM 4.60 BASIN TOTAL PRECIPITATION

12 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.19	0.19	0.19	0.03	0.03	0.03	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00						

307 LS SCS LOSS RATE

STRTL 0.34 INITIAL ABSTRACTION

CRVNBR 85.50 CURVE NUMBER

RTIMP 0.00 PERCENT IMPERVIOUS AREA

308 UD SCS DIMENSIONLESS UNITGRAPH

TLAG 0.80 LAG

***

UNIT HYDROGRAPH

26 END-OF-PERIOD ORDINATES

46.	141.	297.	438.	495.	483.	420.	333.	230.	168.
126.	94.	68.	50.	37.	27.	20.	15.	11.	8.
6.	5.	3.	2.	1.	0.				

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

HYDROGRAPH AT STATION 1

TOTAL RAINFALL = 4.60, TOTAL LOSS = 1.55, TOTAL EXCESS = 3.05

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
885.	6.67	(CFS)	245.	74.	74.	74.
		(INCHES)	2.502	3.018	3.018	3.018
		(AC-FT)	121.	146.	146.	146.

CUMULATIVE AREA = 0.91 SQ MI

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          ***************
          *             *
312 KK    *     B       *
          *             *
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314 KO OUTPUT CONTROL VARIABLES

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

SUBBASIN RUNOFF DATA

315 BA SUBBASIN CHARACTERISTICS

TAREA	0.46	SUBBASIN AREA

PRECIPITATION DATA

316 PB

STORM	4.60	BASIN TOTAL PRECIPITATION

12 PI INCREMENTAL PRECIPITATION PATTERN

0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.01	0.01	0.01	0.19	0.19	0.19	0.03	0.03	0.03	0.01
0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00						

317 LS SCS LOSS RATE

STRTL	0.30	INITIAL ABSTRACTION
CRVNBR	87.00	CURVE NUMBER
RTIMP	0.00	PERCENT IMPERVIOUS AREA

318 UD SCS DIMENSIONLESS UNITGRAPH

TLAG	0.15	LAG

***

UNIT HYDROGRAPH
7 END-OF-PERIOD ORDINATES

777.	699.	212.	66.	21.	7.	0.

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

HYDROGRAPH AT STATION B

TOTAL RAINFALL = 4.60. TOTAL LOSS = 1.41, TOTAL EXCESS = 3.19

PEAK FLOW (CFS)	TIME (HR)		MAXIMUM AVERAGE FLOW 6-HR	24-HR	72-HR	24.00-HR
1090.	6.00	(CFS)	133.	39.	39.	39.
		(INCHES)	2.680	3.185	3.185	3.185
		(AC-FT)	66.	78.	78.	78.

CUMULATIVE AREA = 0.46 SQ MI

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

OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
HYDROGRAPH AT	70	2564.	6.50	587.	177.	177.	2.20		
HYDROGRAPH AT	80	1397.	6.50	343.	104.	104.	1.35		
2 COMBINED AT	80T	3961.	6.50	930.	280.	280.	3.55		
ROUTED TO	G	3889.	6.67	945.	284.	284.	3.55		
HYDROGRAPH AT	G	1438.	6.00	210.	63.	63.	0.76		
2 COMBINED AT	GT	4307.	6.50	1149.	347.	347.	4.31		
ROUTED TO	50	4263.	6.67	1150.	347.	347.	4.31		
HYDROGRAPH AT	60	743.	6.17	111.	33.	33.	0.44		
ROUTED TO	60T	737.	6.17	111.	33.	33.	0.44		
HYDROGRAPH AT	50	1229.	6.50	300.	91.	91.	1.15		
3 COMBINED AT	50T	5822.	6.50	1561.	471.	471.	5.90		
ROUTED TO	40	5763.	6.50	1561.	472.	472.	5.90		
HYDROGRAPH AT	44	1157.	6.00	165.	49.	49.	0.62		
ROUTED TO	42T	1110.	6.17	166.	50.	50.	0.62		
HYDROGRAPH AT	43	2332.	6.17	377.	113.	113.	1.39		
ROUTED TO	43T	2228.	6.17	378.	113.	113.	1.39		
HYDROGRAPH AT	42	114.	6.33	25.	8.	8.	0.11		
3 COMBINED AT	42T	3427.	6.17	568.	170.	170.	2.12		
ROUTED TO	41T	3369.	6.33	578.	173.	173.	2.12		
HYDROGRAPH AT	41	1275.	6.17	229.	69.	69.	0.89		
2 COMBINED AT	41T	4593.	6.33	807.	242.	242.	3.01		
ROUTED TO	40T	4621.	6.67	897.	265.	265.	3.01		
HYDROGRAPH AT	40	691.	6.33	137.	42.	42.	0.56		
3 COMBINED AT	40T	10786.	6.67	2585.	779.	779.	9.47		
ROUTED TO	30	10625.	6.83	2606.	783.	783.	9.47		
HYDROGRAPH AT	30	718.	6.17	131.	40.	40.	0.50		
2 COMBINED AT	30T	10904.	6.83	2728.	823.	823.	9.97		
ROUTED TO	F	10574.	7.17	2823.	846.	846.	9.97		
HYDROGRAPH AT	F	2146.	6.83	647.	196.	196.	2.45		

2 COMBINED AT	FT	12372.	7.17	3455.	1041.	1041.	12.42
HYDROGRAPH AT	25	3067.	6.00	391.	117.	117.	1.41
HYDROGRAPH AT	24	5481.	6.17	821.	245.	245.	2.91
2 COMBINED AT	24T	8073.	6.00	1212.	361.	361.	4.32
ROUTED TO	23T	6362.	6.33	1190.	359.	359.	4.32
HYDROGRAPH AT	23	3150.	6.17	470.	140.	140.	1.71
2 COMBINED AT	23T	8496.	6.33	1651.	499.	499.	6.03
ROUTED TO	22T	7263.	6.67	1626.	495.	495.	6.03
HYDROGRAPH AT	22	850.	6.17	140.	42.	42.	0.51
2 COMBINED AT	22T	7627.	6.67	1756.	537.	537.	6.54
ROUTED TO	21T	6130.	7.00	1719.	530.	530.	6.54
HYDROGRAPH AT	21	712.	6.33	138.	41.	41.	0.51
ROUTED TO	20T	714.	6.67	148.	44.	44.	0.51
HYDROGRAPH AT	20	840.	6.33	171.	52.	52.	0.68
4 COMBINED AT	20T	19366.	7.00	5469.	1667.	1667.	20.15
ROUTED TO	10	19085.	7.00	5470.	1668.	1668.	20.15
HYDROGRAPH AT	14	2387.	6.17	356.	106.	106.	1.25
ROUTED TO	13T	2367.	6.33	368.	109.	109.	1.25
HYDROGRAPH AT	13	216.	6.17	32.	10.	10.	0.15
2 COMBINED AT	13T	2512.	6.33	400.	119.	119.	1.40
HYDROGRAPH AT	12	3559.	6.17	533.	159.	159.	1.89
2 COMBINED AT	12T	6025.	6.17	932.	278.	278.	3.29
ROUTED TO	12T	5462.	6.33	976.	289.	289.	3.29
HYDROGRAPH AT	11	1915.	6.33	371.	111.	111.	1.36
2 COMBINED AT	11T	7376.	6.33	1344.	400.	400.	4.65
ROUTED TO	11T	6798.	6.67	1326.	397.	397.	4.65
HYDROGRAPH AT	10	1199.	6.33	263.	79.	79.	0.96
3 COMBINED AT	10T	24260.	7.00	7047.	2144.	2144.	25.76
ROUTED TO	E	22900.	7.50	6905.	2112.	2112.	25.76
HYDROGRAPH AT	E	1614.	6.50	373.	112.	112.	1.42
2 COMBINED AT	ET	23335.	7.50	7140.	2224.	2224.	27.18
HYDROGRAPH AT	D	2290.	6.17	343.	102.	102.	1.20
2 COMBINED AT	DT	23506.	7.50	7403.	2326.	2326.	28.38

ROUTED TO	DTR	22628.	7.67	7346.	2308.	2308.	28.38
HYDROGRAPH AT	C	2331.	6.00	329.	98.	98.	1.17
HYDROGRAPH AT	2	1256.	6.50	309.	92.	92.	1.06
ROUTED TO	1	992.	7.50	298.	90.	90.	1.06
HYDROGRAPH AT	1	885.	6.67	245.	74.	74.	0.91
4 COMBINED AT	1T	24024.	7.67	8083.	2570.	2570.	31.52
HYDROGRAPH AT	B	1090.	6.00	133.	39.	39.	0.46
HYDROGRAPH AT	A	856.	6.17	128.	38.	38.	0.48

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101
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  Accounting information:
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  Direct I/O count:           318      Peak page file size:    2924
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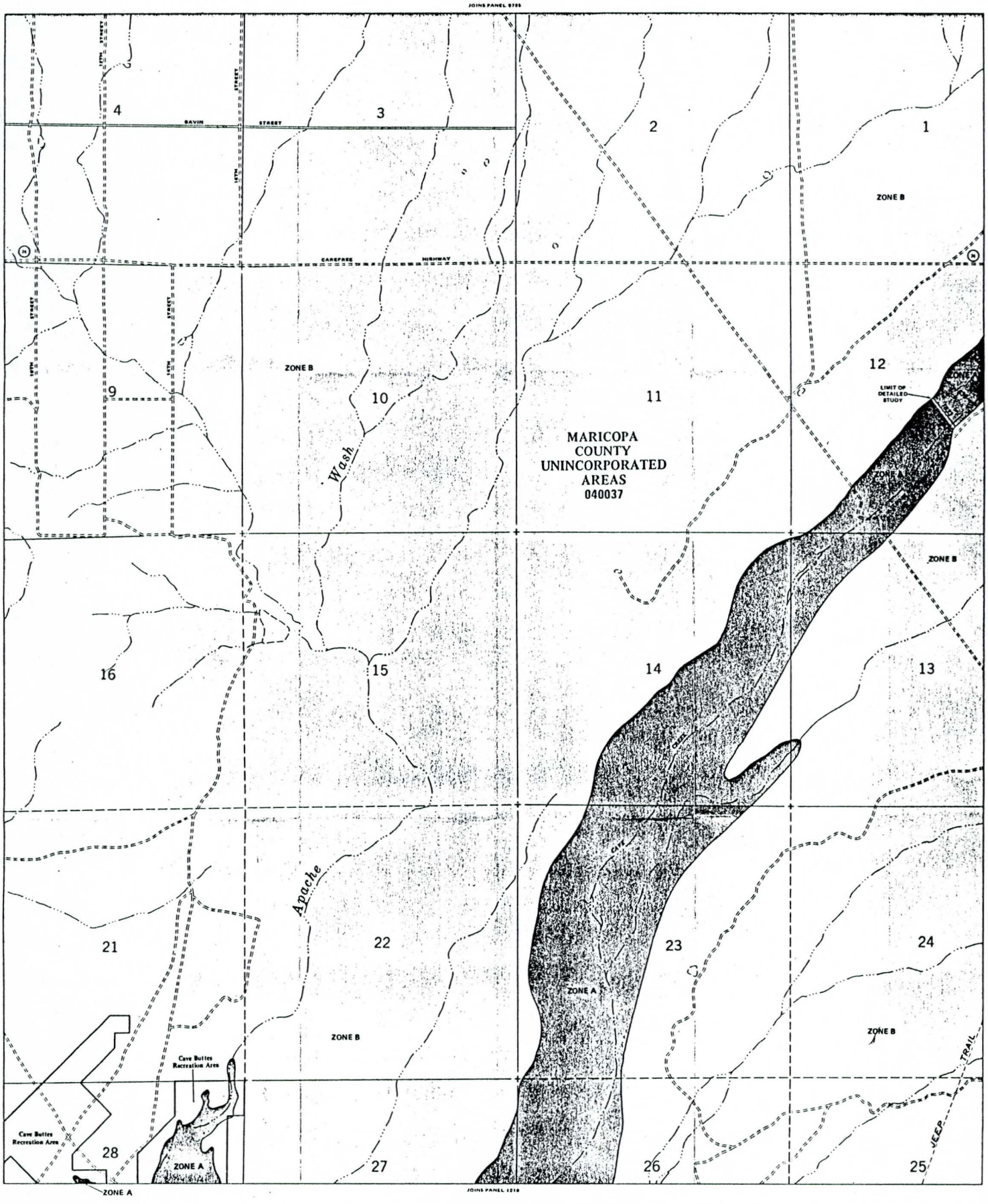
FEMA MAPS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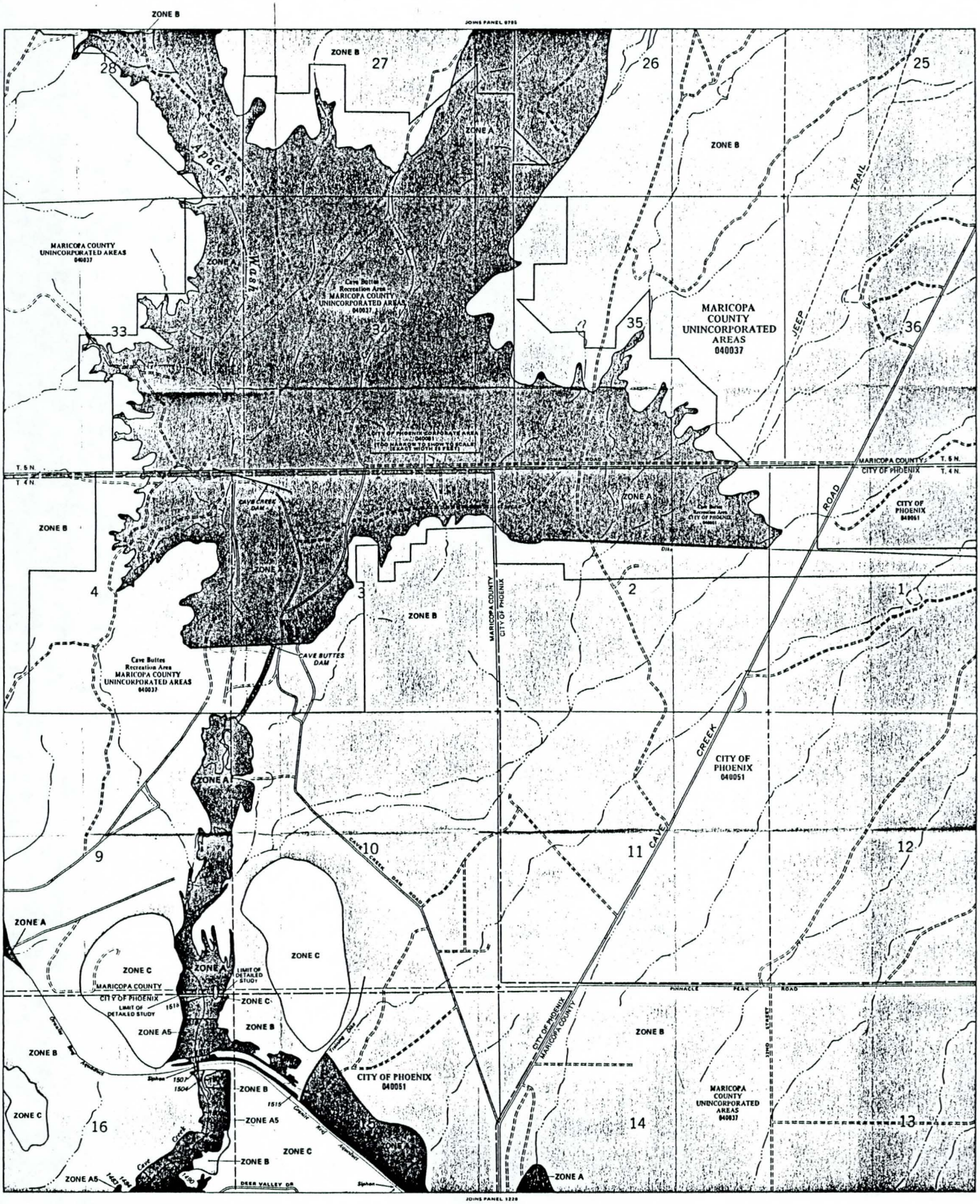
JOINS PANEL 0815
JOINS PANEL 1210
4
3
2
1
BAVIN STREET
CAREFREE HIGHWAY
ZONE B
9
10
11
12
LIMIT OF DETAILED STUDY
ZONE A
MARICOPA
COUNTY
UNINCORPORATED
AREAS
040037
Wash
16
15
14
13
Apache
21
22
23
24
25
26
27
28
JEEP TRAIL
Cave Buttes Recreation Area
ZONE A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JOINS PANEL 0795
28
27
26
25
ZONE A
ZONE B
APACHE
TRAIL
MARICOPA COUNTY
UNINCORPORATED AREAS
040037
ZONE A
Cave Buttes
Recreation Area
MARICOPA COUNTY
UNINCORPORATED AREAS
040037
33
34
35
36
MARICOPA
COUNTY
UNINCORPORATED
AREAS
040037
JEEP
TRAIL
CITY OF PHOENIX CORPORATE AREA
040051
1500 MAPPING SCALE
T. 5 N.
T. 4 N.
MARICOPA COUNTY
CITY OF PHOENIX
ZONE A
ZONE B
CAVE CREEK
DAM
CITY OF
PHOENIX
040051
ROAD
4
3
2
1
ZONE B
MARICOPA COUNTY
CITY OF PHOENIX
JOINS PANEL 1195
JOINS PANEL 1295
Cave Buttes
Recreation Area
MARICOPA COUNTY
UNINCORPORATED AREAS
040037
CAVE BUTTES
DAM
ZONE A
CITY OF
PHOENIX
040051
CAVE
CREEK
9
10
11
12
CAVE CREEK DAM ROAD
ZONE A
ZONE C
ZONE A
LIMIT OF
DETAILED
STUDY
ZONE C
MARICOPA COUNTY
CITY OF PHOENIX
LIMIT OF
DETAILED STUDY
1515
ZONE C
ZONE A5
ZONE B
PINNACLE
PEAK
ROAD
ZONE B
ZONE B
Siphon
1507
1504
ZONE B
1515
ZONE A5
ZONE C
ZONE B
ZONE A5
CITY OF PHOENIX
040051
CITY OF PHOENIX
MARICOPA COUNTY
ZONE B
MARICOPA
COUNTY
UNINCORPORATED
AREAS
040037
ZONE C
16
15
14
13
ZONE A
DEER VALLEY DR
Siphon
JOINS PANEL 1225

HYDRAULIC DATA
CALCULATIONS
CHANNEL CROSS SECTIONS

HYDROLOGIC DATA SHEET

Project Name and Location: APACHE WASH

Drainage Concentration Point: BASIN 50

Watershed Areas(A): 1.150 Square Miles

Length of Watercourse(Lc): 17500. ft Length to Center of Gravity(Lca): 9000. ft

Incremental Change in Length(Li) -ft. Incremental Change in Elevation(Hi) -ft.

Mean Slope (Sc): 0.0120 ft/ft Watershed Type(s): RURAL (future)

Basin Factor(nb): 0.0350 (future) Flood Frequency: 100.0 yrs.

P24 (24 hr):	4.60	in.	Areal Value:	in.
P6 (6 hr):	3.80	in.	Areal Value:	in.
P1 (1 hr):	2.39	in.	Areal Value:	in.
P2 (2 hr):	2.87	in.	Areal Value:	in.
P3 (3 hr):	3.19	in.	Areal Value:	in.

Soil Group(s): 0.0 %A 26.0 %B 30.0 %C 44.0 %D Cover Type(s): DESERT BRUSH (future)

Cover Density (pervious areas): 20.0% Impervious Cover: 1.0% (future)

Curve Number(s) - CN(s): 77. 85. 88. 99(pervious & impervious areas)

Adjusted Curve Number(s) - CN*(s): 81.7 88.0 90.4 99.0

Runoff to Rainfall Ratio(s),(C): 0.530 (pervious areas) 0.951 (impervious areas)

Runoff Supply Rate(q): 0.53 X i in/hr (function of i)

Time of Concentration (TC):1.5192 X i**-0.4 hrs. (function of i)

Iterative Solution of TC: 1.11 hrs. (K= 64.3)

Rainfall Intensity (i) at TC: 2.21 in./hr.

Runoff Supply Rate (q) at TC: 1.18 in./hr.

Peak Discharge:
645.33qA(sq. miles): 876. cfs

Discharge Location:

PSM 16-MAY-89

HYDROLOGIC DATA SHEET

Project Name and Location: APACHE WASH

Drainage Concentration Point: BASIN 30

Watershed Area (A): 317.00 Acres

Length of Watercourse(Lc): 12250. ft Length to Center of Gravity(Lca): 6125. ft

Incremental Change in Length(Li) -ft. Incremental Change in Elevation(Hi) -ft.

Mean Slope (Sc): 0.0237 ft/ft Watershed Type(s): RURAL (future)

Basin Factor(nb): 0.0350 (future) Flood Frequency: 100.0 yrs.

P24 (24 hr):	4.60	in.	Areal Value:	in.
P6 (6 hr):	3.80	in.	Areal Value:	in.
P1 (1 hr):	2.39	in.	Areal Value:	in.
P2 (2 hr):	2.87	in.	Areal Value:	in.
P3 (3 hr):	3.19	in.	Areal Value:	in.

Soil Group(s): 0.0 %A 33.0 %B 4.0 %C 63.0 %D Cover Type(s): DESERT BRUSH (future)

Cover Density (pervious areas): 20.0% Impervious Cover: 1.0% (future)

Curve Number(s) - CN(s): 77. 85. 88. 99(pervious & impervious areas)

Adjusted Curve Number(s) - CN*(s): 81.7 88.0 90.4 99.0

Runoff to Rainfall Ratio(s),(C): 0.532 (pervious areas) 0.951 (impervious areas)

Runoff Supply Rate(q): 0.54 X i in/hr (function of i)

Time of Concentration (TC):0.9247 X i**-0.4 hrs. (function of i)

Iterative Solution of TC: 33.6 mins. (K= 39.2)

Rainfall Intensity (i) at TC: 3.49 in./hr.

Runoff Supply Rate (q) at TC: 1.87 in./hr.

Peak Discharge:
1.008qA(acres): 598. cfs

Discharge Location:

PSM 16-MAY-89

HYDROLOGIC DATA SHEET

Project Name and Location: APACHE WASH

Drainage Concentration Point: BASIN 12

Watershed Area (A): 1209.60 Acres

Length of Watercourse(Lc): 12500. ft Length to Center of Gravity(Lca): 8000. ft

Incremental Change in Length(Li) -ft. Incremental Change in Elevation(Hi) -ft.

Mean Slope (Sc): 0.0400 ft/ft Watershed Type(s): RURAL (future)

Basin Factor(nb): 0.0350 (future) Flood Frequency: 100.0 yrs.

P24 (24 hr):	4.60	in.	Areal Value:	in.
P6 (6 hr):	3.80	in.	Areal Value:	in.
P1 (1 hr):	2.39	in.	Areal Value:	in.
P2 (2 hr):	2.87	in.	Areal Value:	in.
P3 (3 hr):	3.19	in.	Areal Value:	in.

Soil Group(s): 0.0 %A 32.0 %B 14.0 %C 54.0 %D Cover Type(s): DESERT BRUSH (future)

Cover Density (pervious areas): 20.0% Impervious Cover: 1.0% (future)

Curve Number(s) - CN(s): 77. 85. 88. 99(pervious & impervious areas)

Adjusted Curve Number(s) - CN*(s): 81.7 88.0 90.4 99.0

Runoff to Rainfall Ratio(s),(C): 0.527 (pervious areas) 0.951 (impervious areas)

Runoff Supply Rate(q): 0.53 X i in/hr (function of i)

Time of Concentration (TC):0.8205 X i**-0.4 hrs. (function of i)

Iterative Solution of TC: 28.7 mins. (K= 34.7)

Rainfall Intensity (i) at TC: 3.85 in./hr.

Runoff Supply Rate (q) at TC: 2.05 in./hr.

Peak Discharge:
1.008qA(acres): 2495. cfs

Discharge Location:

PSM 10-MAY-90

****
CLOUD ROAD CHANNEL
****

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
15.00	3.84	30.37	87.18	2.0:1	2.0:1	32.19

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
1.22	11.77	0.00800	1026.00	0.02200	4.31	10.08

****

SECTION A BASIN 70-78

****

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
40.00	5.33	61.30	269.77	2.0:1	2.0:1	63.82

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
1.37	16.29	0.00700	4395.00	0.02000	6.44	12.91

****
SECTION B BASIN 70-80
****

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
10.00	2.56	20.26	38.79	2.0:1	2.0:1	21.47

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
1.07	8.40	0.00700	326.00	0.02200	2.66	7.98

****
SECTION C BASIN 70-80
****

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
45.00	5.42	66.67	302.48	2.0:1	2.0:1	69.23

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
1.38	16.66	0.00700	5038.00	0.02000	6.59	13.15

****
89-017 SECTION # 1
BASIN # 12, 13 & 14
****

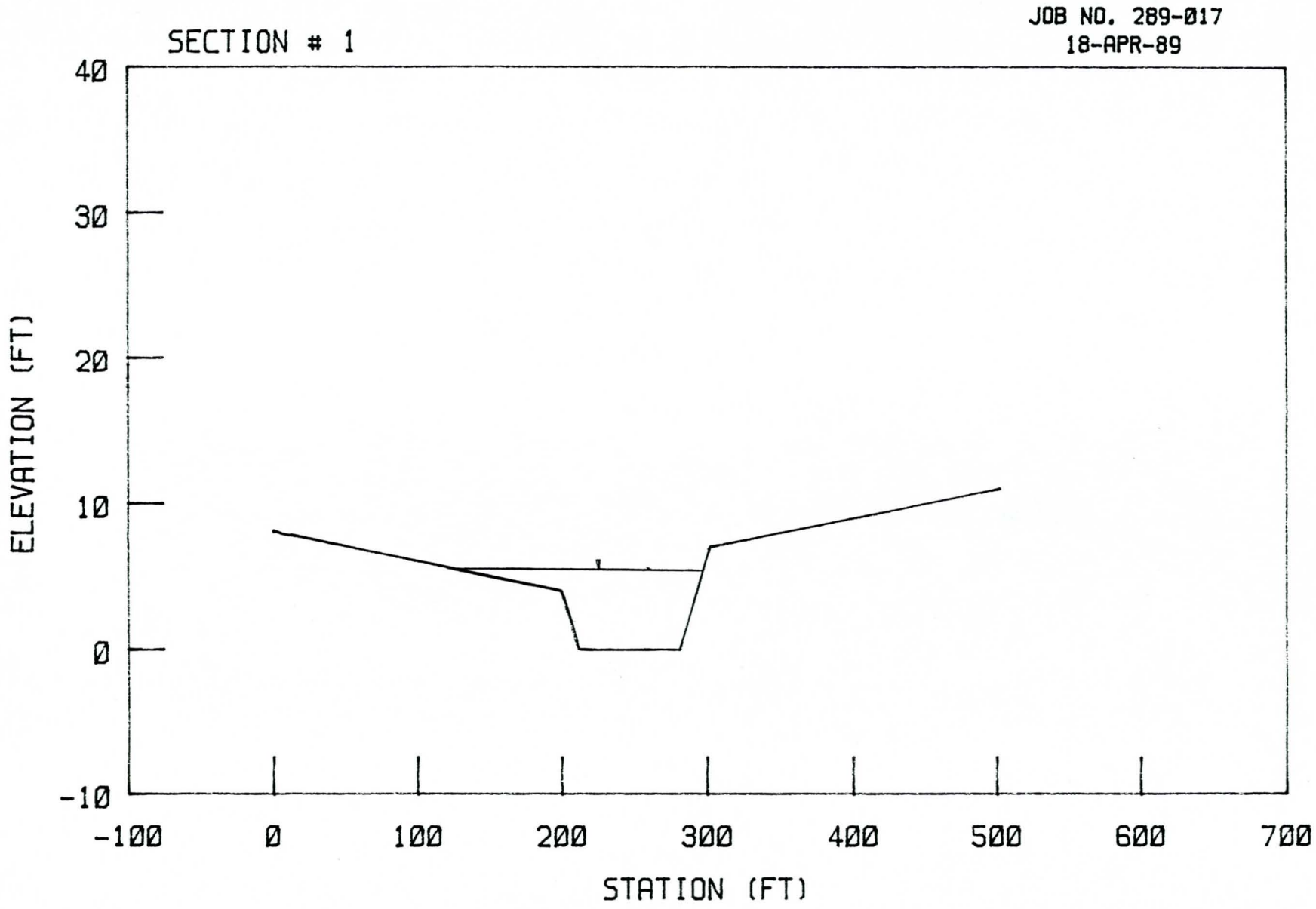
IRREGULAR CROSS SECTION

STA.	0.00	200.00	212.00	282.00	303.00	503.00
LEV.	8.40	4.00	0.00	0.00	7.00	11.00
N	0.040	0.040	0.035	0.035	0.040	0.040

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	5.57	170.09	535.35	0.0:1	0.0:1	171.66

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
1.13	11.39	0.01800	6096.00	0.03766	5.93	10.15


SECTION # 1
JOB NO. 289-017
18-APR-89
ELEVATION (FT)
40
30
20
10
0
-10
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
B9-017 SECTION # 2
BASIN # 11
****

IRREGULAR CROSS SECTION

STA.	0.00	200.00	207.50	223.50	231.00	431.00
ELEV.	12.50	2.50	0.00	0.00	2.50	12.50
N	0.040	0.040	0.030	0.030	0.040	0.040

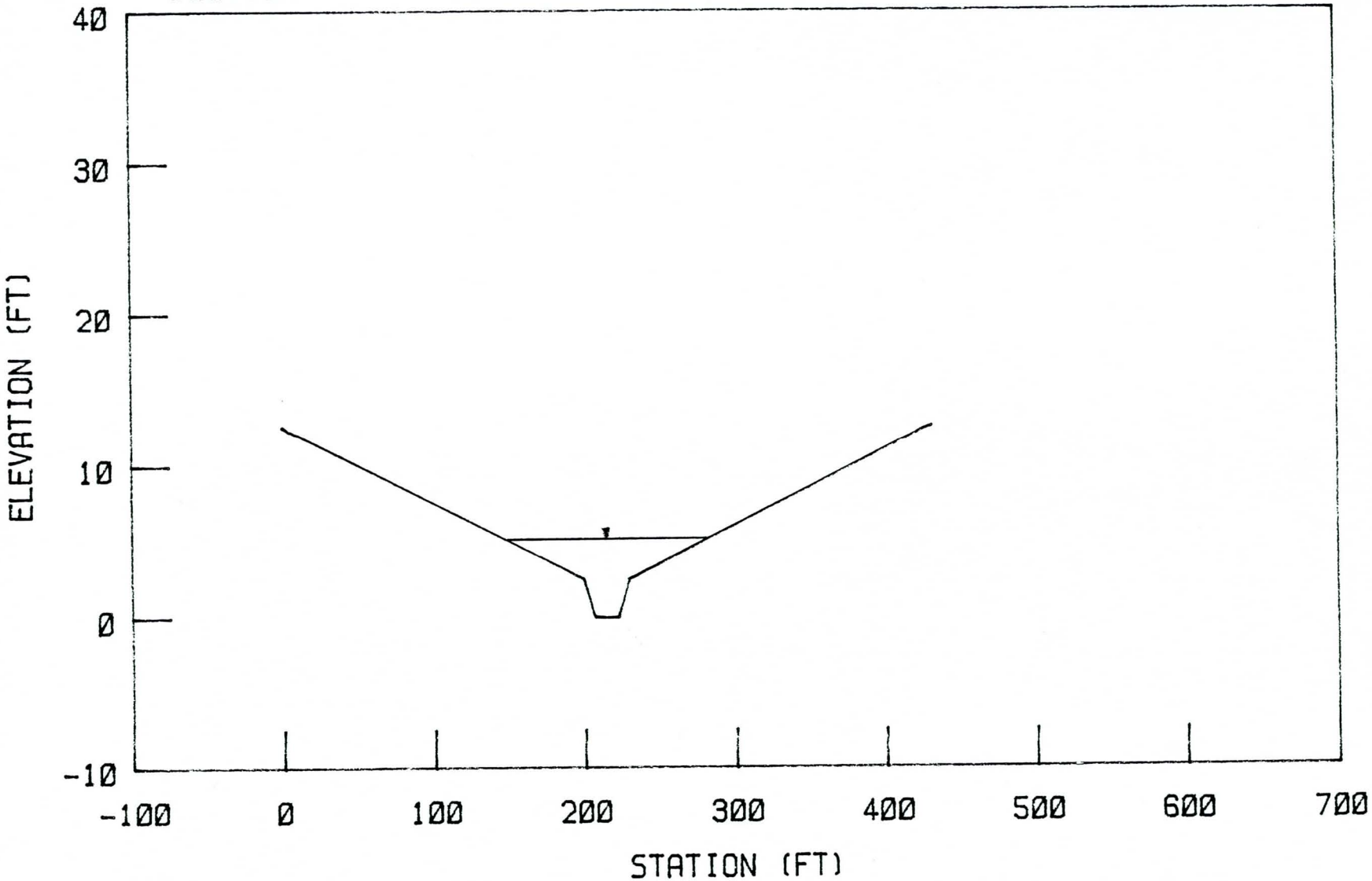
NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	5.74	160.47	368.60	0.0:1	0.0:1	161.44

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.60	5.20	0.00600	1915.00	0.03810	4.85	7.90

JOB NO. 289-017
18-APR-89

SECTION # 2



****
89-017 SECTION # 3
BASIN # 22
****

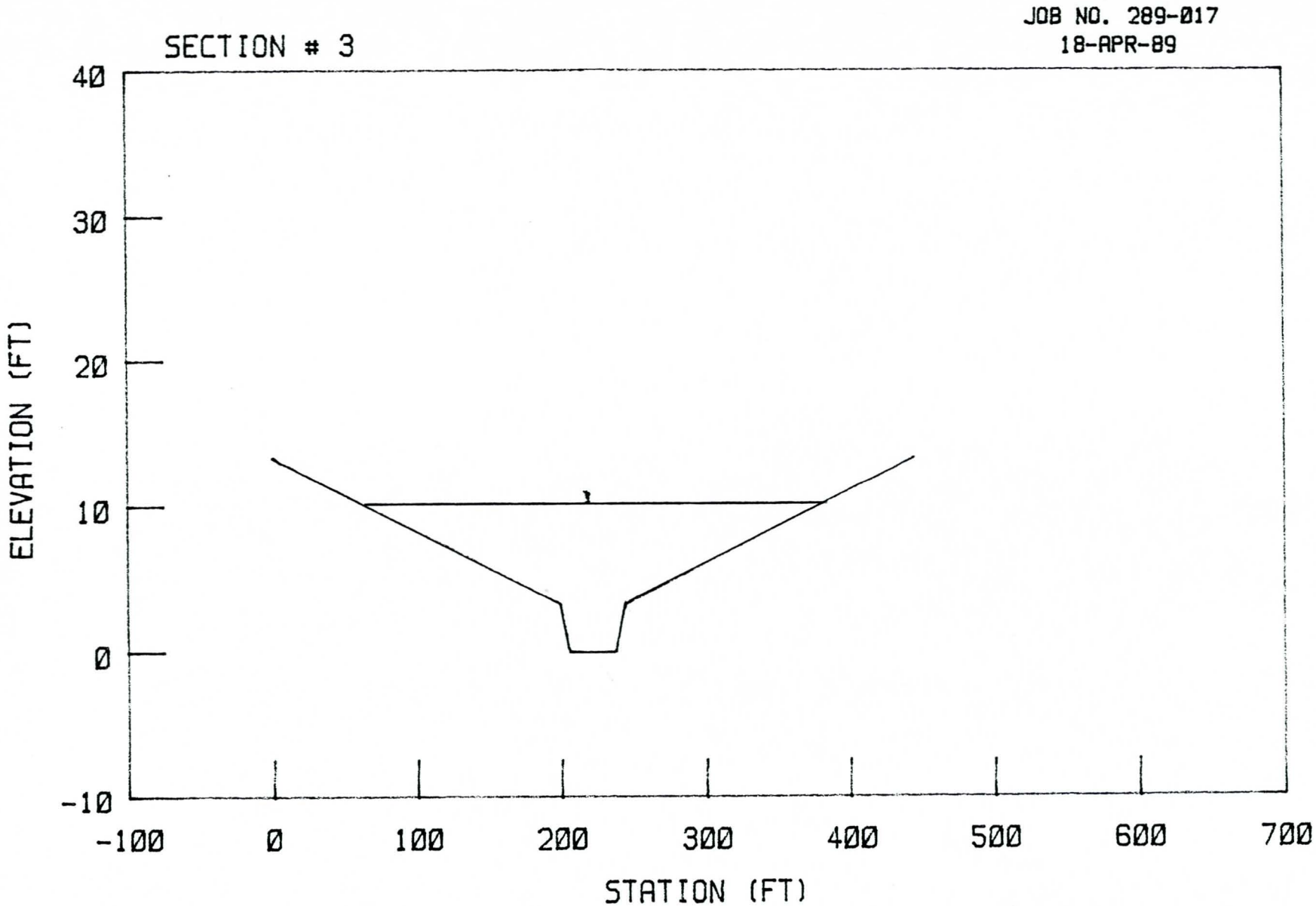
IRREGULAR CROSS SECTION

STA.	0.00	200.00	206.60	238.60	245.20	445.20
LEV.	13.30	3.30	0.00	0.00	3.30	13.30
N	0.040	0.040	0.030	0.030	0.040	0.040

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	10.28	324.46	1417.79	0.0:1	0.0:1	326.37

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.67	7.92	0.00600	11230.00	0.03856	8.95	11.01


JOB NO. 289-017
18-APR-89
SECTION # 3
40
30
20
10
0
-10
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 4
BASIN # 21
****

IRREGULAR CROSS SECTION

STA.	0.00	300.00	306.00	313.00	319.00	619.00
ELEV.	5.00	2.00	0.00	0.00	2.00	5.00
N	0.040	0.040	0.030	0.030	0.040	0.040

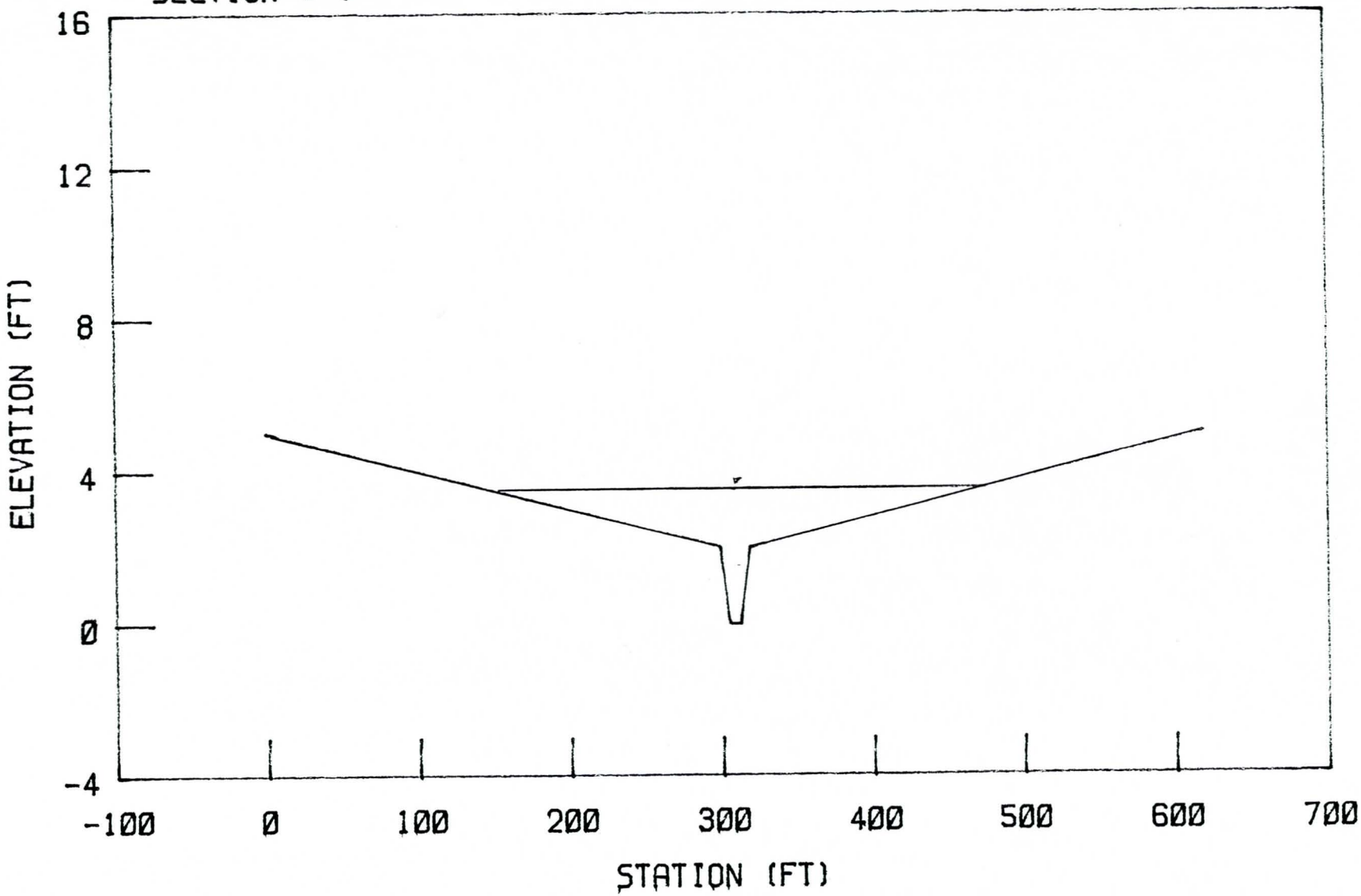
NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	3.61	340.84	315.52	0.0:1	0.0:1	341.50

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.41	2.26	0.00400	712.00	0.03941	3.03	4.67

JOB NO. 289-017
18-APR-89

SECTION # 4



****
B9-017 SECTION # 5
ASIN # 30
****

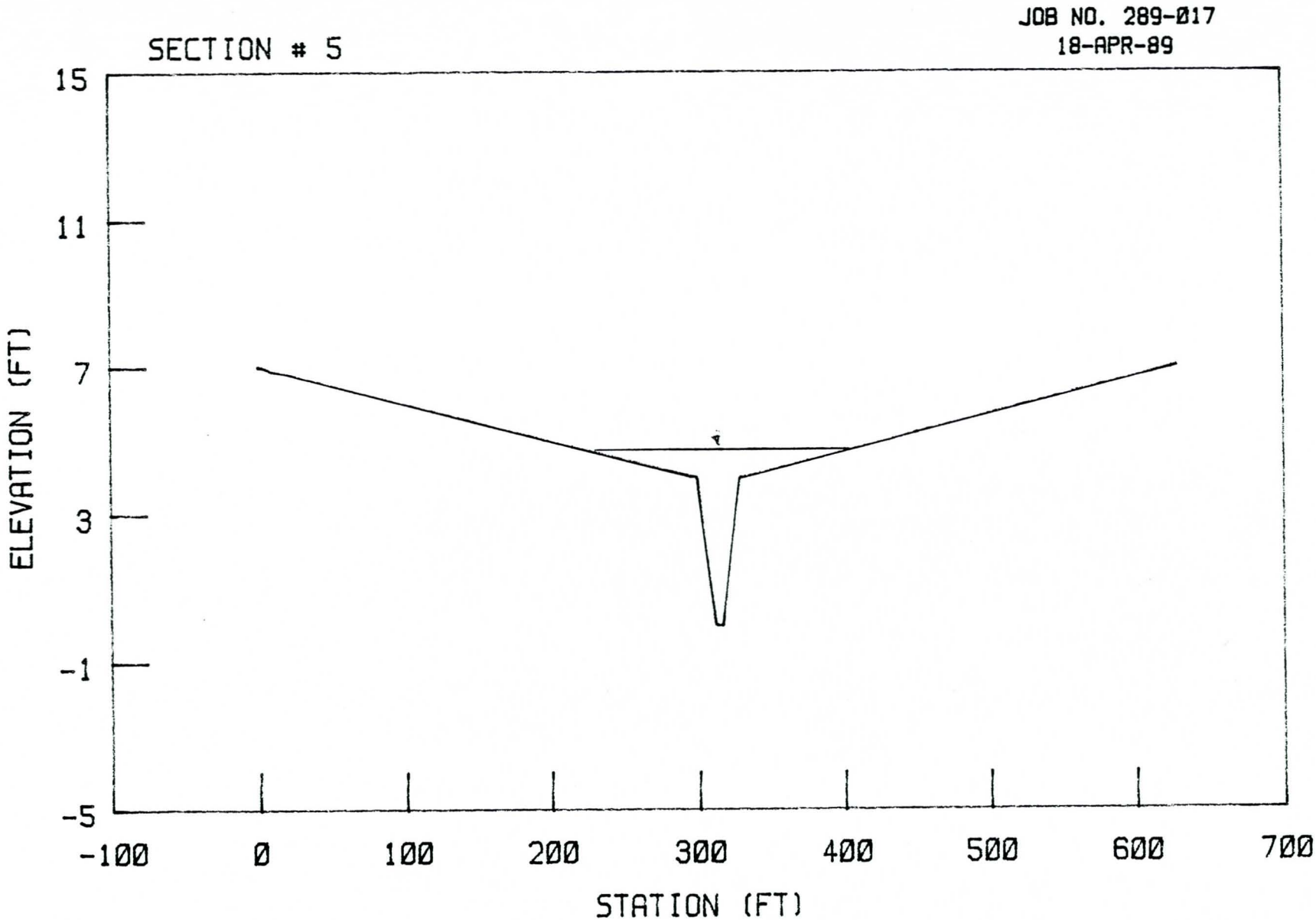
IRREGULAR CROSS SECTION

STA.	0.00	300.00	312.00	317.00	329.00	629.00
ELEV.	7.00	4.00	0.00	0.00	4.00	7.00
N	0.030	0.030	0.030	0.030	0.030	0.030

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	4.72	173.23	140.92	0.0:1	0.0:1	174.54

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
1.00	5.09	0.01400	718.00	0.03000	4.72	5.12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18-APR-89
SECTION # 5
15
11
7
3
-1
-5
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 6
BETWEEN 40 & 30
****

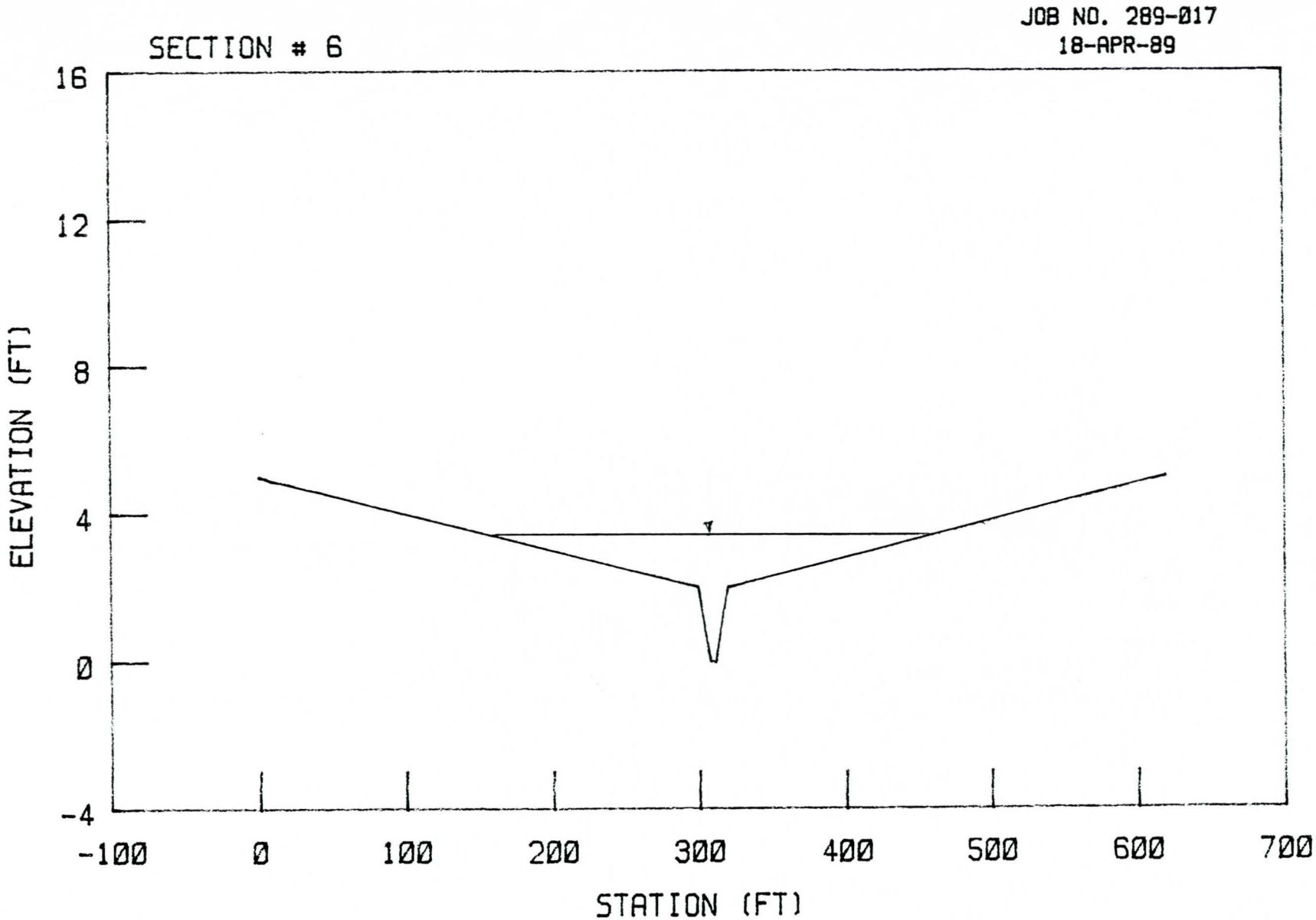
IRREGULAR CROSS SECTION

STA.	0.00	300.00	308.00	312.00	320.00	620.00
ELEV.	5.00	2.00	0.00	0.00	2.00	5.00
N	0.030	0.030	0.030	0.030	0.030	0.030

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	3.40	300.47	248.70	0.0:1	0.0:1	300.98

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.54	2.76	0.00400	687.50	0.03000	3.02	4.62


JOB NO. 289-017
18-APR-89
SECTION # 6
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
B9-017 SECTION # 7
BASIN # 43 EAST TRIBUTARY
****

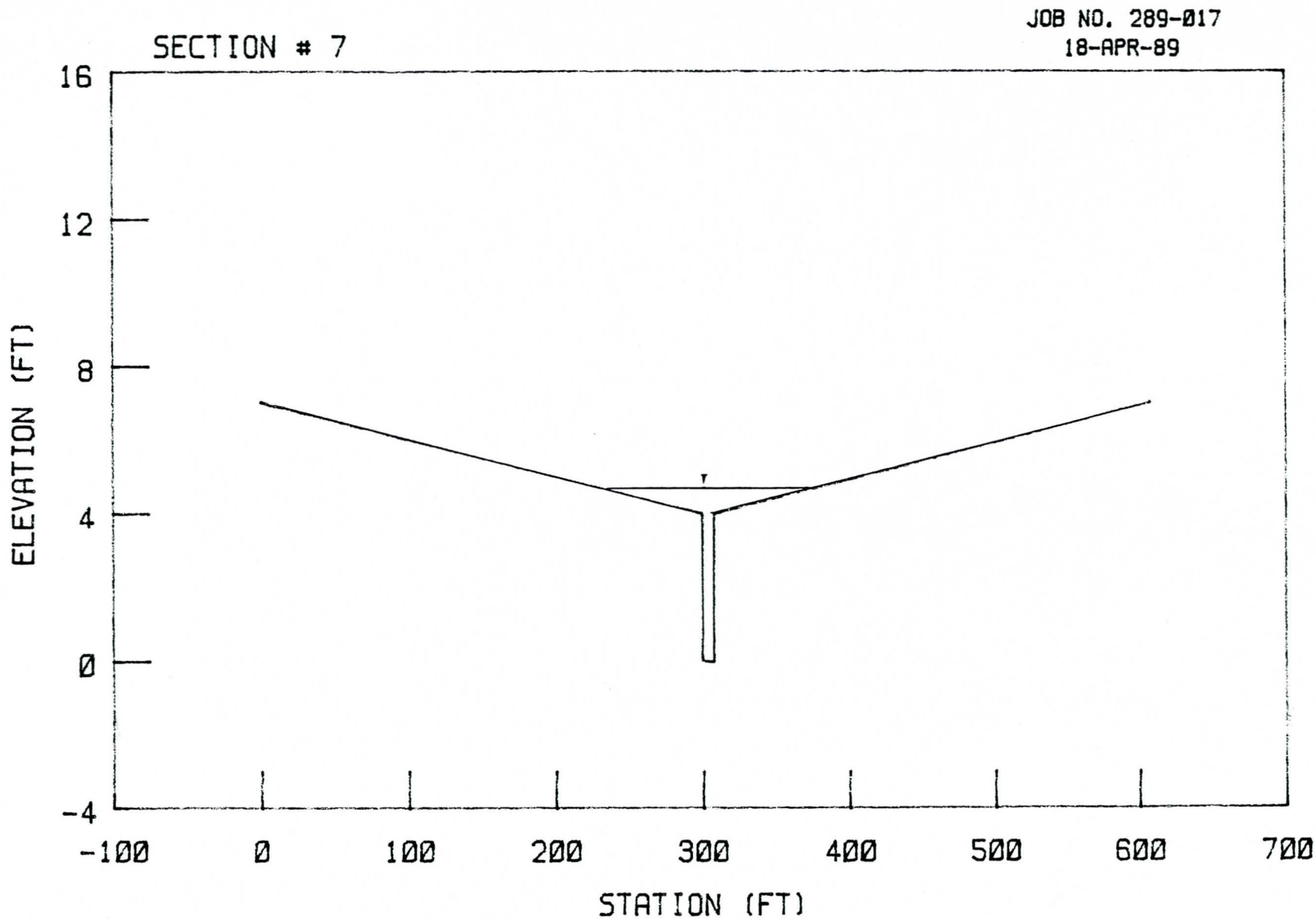
IRREGULAR CROSS SECTION

STA.	0.00	300.00	300.10	308.10	308.20	608.20
LEV.	7.00	4.00	0.00	0.00	4.00	7.00
N	0.030	0.030	0.030	0.030	0.030	0.030

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	4.79	167.04	101.99	0.0:1	0.0:1	174.85

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
1.11	4.90	0.02000	500.00	0.03000	4.85	4.49


JOB NO. 289-017
18-APR-89
SECTION # 7
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 8
BASIN # 43 MAIN CHANNEL
****

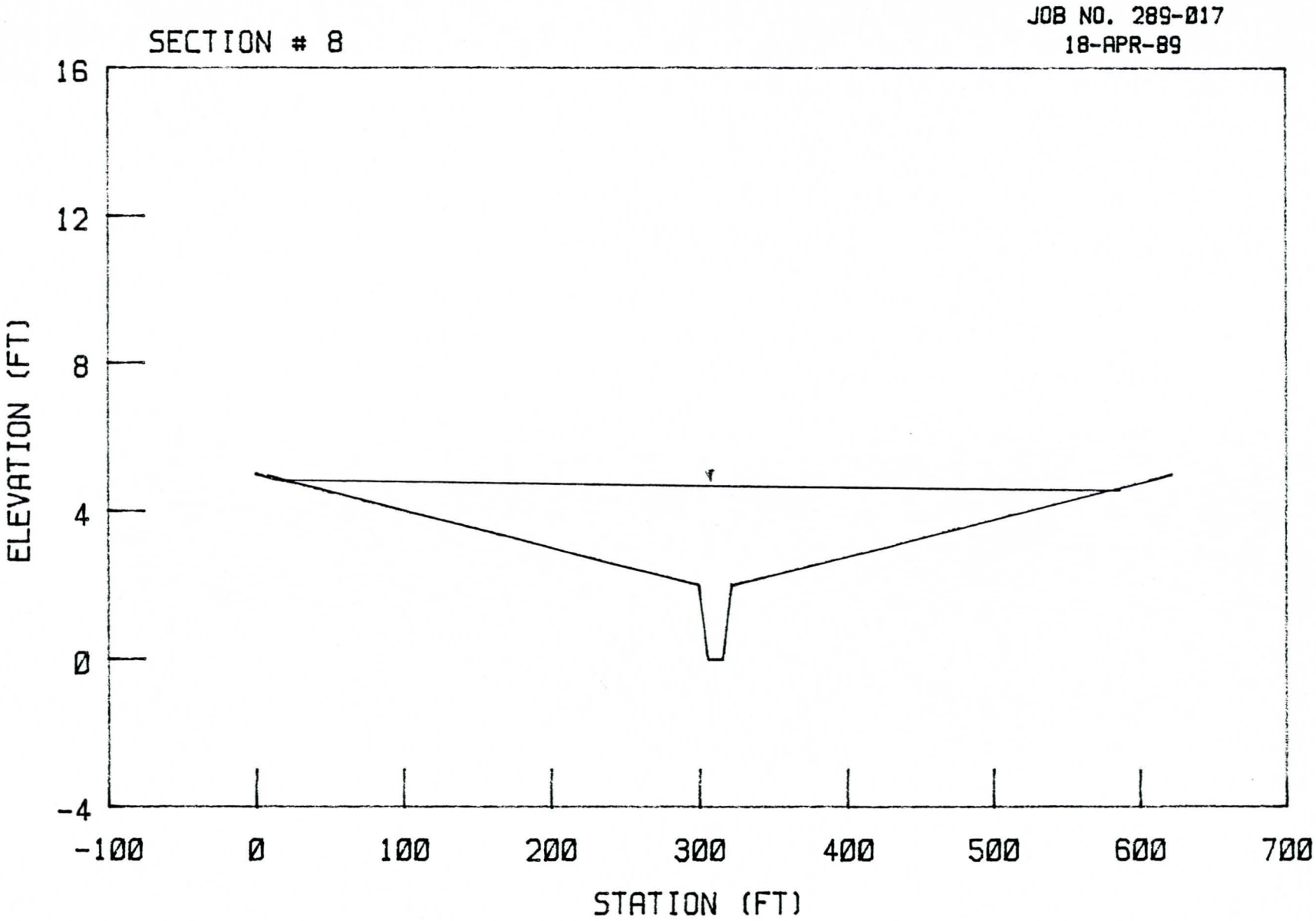
IRREGULAR CROSS SECTION

STA.	0.00	300.00	306.00	316.00	322.00	622.00
ELEV.	5.00	2.00	0.00	0.00	2.00	5.00
N	0.040	0.040	0.035	0.035	0.040	0.040

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	4.63	547.29	779.61	0.0:1	0.0:1	547.97

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.44	2.99	0.00400	2332.00	0.03979	3.82	5.80


SECTION # 8
JOB NO. 289-017
18-APR-89
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 9
BASIN # 50 UPPER Portland
****

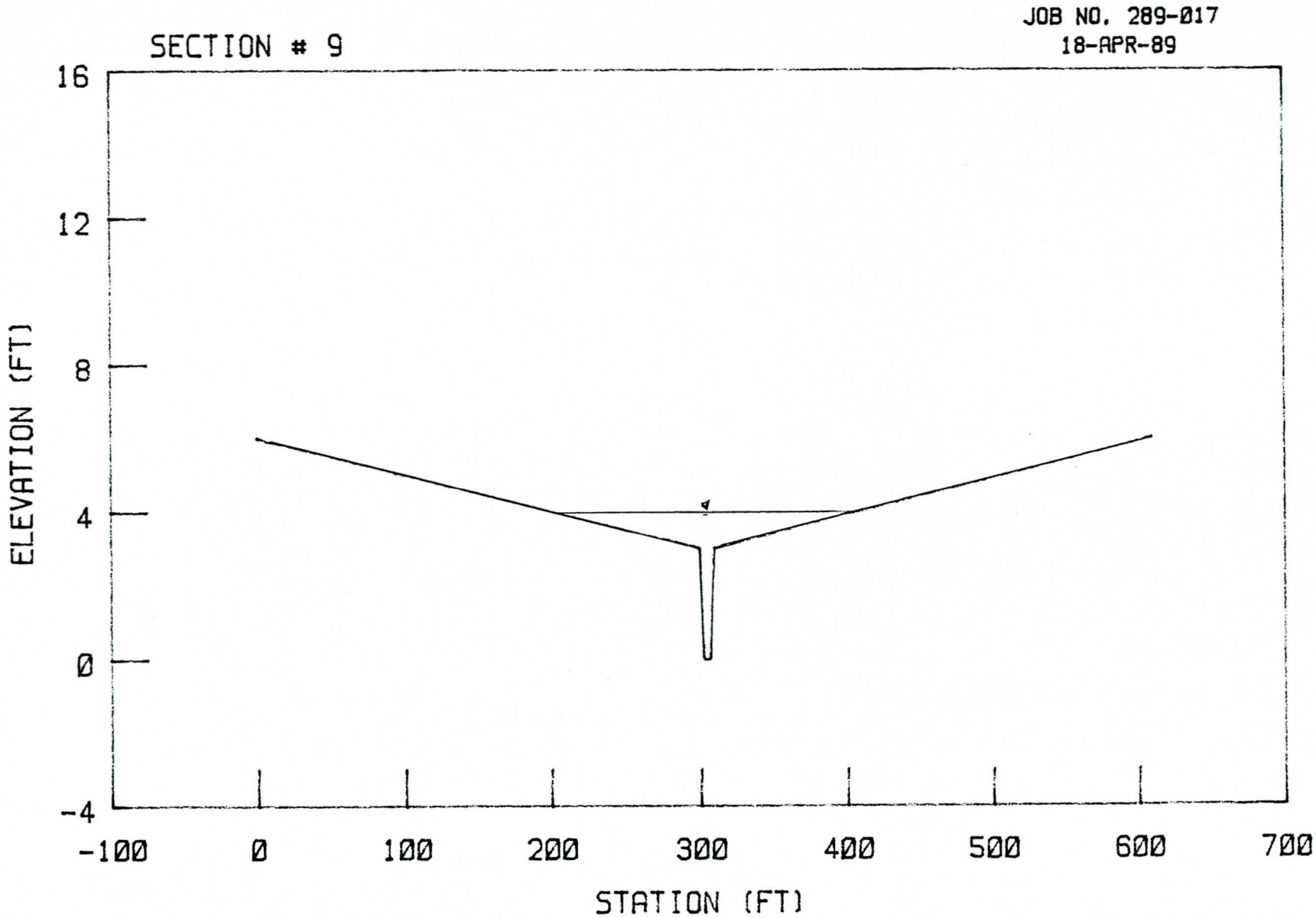
IRREGULAR CROSS SECTION

STA.	0.00	300.00	303.00	307.00	310.00	610.00
ELEV.	6.00	3.00	0.00	0.00	3.00	6.00
N	0.030	0.030	0.030	0.030	0.030	0.030

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	3.97	204.93	125.74	0.0:1	0.0:1	207.42

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.72	3.18	0.00800	400.00	0.03000	3.81	4.21


JOB NO. 289-017
18-APR-89
SECTION # 9
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
SECTION #10 BASIN 80 MID-POINT

****

IRREGULAR CROSS SECTION

STA.	0.00	300.00	308.00	312.00	320.00	620.00
ELEV.	5.00	2.00	0.00	0.00	2.00	5.00
N	0.030	0.030	0.025	0.025	0.030	0.030

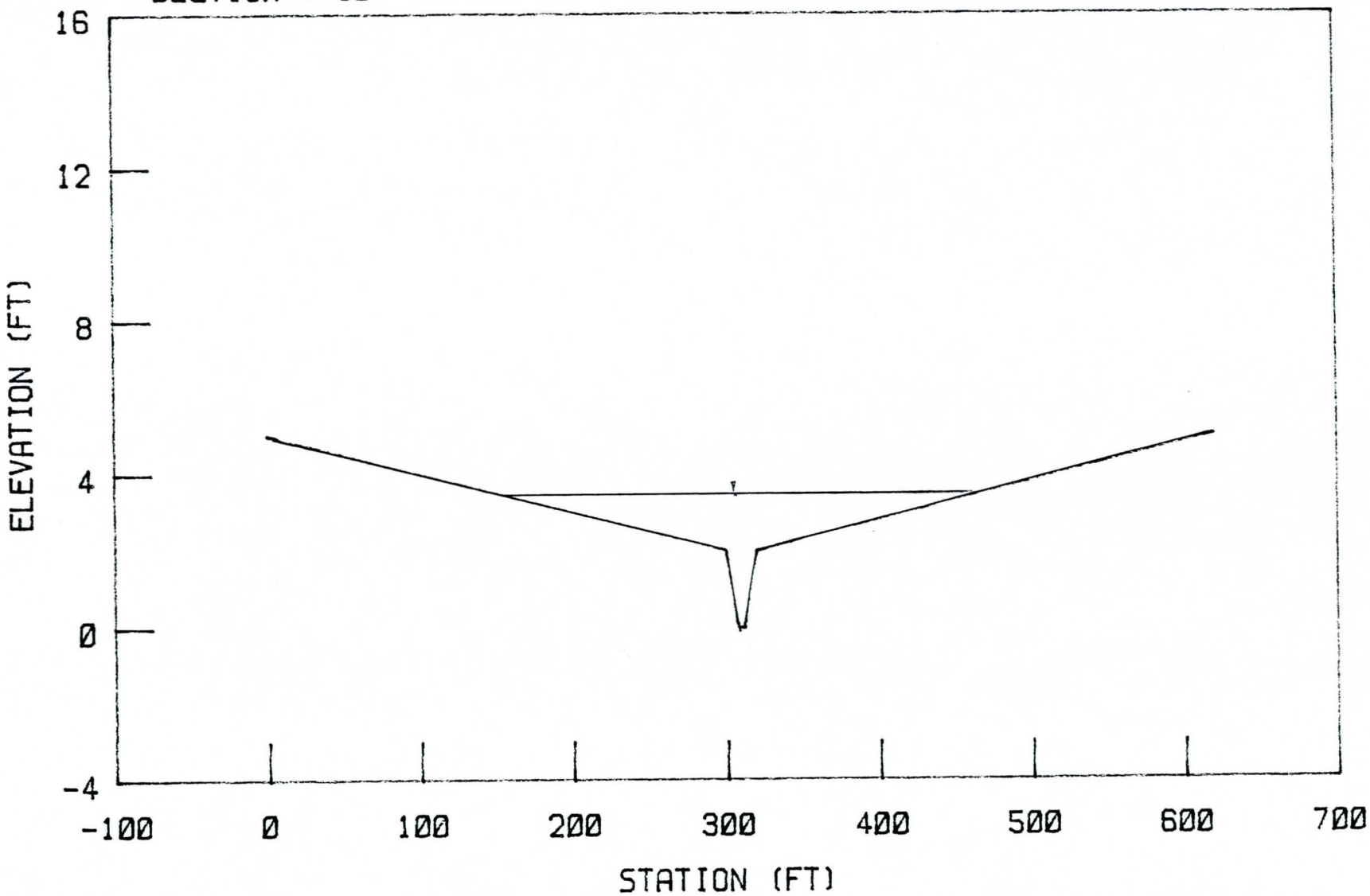
STATION 10.00

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	3.62	343.68	318.30	0.0:1	0.0:1	344.19
FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.78	4.24	0.00800	1350.00	0.02980	3.44	5.21

JOB NO. 289-017
18-APR-89

SECTION # 10



****
SECTION #11 BASIN 80
****

IRREGULAR CROSS SECTION

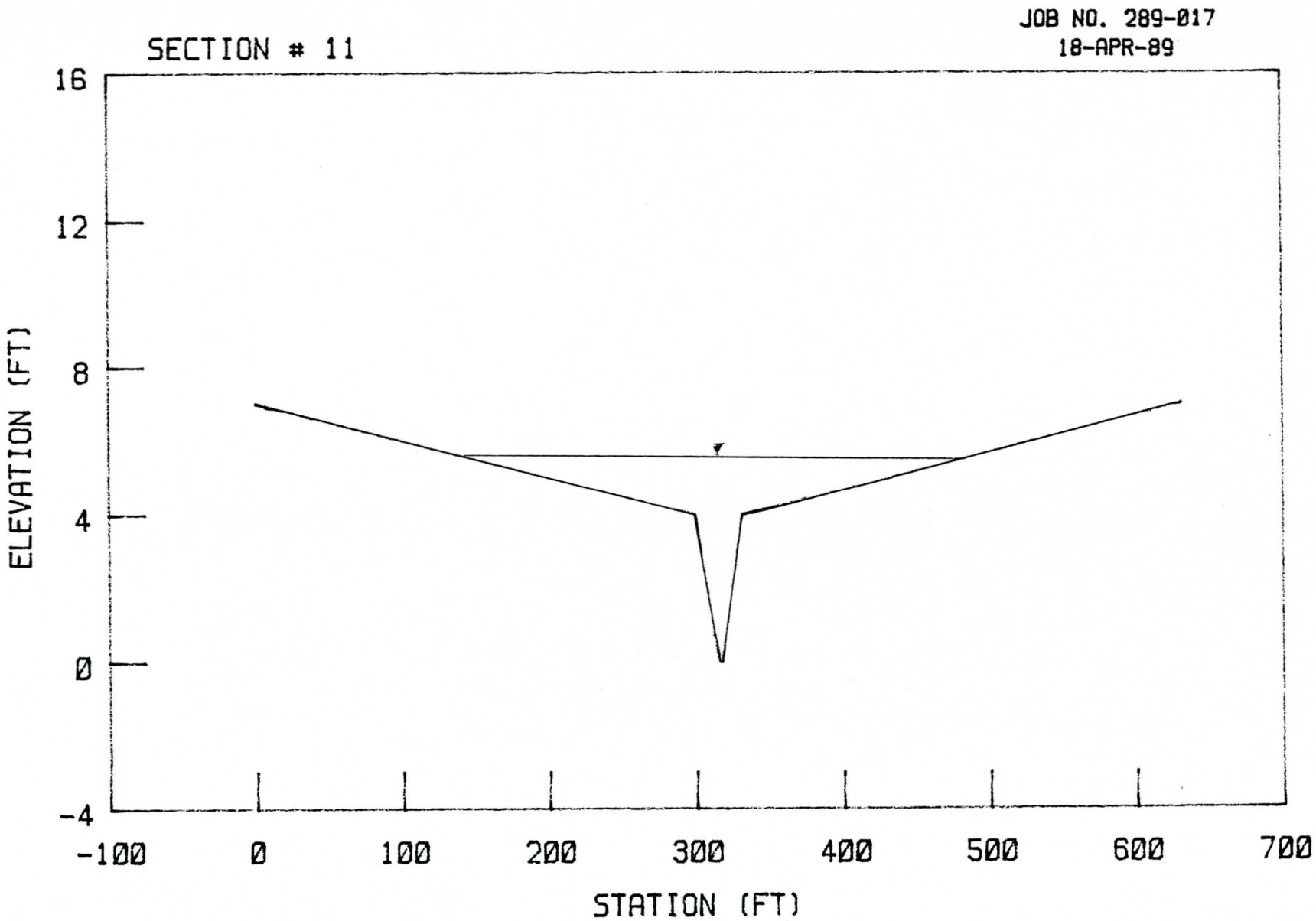
STA.	0.00	300.00	316.00	318.00	332.00	632.00
ELEV.	7.00	4.00	0.00	0.00	4.00	7.00
N	0.025	0.025	0.025	0.025	0.025	0.025

STATION 11.00

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	6.15	461.02	596.78	0.0:1	0.0:1	462.09

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.69	4.47	0.00400	2667.00	0.02500	5.78	6.05


JOB NO. 289-017
18-APR-89
SECTION # 11
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 12
BASIN # 50 LOWER 1/3
****

IRREGULAR CROSS SECTION

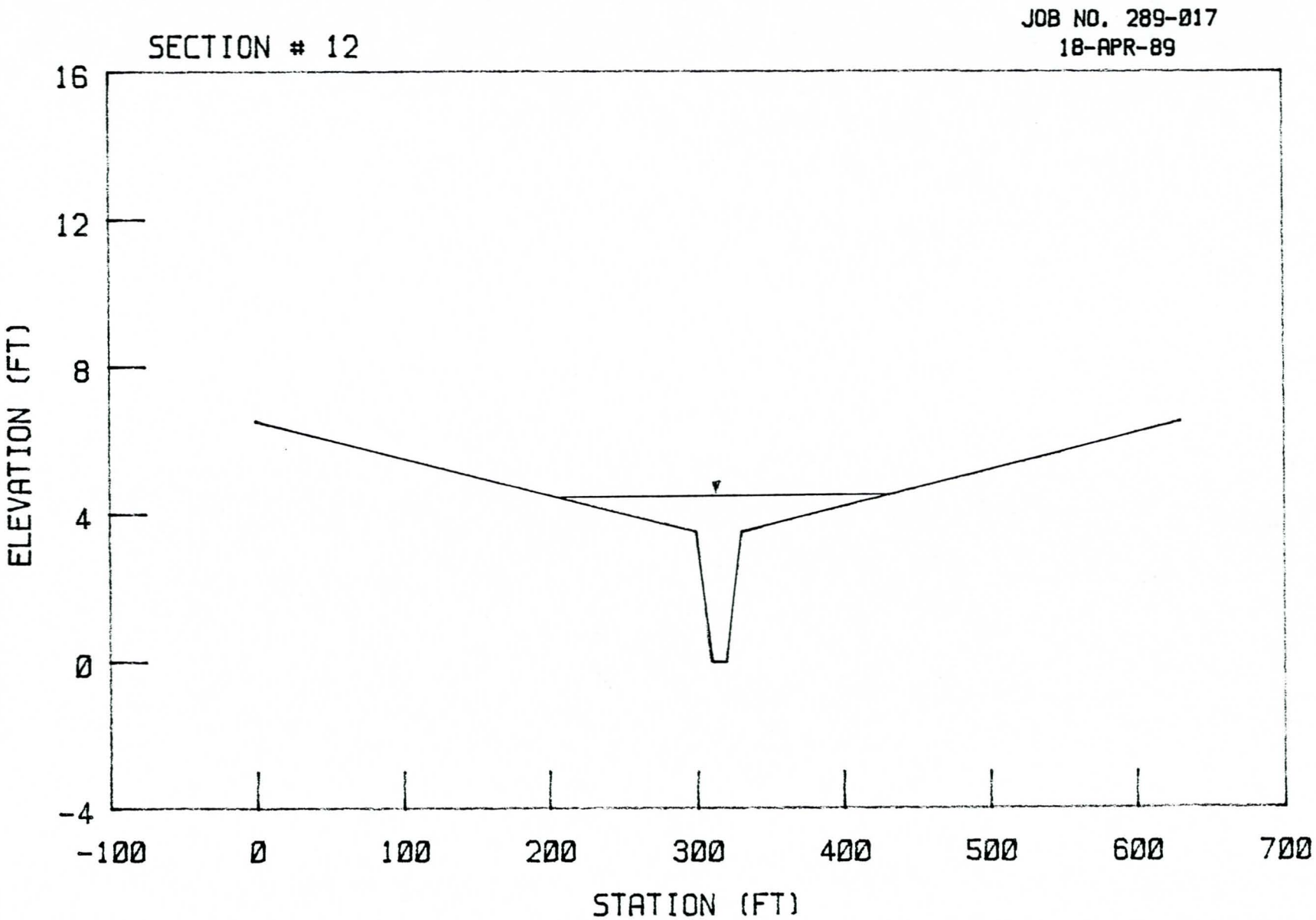
STA.	0.00	300.00	310.50	320.50	331.00	631.00
LEV.	6.50	3.50	0.00	0.00	3.50	6.50
N	0.030	0.030	0.030	0.030	0.030	0.030

SECTION # 1 STATION 1.00

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	4.67	264.53	244.29	0.0:1	0.0:1	265.68

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.77	4.20	0.00800	1026.00	0.03000	4.46	5.29


JOB NO. 289-017
18-APR-89
SECTION # 12
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 13
BASIN # 41
****

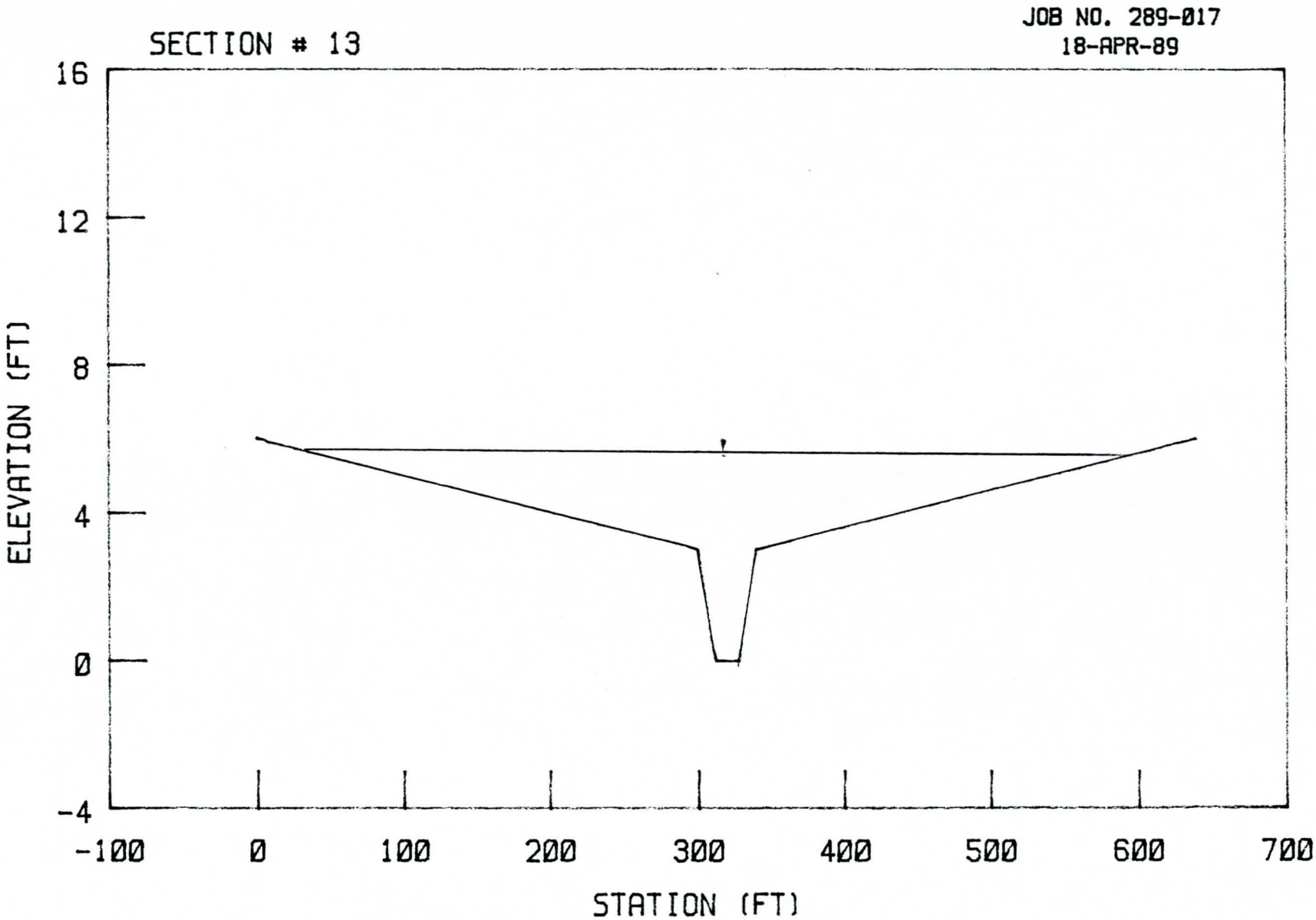
IRREGULAR CROSS SECTION

STA.	0.00	300.00	312.00	328.00	340.00	640.00
LEV.	6.00	3.00	0.00	0.00	3.00	6.00
N	0.040	0.040	0.030	0.030	0.040	0.040

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	5.63	566.12	881.23	0.0:1	0.0:1	566.88

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.71	5.06	0.01000	4460.00	0.03942	5.23	6.67


SECTION # 13
JOB NO. 289-017
18-APR-89
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 14
BASIN # 40
****

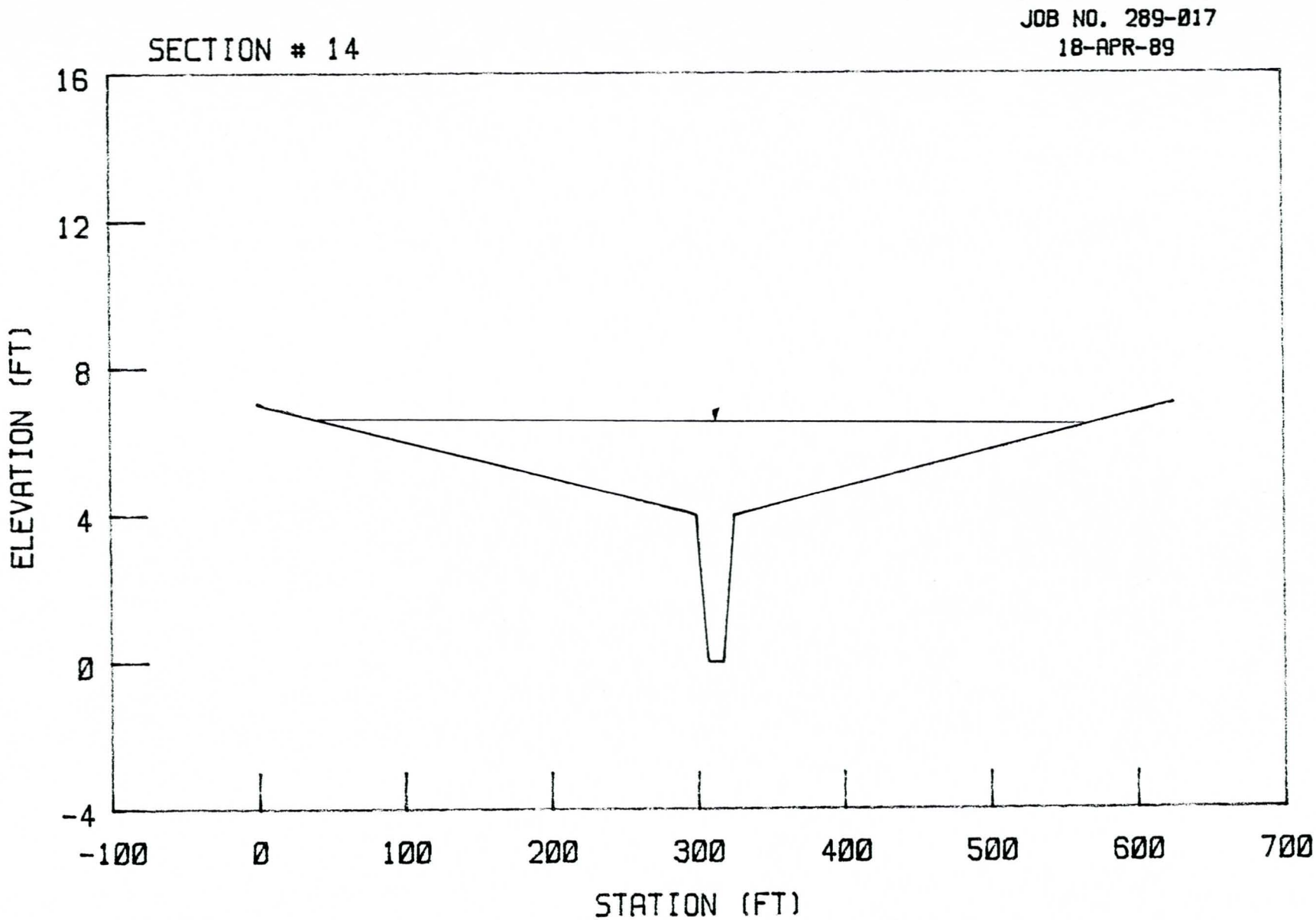
IRREGULAR CROSS SECTION

STA.	0.00	300.00	308.00	318.00	326.00	626.00
LEV.	7.00	4.00	0.00	0.00	4.00	7.00
N	0.035	0.035	0.030	0.030	0.035	0.035

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	6.53	531.24	775.86	0.0:1	0.0:1	533.16

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.80	5.49	0.01000	4263.00	0.03480	6.27	6.59


JOB NO. 289-017
18-APR-89
SECTION # 14
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
SECTION #15 BASINS 50,60,70,80,G
****

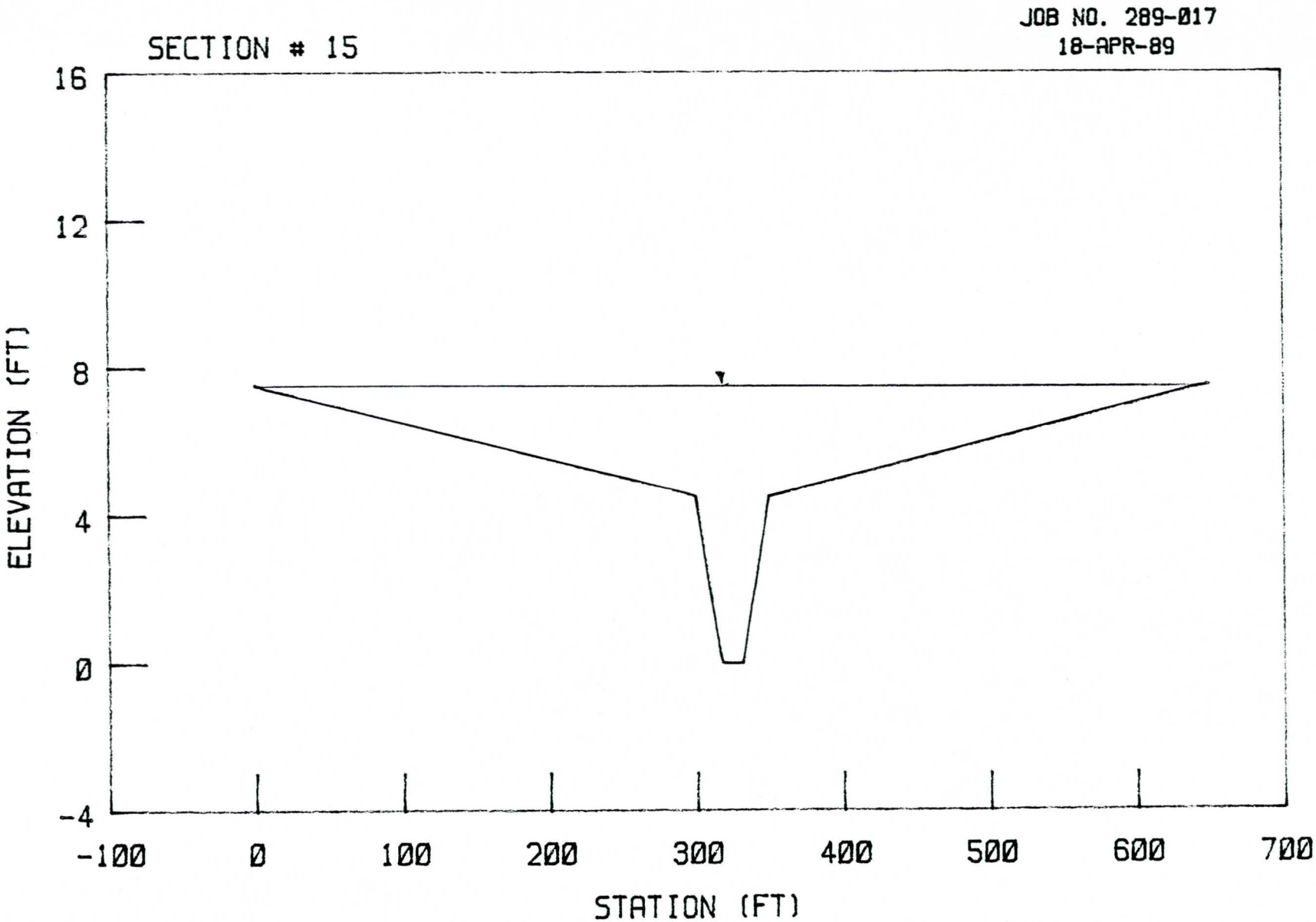
IRREGULAR CROSS SECTION

STA.	0.00	300.00	318.00	332.00	350.00	650.00
ELEV.	7.50	4.50	0.00	0.00	4.50	7.50
N	0.040	0.040	0.035	0.035	0.040	0.040

STATION 15.00

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	7.79	650.00	1382.24	0.0:1	0.0:1	651.72
FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.58	4.79	0.00600	6625.00	0.03971	7.03	7.26


JOB NO. 289-017
18-APR-89
SECTION # 15
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
SECTION #16 BASIN 70+80
****

IRREGULAR CROSS SECTION

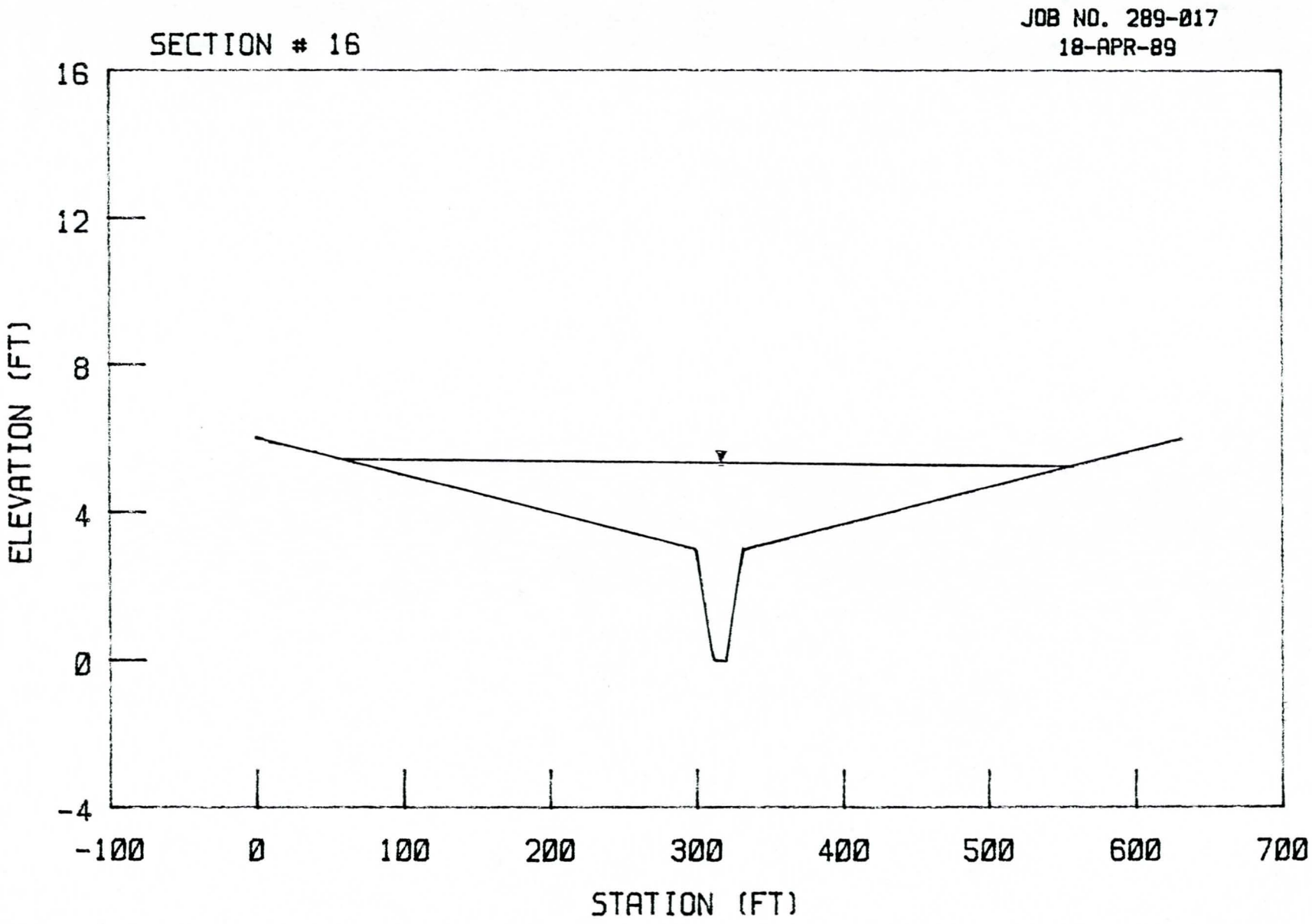
STA.	0.00	300.00	312.00	320.00	332.00	632.00
ELEV.	6.00	3.00	0.00	0.00	3.00	6.00
N	0.035	0.035	0.035	0.035	0.035	0.035

STATION 16.00

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	5.57	545.08	800.21	0.0:1	0.0:1	545.84

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.80	5.49	0.01000	4395.00	0.03500	5.31	6.60


SECTION # 16
JOB NO. 289-017
18-APR-89
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
SECTION #17 DOWNSTREAM BASIN 30
****

IRREGULAR CROSS SECTION

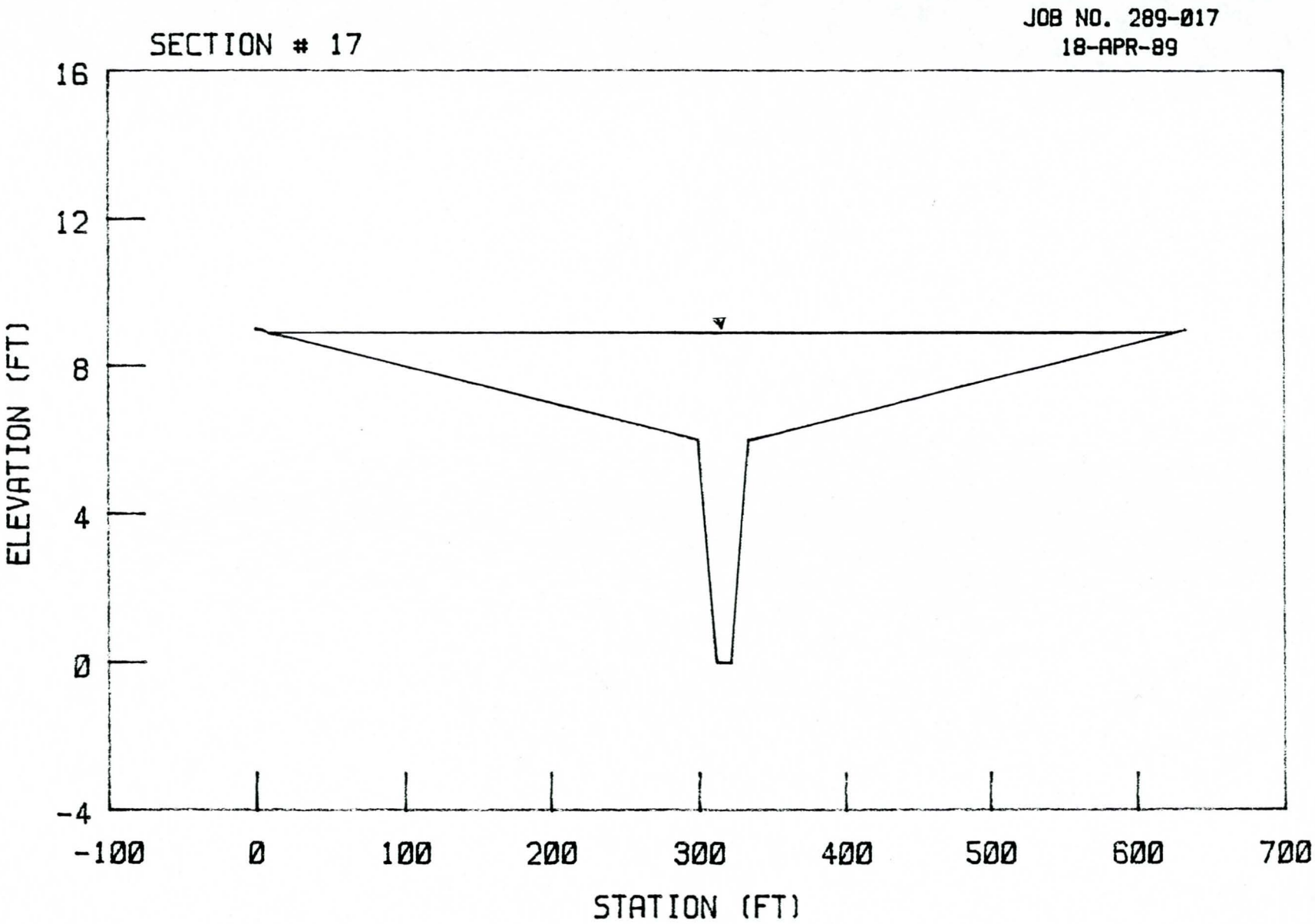
STA.	0.00	300.00	312.00	322.00	334.00	634.00
ELEV.	9.00	6.00	0.00	0.00	6.00	9.00
N	0.040	0.040	0.035	0.035	0.040	0.040

STATION 17.00

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	9.59	634.00	1505.11	0.0:1	0.0:1	638.03

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.90	7.85	0.01400	11810.00	0.03982	9.42	8.44


SECTION # 17
JOB NO. 289-017
18-APR-89
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
SECTION #18 BASIN E
****

IRREGULAR CROSS SECTION

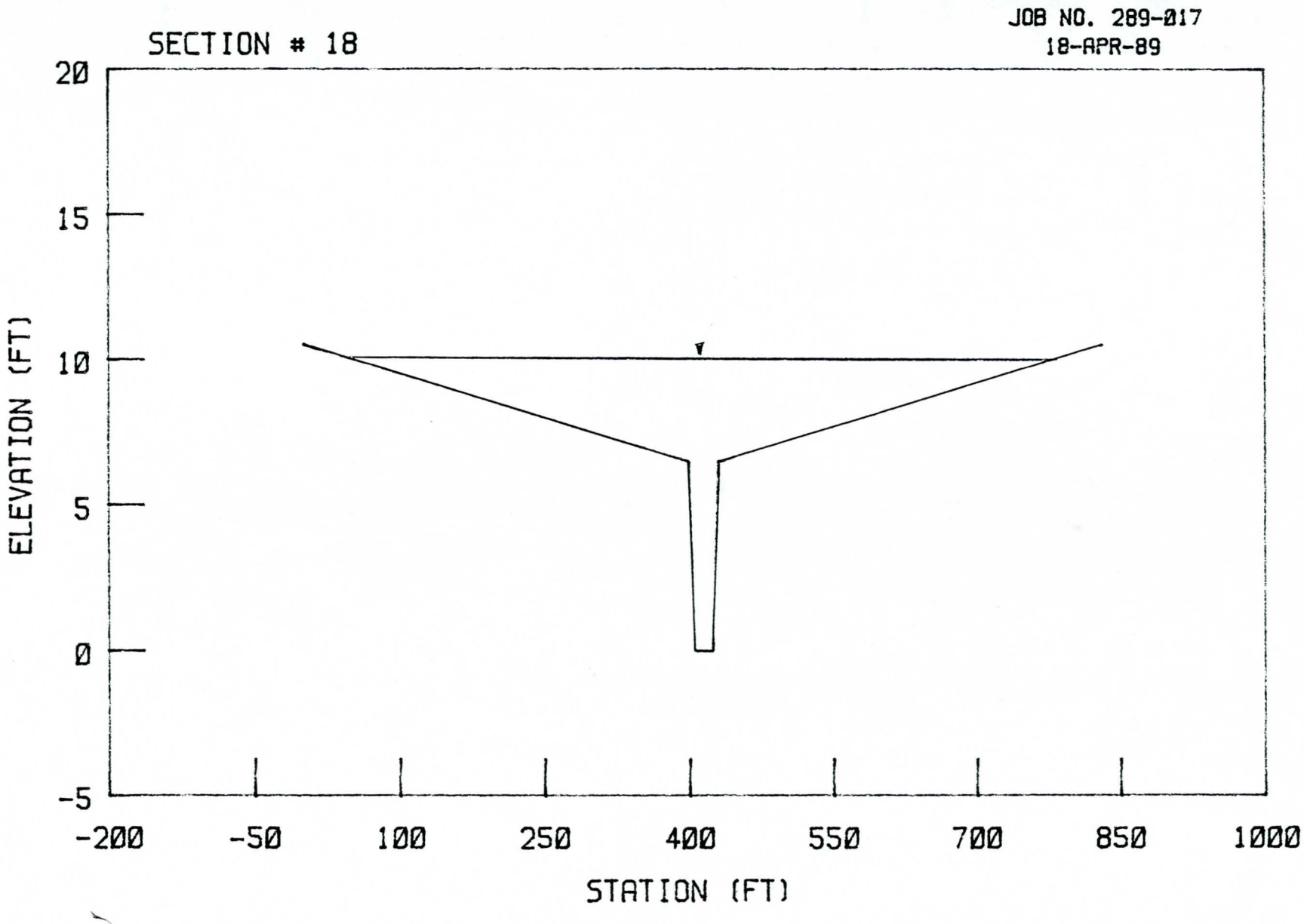
STA.	0.00	400.00	406.50	424.50	431.00	831.00
ELEV.	10.50	6.50	0.00	0.00	6.50	10.50
N	0.035	0.035	0.030	0.030	0.035	0.035

STATION 18.00

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	10.26	782.65	1688.21	0.0:1	0.0:1	788.08

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.93	7.78	0.01200	13142.00	0.03482	10.14	8.23


SECTION # 18
JOB NO. 289-017
18-APR-89
20
15
10
5
0
-5
ELEVATION (FT)
-200
-50
100
250
400
550
700
850
1000
STATION (FT)

****
89-017 SECTION # 19
BASIN # 20
****

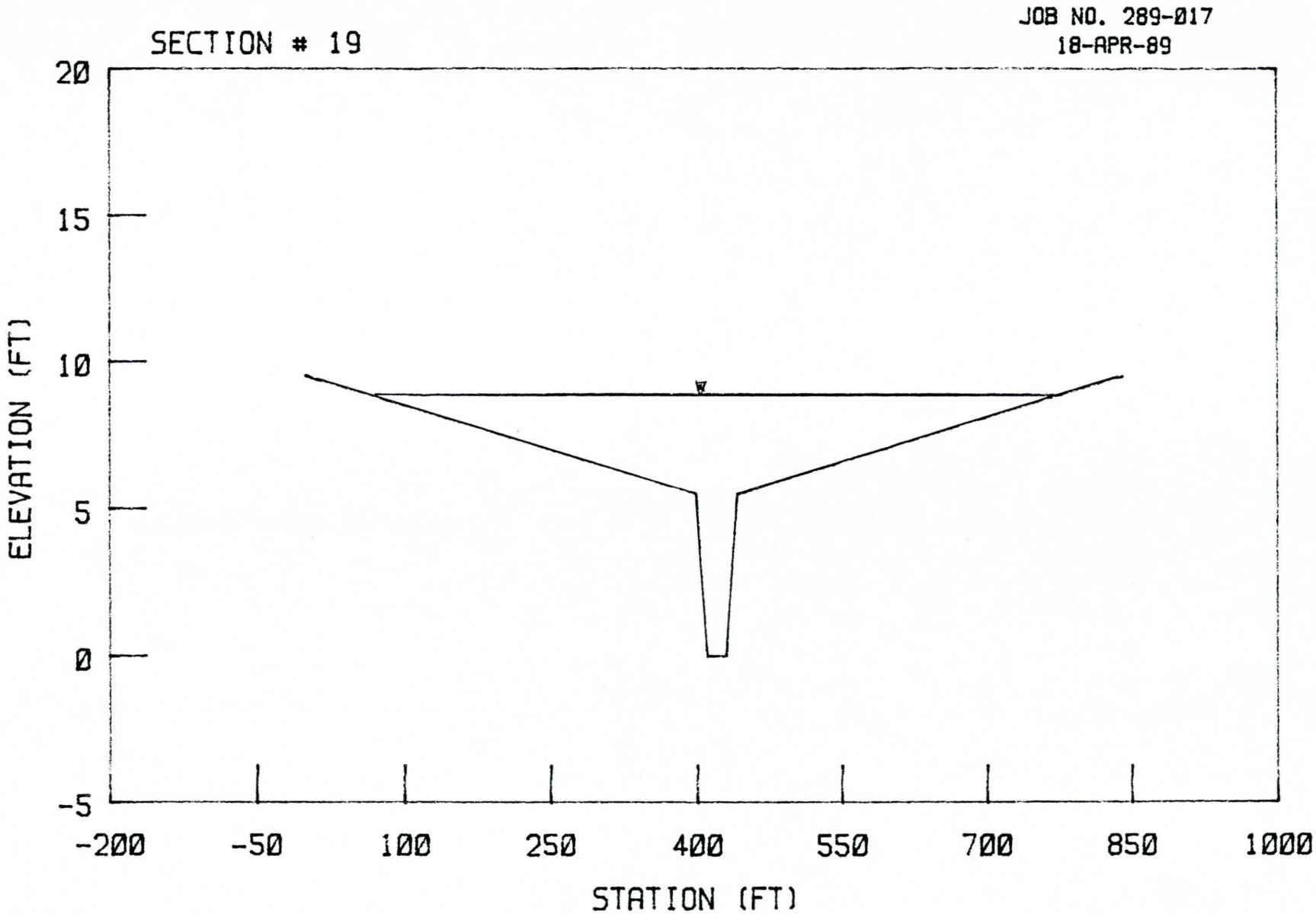
IRREGULAR CROSS SECTION

STA.	0.00	400.00	411.00	431.00	442.00	842.00
LEV.	9.50	5.50	0.00	0.00	5.50	9.50
N	0.035	0.035	0.030	0.030	0.035	0.035

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	9.05	752.06	1580.06	0.0:1	0.0:1	754.69

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.93	7.68	0.01200	12134.00	0.03478	8.93	8.12


SECTION # 19
JOB NO. 289-017
18-APR-89
20
15
10
5
0
-5
ELEVATION (FT)
-200
-50
100
250
400
550
700
850
1000
STATION (FT)

****
89-017 SECTION # 20
ASIN # 10
****

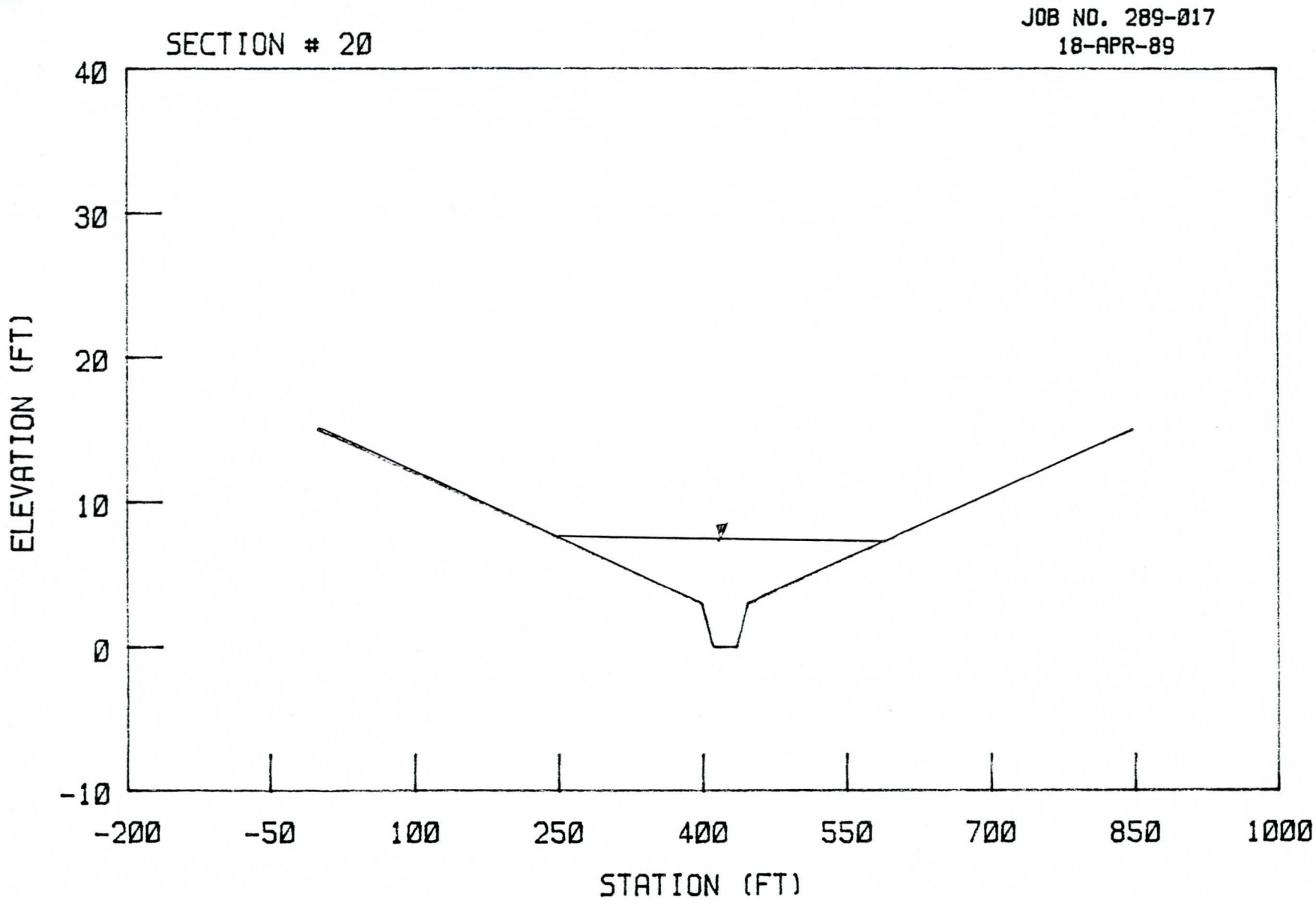
IRREGULAR CROSS SECTION

TA.	0.00	400.00	412.00	437.00	449.00	849.00
ELEV.	15.00	3.00	0.00	0.00	3.00	15.00
N	0.040	0.040	0.035	0.035	0.040	0.040

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	7.52	350.30	1013.33	0.0:1	0.0:1	351.18

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.87	8.38	0.01200	8493.00	0.03943	7.19	9.41


JOB NO. 289-017
18-APR-89
SECTION # 20
40
30
20
10
0
-10
ELEVATION (FT)
-200
-50
100
250
400
550
700
850
1000
STATION (FT)

****
89-017 SECTION # 21
UPS BASIN # 41
****

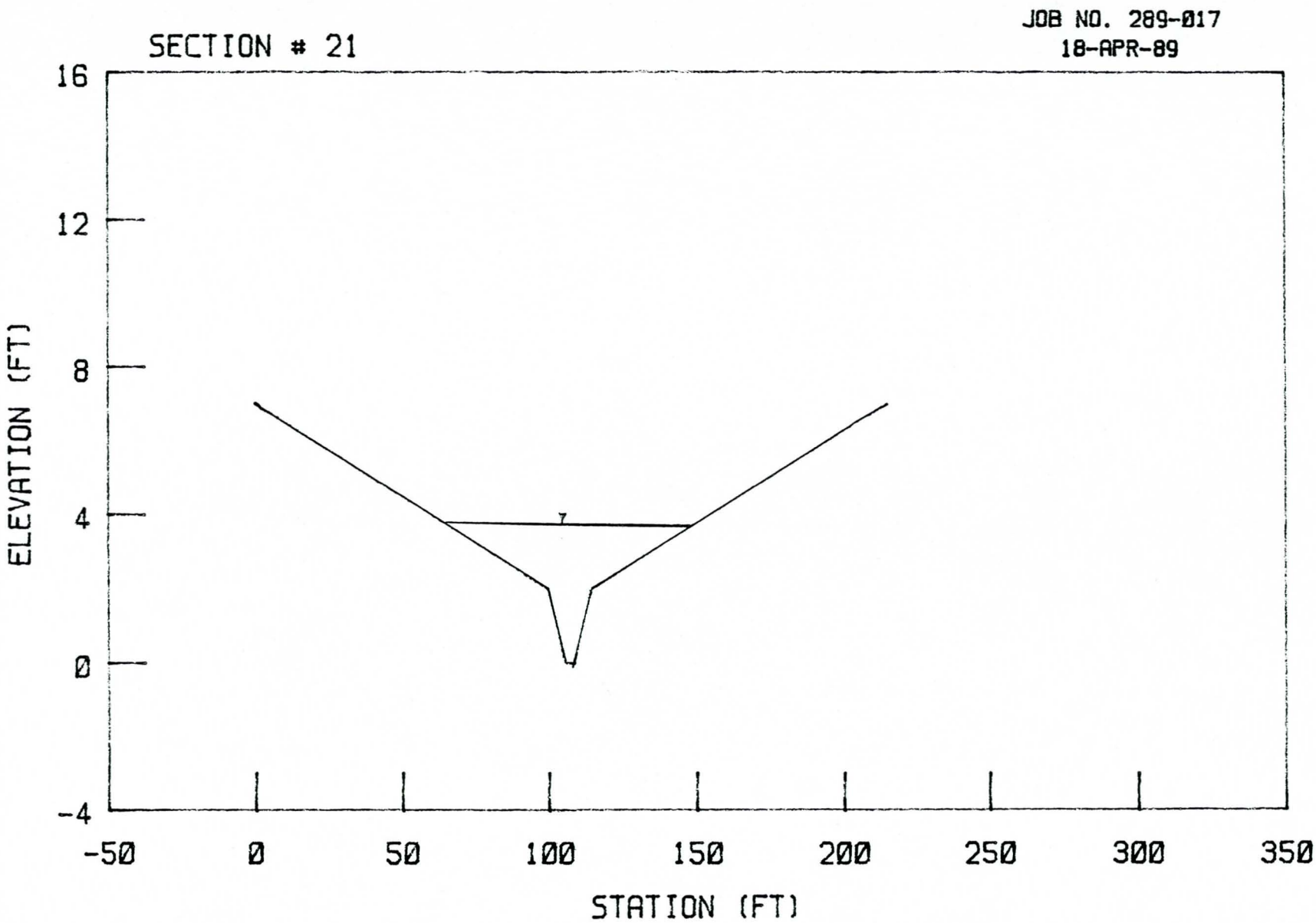
IRREGULAR CROSS SECTION

STA.	0.00	100.00	106.00	109.00	115.00	215.00
LEV.	7.00	2.00	0.00	0.00	2.00	7.00
N	0.040	0.040	0.040	0.040	0.040	0.040

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	3.64	80.40	96.00	0.0:1	0.0:1	81.14

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.67	4.17	0.01000	400.00	0.04000	3.26	5.82


SECTION # 21
JOB NO. 289-017
18-APR-89
16
12
8
4
0
-4
ELEVATION (FT)
-50
0
50
100
150
200
250
300
350
STATION (FT)

****
89-027 SECTION # 22
BASIN # 23
****

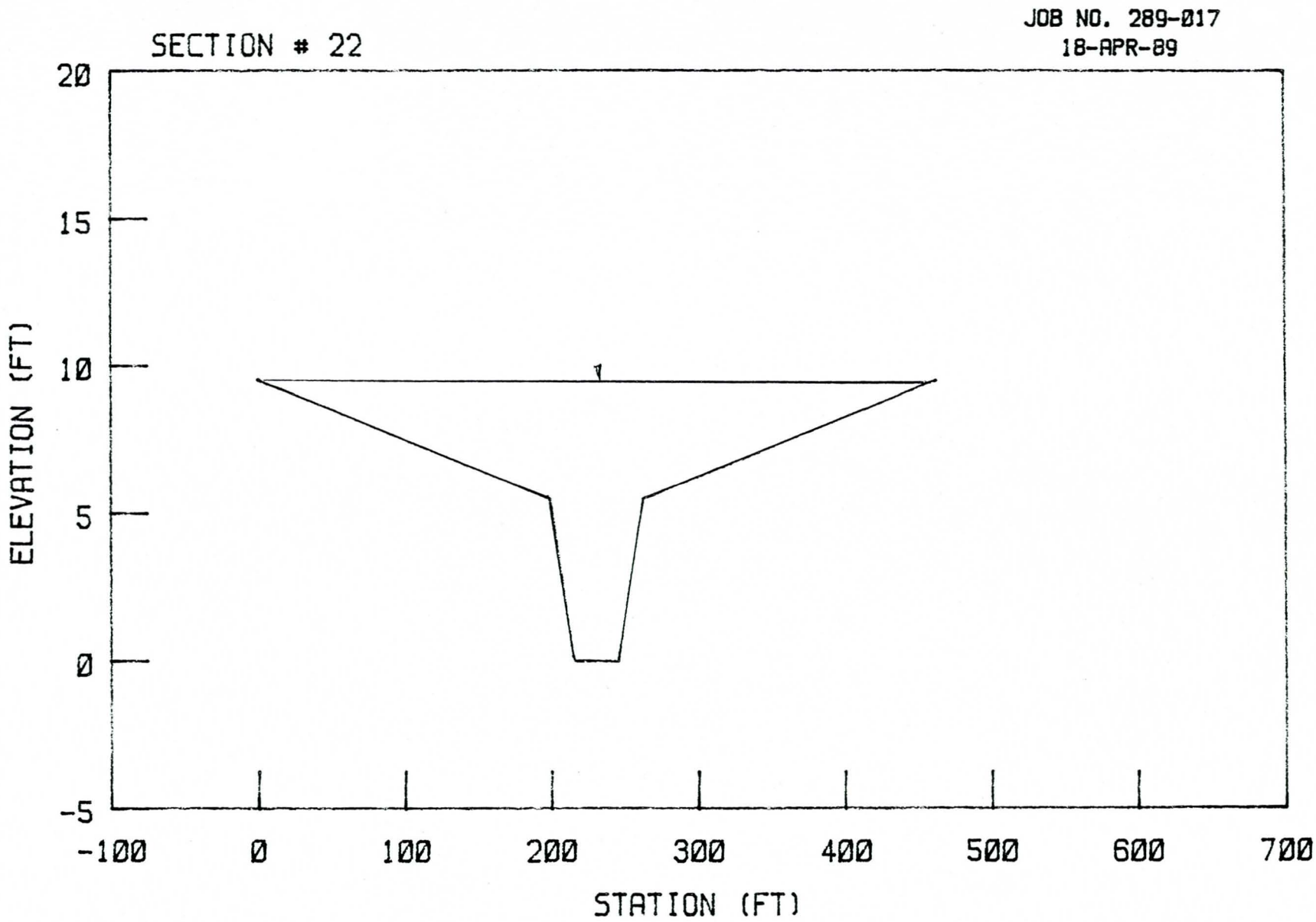
IRREGULAR CROSS SECTION

STA.	0.00	200.00	216.50	246.50	263.00	463.00
ELEV.	9.50	5.50	0.00	0.00	5.50	9.50
N	0.040	0.040	0.035	0.035	0.040	0.040

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	9.92	463.00	1504.09	0.0:1	0.0:1	465.71

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.72	7.37	0.00800	11091.00	0.03946	9.23	9.37


SECTION # 22
JOB NO. 289-017
18-APR-89
20
15
10
5
0
-5
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 23
BASIN # 11 UPS
****

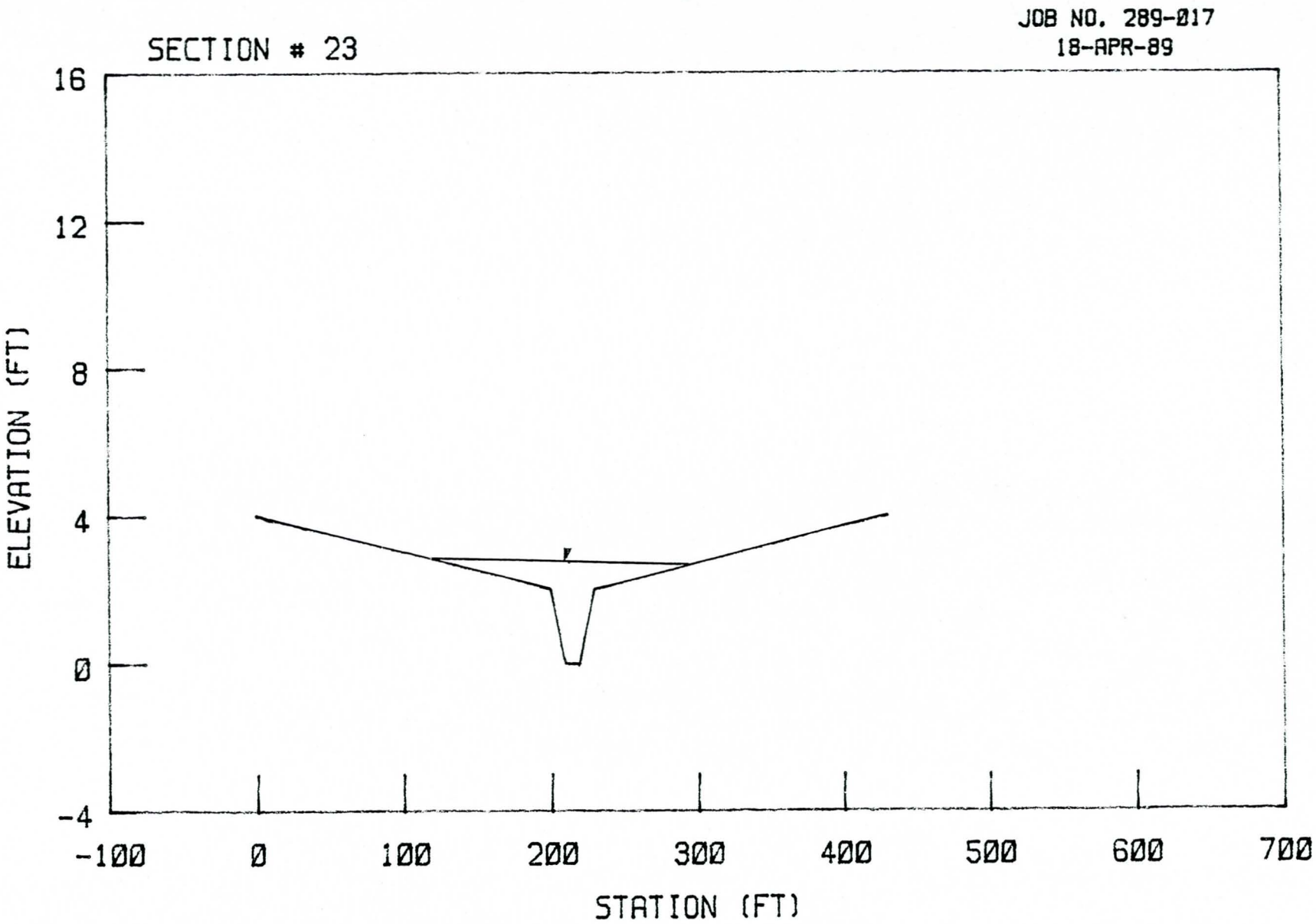
IRREGULAR CROSS SECTION

STA.	0.00	200.00	210.00	220.00	230.00	430.00
LEV.	4.00	2.00	0.00	0.00	2.00	4.00
N	0.035	0.035	0.030	0.030	0.035	0.035

ORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	2.77	183.28	121.72	0.0:1	0.0:1	183.68

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.71	3.29	0.01000	400.00	0.03430	2.57	4.48


JOB NO. 289-017
18-APR-89
SECTION # 23
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
39-017 SECTION # 24
BASIN # 14
****

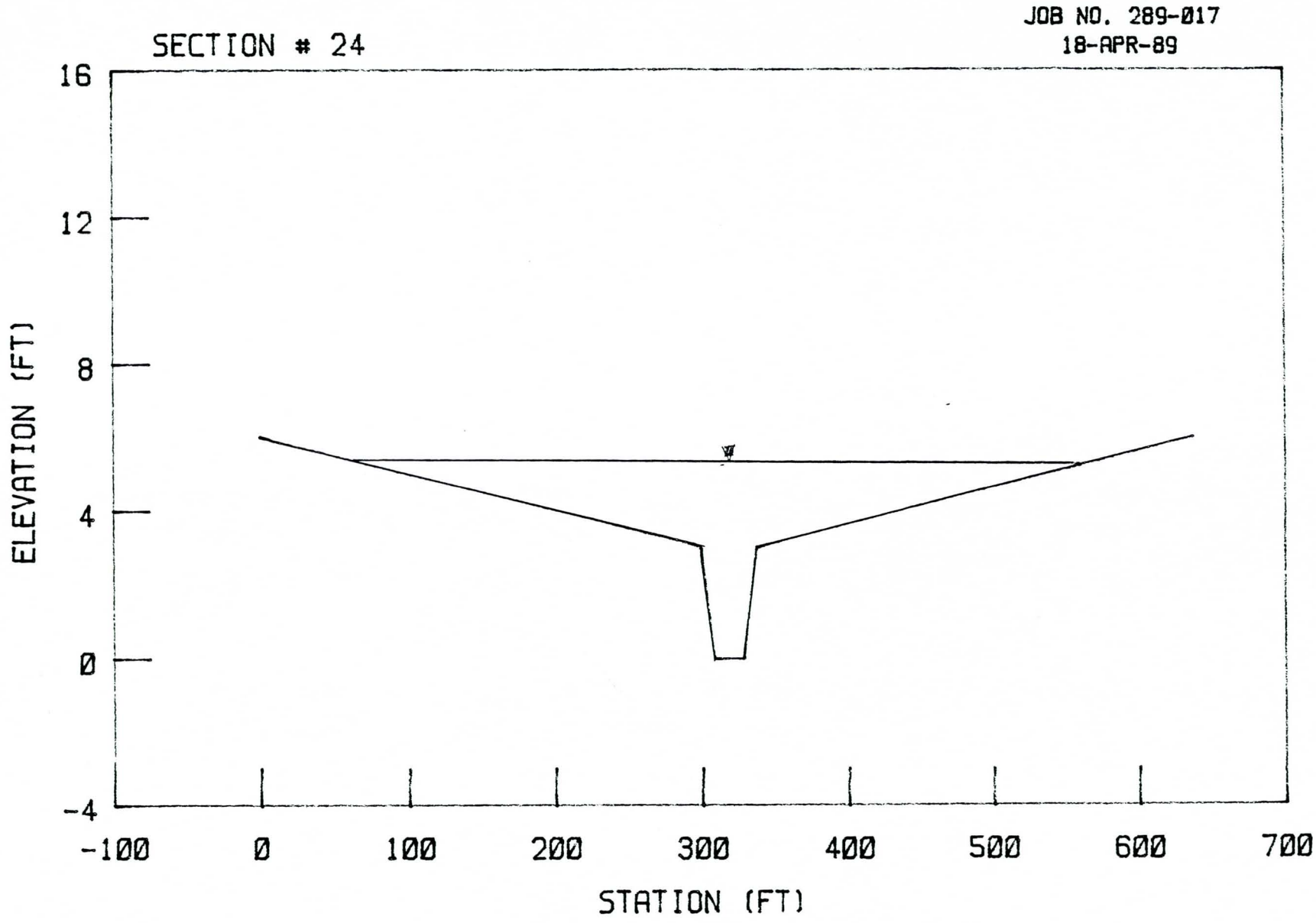
IRREGULAR CROSS SECTION

STA.	0.00	300.00	309.00	329.00	338.00	638.00
ELEV.	6.00	3.00	0.00	0.00	3.00	6.00
N	0.035	0.035	0.030	0.030	0.035	0.035

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	5.29	496.69	700.15	0.0:1	0.0:1	497.69

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.51	3.41	0.00400	2387.00	0.03458	4.58	6.01


JOB NO. 289-017
18-APR-89
SECTION # 24
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 25
BASIN # 24
****

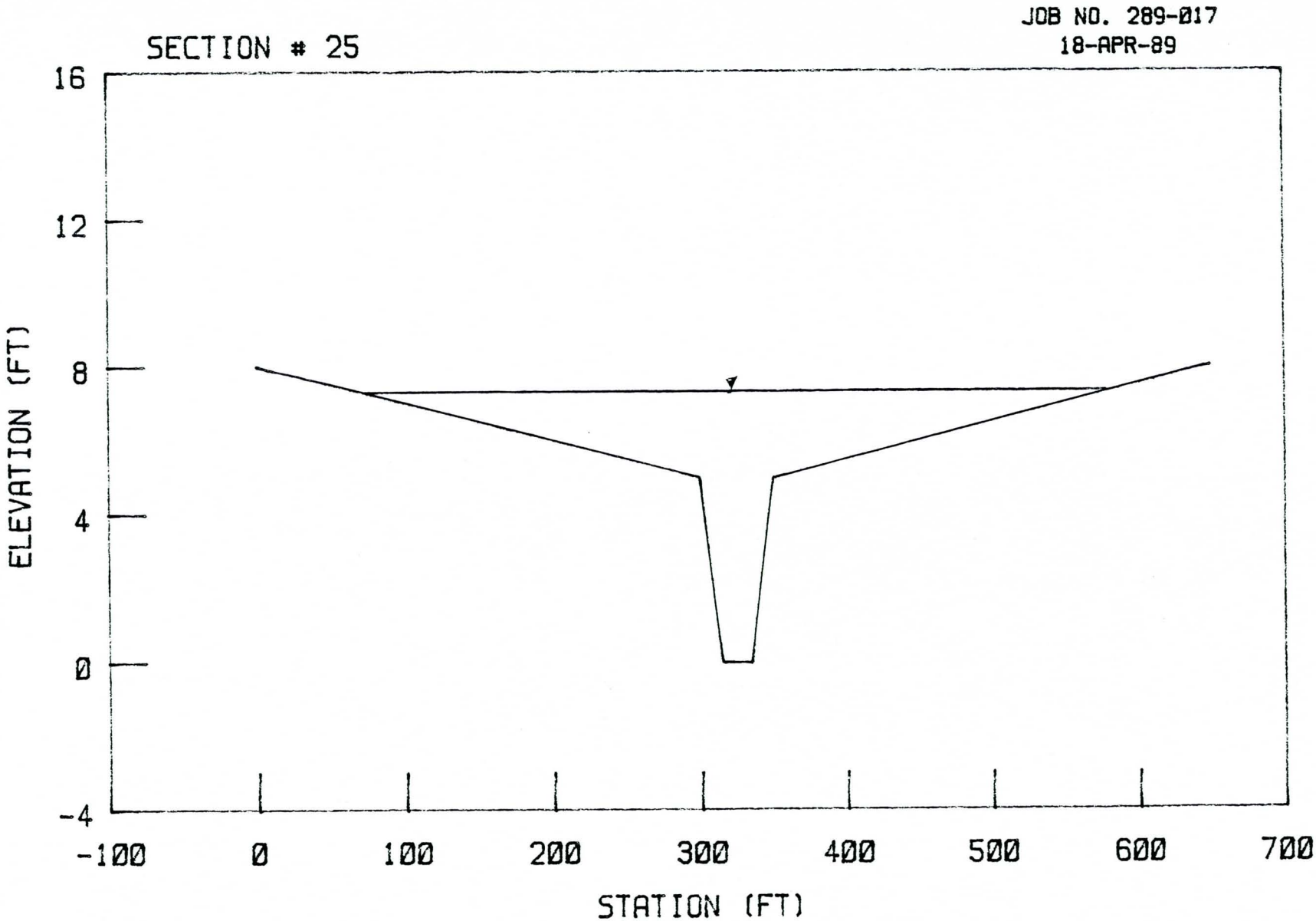
IRREGULAR CROSS SECTION

STA.	0.00	300.00	315.00	335.00	350.00	650.00
ELEV.	8.00	5.00	0.00	0.00	5.00	8.00
N	0.035	0.035	0.030	0.030	0.035	0.035

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	7.35	519.79	844.21	0.0:1	0.0:1	521.44

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.90	6.49	0.01200	5481.00	0.03464	7.20	7.12


JOB NO. 289-017
18-APR-89
SECTION # 25
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)

****
89-017 SECTION # 26
BASIN # 25
****

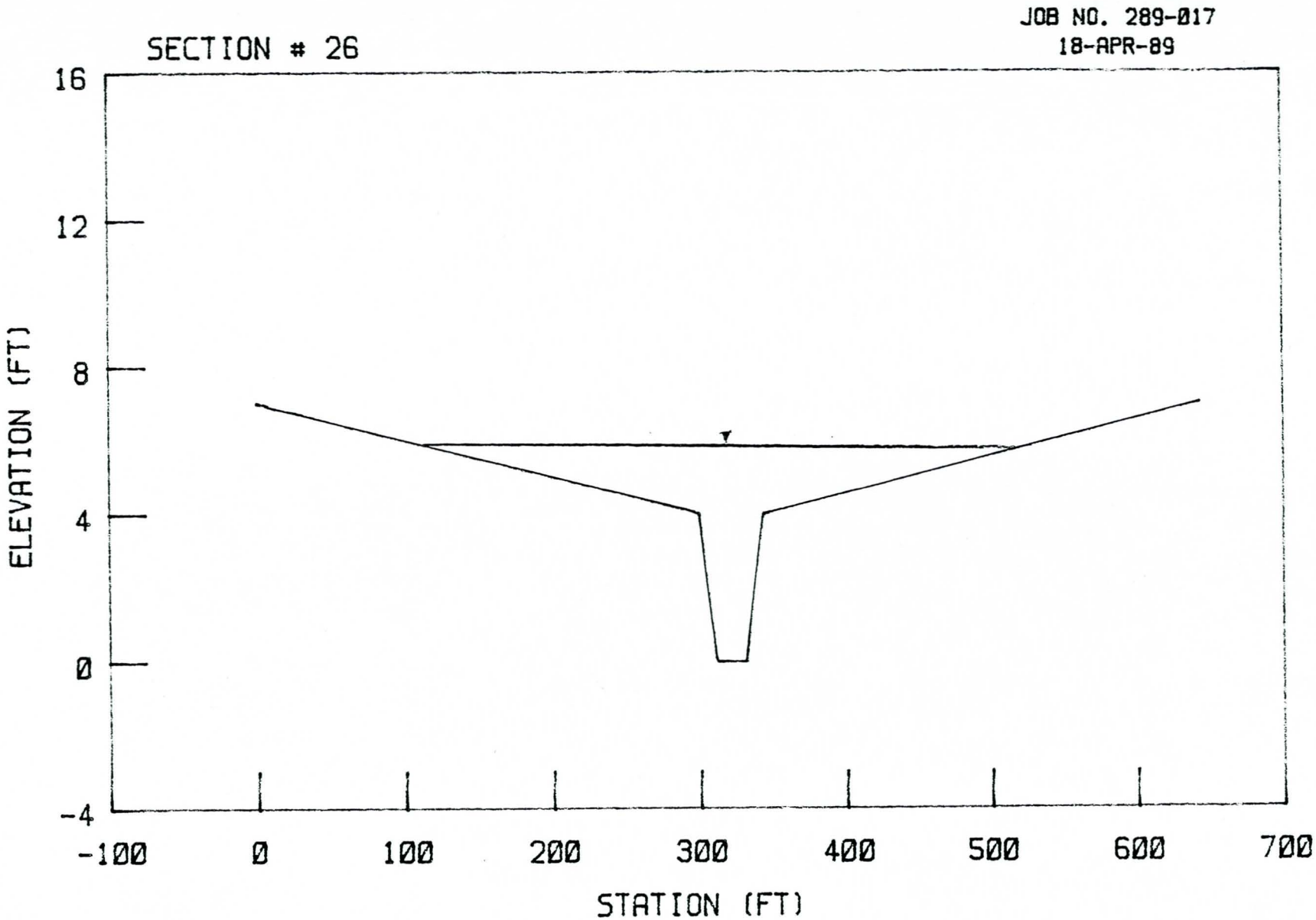
IRREGULAR CROSS SECTION

STA.	0.00	300.00	312.00	332.00	344.00	644.00
ELEV.	7.00	4.00	0.00	0.00	4.00	7.00
N	0.035	0.035	0.030	0.030	0.035	0.035

NORMAL FLOW COMPUTATION

BW	YN	TOP WIDTH	AREA	L.B. SLOPE	R.B. SLOPE	PERIMETER
0.00	5.82	408.66	540.66	0.0:1	0.0:1	409.97

FROUDE #	VELOCITY	SLOPE	DISCHARGE	N VALUE	YC	VC
0.87	5.67	0.01200	3067.00	0.03457	5.67	6.40


JOB NO. 289-017
18-APR-89
SECTION # 26
16
12
8
4
0
-4
ELEVATION (FT)
-100
0
100
200
300
400
500
600
700
STATION (FT)